VSMP General Permit for
Small Municipal Separate Storm Sewer Systems
Permit # VAR040037

Program Year One Annual Report

July 2013 – June 2014

James City County

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VSMP General Permit for James City County
Small Municipal Separate Storm Sewer Systems
Permit # VAR040037
Program Year One Annual Report

July 2013 – June 2014

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From: Woodruff, Melinda (DEQ) [mailto:Melinda.Woodruff@deq.virginia.gov]
Sent: Friday, August 22, 2014 1:06 PM
To: jgillespie@fmauthority.com; robert.s.reali@us.army.mil; bchile@wm.edu; searley@suffolkva.us; bennettc@yorkcounty.gov; asmall@williamsburgva.gov; ellen.roberts@poquoson-va.gov; melissa.lindgren@isleofwightus.net; Fran Geissler; rherzick@vims.edu; scott.brown@va.gov; peter.vandyke@nasa.gov; avkashiri@nsu.edu; phillip.winslow@navy.mil; dguglielmo@tcc.edu; jed.r.boba@uscg.mil; beaslejd@evms.edu; dean.whitehead@cnu.edu; Mallette@jlab.org; dalexand@odu.edu; Carlton, Charles (DBHDS); scott.m.maccumbee@uscg.mil; masonj@tncc.edu
Cc: Sauer, Mark (DEQ)
Subject: MS4 Annual Report Submittal Reminder

Dear Permittee,

This email serves as a reminder that in accordance with Section II.E.3 of the Small MS4 General Permit effective on July 1, 2013, the MS4 Annual Report for the reporting period of July 1, 2013 through June 30, 2014 is due on **October 1, 2014**. The report should include:

a. Background Information.
   (1) The name and state permit number of the program submitting the annual report;
   (2) The annual report permit year;
   (3) Modifications to any operator's department's roles and responsibilities;
   (4) Number of new MS4 outfalls and associated acreage by HUC added during the permit year; and
   (5) Signed certification;
b. The status of compliance with state permit conditions, an assessment of the appropriateness of the identified best management practices and progress towards achieving the identified measurable goals for each of the minimum control measures;
c. Results of information collected and analyzed, including monitoring data, if any, during the reporting period;
d. A summary of the stormwater activities the operator plans to undertake during the next reporting cycle;
e. A change in any identified best management practices or measurable goals for any of the minimum control measures including steps to be taken to address any deficiencies;
f. Notice that the operator is relying on another government entity to satisfy some of the state permit obligations (if applicable);
g. The approval status of any programs pursuant to Section II.C of the general permit (if appropriate), or the progress towards achieving full approval of these programs; and
h. Information required for any applicable TMDL special condition contained in Section I of the general permit.

Please also be reminded that the MS4 Program Plan should have been updated no later than by June 30, 2014 to address the program requirements list below. Note that revisions made to your program plan in accordance with the permit do not need to be submitted for review and approval. However, any changes to the plan need to be documented in the annual report.

a. MCM1 – Public education and outreach
b. MCM3 – IDDE
c. MCM5 – Individual Residential Lot Criteria
d. MCM5 – Inspection Procedures for Operator owned SWMF
e. MCM6 – Locations needing SWPPPs identified,
f. MCM6 – NMP
g. MCM6 – Training Schedules

The DEQ request that the 2013-2014 Annual Report be **submitted electronically** to the following email:

TRO.VPDESPermits@deq.virginia.gov

Attached you will find the certification statement that must be submitted with the annual report. Please include the signed certification statement as part of the electronic document that is submitted.

If you have any questions, please contact Mark Sauer at (757) 518-2105 or mark.sauer@deq.virginia.gov

Sincerely,

Melinda Woodruff
DEQ TRO - Water Permits
(757) 518-2174
Melinda.Woodruff@deq.virginia.gov

INTRODUCTION

An annual report is hereby submitted for James City County's General Permit for Small Municipal Separate Storm Sewer Systems (MS4). The report presents information in response to the electronic letter received on August 22, 2014 from the Virginia Department of Environmental Quality (DEQ). The majority of the report is a response to item (b) of the letter and consists of the MS4 Program Plan spreadsheet developed and submitted to DCR on March 27, 2013, as revised on September 6, 2013 for inclusion in the FY13 annual report. The spreadsheet presents information related to the various Program Plan measureable goals with the accomplishments of Program Year 1 beginning on July 1, 2013, and extending to June 30, 2014. Several of the updates are included in Appendices C-1 through C-6. Unless otherwise noted, the information submitted in the report is for the entire county not just the MS4 (urbanized) area.

a. *Background Information*
   1) James City County General Permit Number #VAR040037
   2) Annual Report Permit Year One – July 1, 2013 to June 30, 2014
   3) There are no modifications to the County's roles and responsibilities under the permit.
   4) There have been three new MS4 outfalls added within the County's MS4 area during this permit year at Toano Middle School, and one at the Forest Heights Neighborhood Improvement Project. These new outfalls have been included on the County's GIS-based MS4 storm sewer system map. The associated drainage area acreage by HUC for each system is presented in the following table:

County Facility	System #	HUC	Drainage Acreage
Toano Middle School	YC066	JL28	0.20
Toano Middle School	YC067	JL28	0.33
Toano Middle School	YC068	JL28	0.22
Forest Heights	PC289	JL31	18.10
TOTAL			**18.85**

   5) The signed certification statement is included in Appendix A of this report.

b. *Status of compliance.* The status of compliance with the permit conditions, an assessment of the appropriateness of the identified best management practices, and progress toward achieving the identified measureable goals for each of the minimum control measures is contained in the Appendix B spreadsheet.

c. *Results of information collected.* The County began a volunteer benthic monitoring program in 2008. See Appendix C-2 for the location of the four monitoring sites established on MS4-owned property. The data collected this program year represent the fifth year of the monitoring program. While this represents a relatively short monitoring period, some observations are possible.

   1) Station PCUT07 on Warhill Park Complex – The data from this site suggests that, at this time, the stream maintains a marginal rating for water quality at this location.

2) Station PCLS04 on Warhill Park Complex near Adams Hunt subdivision - The data indicate that the site is stable and maintaining a large, diverse benthic insect population associated with a good water quality stream.
3) YCMS04 in Oakland Estates subdivision (formerly known as the Debord tract) – This site has had to be discontinued due to a lack of accessibility. An alternative site in the watershed has been identified but it is not located on MS4 owned property.
4) Station PCLT01 adjacent to the Pointe at Jamestown neighborhood –The data suggests that the benthic population in this stream reach have been diverse and abundant and generally scores well, but there are occasions of monitoring showing reduced water quality.

d. *Planned stormwater activities*. The following stormwater activities are programmed to be undertaken during the next reporting cycle – July 1, 2014 to June 30, 2015.

1. MCM # 1 – Public Education and Outreach on Stormwater Impacts
    a. With assistance from the citizen members of the Stormwater Program Advisory Committee, continue implementation of the County's public education plan - Protect and restore our Clean Water Heritage Program - addressing prioritized water quality issues.
    b. Continue implementation of the Turf Love and Garden Love programs educating property owners on nutrient management and rain garden installation.
    c. Continue collaborative regional efforts through the Hampton Roads Planning District Commission.
2. MCM # 2 – Public Involvement and Participation
    a. Continue to provide support and opportunity to volunteer water quality monitors, including both benthic monitoring and coliscan screening.
    b. Continue implementation of the Clean Water Heritage grant program, encouraging upgrades and improvements to existing stormwater management facilities.
    c. Continue to support the program's citizen advisors through the Board-appointed Stormwater Program Advisory Committee.
    d. Continue existing efforts for public input through the County website and advertised email addresses.
    e. Support the Clean County Commission Annual Clean-up Activities.
    f. Update public participation plan to meet new requirements.
3. MCM # 3 – Illicit Discharge Detection and Elimination
    a. Continue updating MS4 outfall mapping based 2010 urbanized area.
    b. Continue ongoing illicit discharge education efforts.
    c. Continue dry weather screening of MS4 outfalls and investigate observed illicit discharges.
    d. Continue to implement procedures and protocols used to detect and address illicit discharges to the MS4.
    e. Review follow-up and enforcement procedures to ensure compliance with permit.
    f. Continue sanitary sewer system improvements in accordance with thee SSO consent order.
4. MCM # 4 – Construction Site Stormwater Runoff Control
    a. Continue to implement the program in accordance with state regulations.
    b. Continue documenting policies and procedures for inspection, plan review, and enforcement.

5. MCM # 5 – Post-Construction Stormwater Management in New Development and Development on Prior Developed Lands
    a. Continue to implement the program in accordance with state regulations.
    b. Continue documenting policies and procedures for inspection, plan review, and enforcement.
    c. Consider, develop and implement a progressive compliance and enforcement strategy to ensure responsible maintenance of stormwater facilities.
    d. Complete the Ware Creek (James City County portion) watershed management plan and continue development of the York River (James City County portion) watershed management plan.
    e. Continue to document procedures and protocols used to inspect and maintain County owned stormwater management facilities.
    f. Continue to perform annual inspection and maintenance efforts for County-owned stormwater management facilities.
    g. Continue ongoing inspection schedule for privately owner stormwater management facilities, including owner training and enforcement, as needed.
6. MCM # 6 – Pollution Prevention/Good Housekeeping for Municipal Operations
    a. Develop 10 stormwater pollution prevention plans for municipal fuel facilities with potential to contribute pollutants to the MS4 facility.
    b. Update and implement written procedures designed to minimize or prevent pollutants from daily activities, equipment maintenance and equipment storage.
    c. Continue implementing current nutrient management plans and developing plans for additional acres.
    d. Implement Pollution Prevention Training Plan and Administration Regulation 28 for municipal employees, customizing training to specific work-related needs.
7. TMDL Special Conditions
    a. Continue development of TMDL action plans for the Warwick River (Skiffes Creek) bacteriological TMDL, approved by EPA on February 29, 2008, and the Mill Creek and Powhatan Creek watershed bacteriological TMDL, approved by EPA on April 28, 2009.
    b. Continue development of a TMDL action plan for the Chesapeake Bay TMDL, addressing nitrogen, phosphorus and sediment, in accordance with DEQ Guidance Memorandum No. 14-2012.

e. *Changes to Best Management Practices*. The changes to the county's best management practices are the program plan changes for FY15-FY16 included in this report. In the program plan spreadsheet, the changes are noted in red.

f. *Reliance on another government entity.* James City County continues to fund Virginia Cooperative Extension for their support in the Turf Love and Garden Love programs.

g. *Approval of Programs*. The James City County Engineering and Resource Protection Division has been approved by DEQ as a VSMP authority. A copy of an approval letter dated March 29, 2014 accompanies this report in Appendix C-4.

h. *TMDL special conditions*. There are no applicable TMDL special conditions in this permit year.

Program changes. The Program Plan has been updated to address the program requirements in Table 1 of the permit. Changes are noted in red. Below are the highlights required within 12 months of permit coverage.

c. MCM1 – Public Education and Outreach – The JCCPride outreach program has been rebranded the James City County Clean Water Heritage Program. An outreach plan has been developed to address this requirement under the guidance of Section II B 1 of the permit.
d. MCM3 – IDDE – Illicit Discharge Procedures have been outlined under the guidance of section II B 3of the permit.
e. MCM5 – Individual Residential Lot Criteria – Strategies to promote the long-term maintenance of stormwater control measures have been developed and implemented as per section II B 5 c (1) (d)
f. MCM5 – Inspection Procedures for Operator owned SWMF – An Operations and Maintenance Manual has been created in accordance with section II B 5 of the permit.
g. MCM6 – Locations needing SWPPPs identified – Locations have been identified and development of SWPPs are underway as per section II B 6 b of the permit.
h. MCM6 – NMP – Locations requiring Nutrient Management Plans have been identified according to section II B 6 b of the permit.
i. MCM6 – Training Schedules – Training Schedule and Program is developed in accordance with section 11 B 6 of the permit.

MCM 1 Public Education and Outreach on Stormwater Impacts						
BMP	BMP Description	Measurable Goals	Metric	Responsible Party	Timeline	Associated Documents
1.1	Participate in regional committees: askHRgreen.org, Regional Stormwater Management Committee (RSMC), and SW Phase II Subcommittee					askHRgreen.org Annual Report, MOA, HRPDC Regional Cooperation in Stormwater Management
1.1a	*Regional Cooperation*	Maintain MOA with the HRPDC and participate in the regional processes, including the Regional Stormwater Management Program, the Stormwater Phase II Subcommittee, and askHRgreen.org	Maintain valid MOA	HRPDC and Stormwater Division	PY2 and ongoing	Hampton Roads Regional Stormwater Management Program Memorandum of Agreement (MOA) (see appendix)
1.1b	*askHRgreen.org*	Participate in at least 50% of askHRgreen.org Stormwater Education Subcommittee meetings	Number of meetings attended/Number of meetings held	Stormwater Division	Annually	Attendance List
1.1b1		Submit articles for **askHRgreen.org** blog on water quality improvement initiatives.	Number of articles submitted	**askHRgreen.org** Representative	Annually	**askHRgreen.org** website
1.1b2		Post volunteer opportunities on **askHRgreen.org** calendar	Number and types of events submitted	**askHRgreen.org** Representative & HRPDC Environmental Educator	Annually	**askHRgreen.org** website
1.1c	*Stormwater Phase II Subcommittee*	Participate in at least 50% of monthly Stormwater Committee Meetings.	Number of meetings attended/Number of meetings held	Stormwater Division	Annually	Attendance List
1.2	Implement the James City County Stormwater Public Information Plan developed in PY1	As described in Plan	As described in Plan	Stormwater Program Advisory Committee and Stormwater Division	PY2 and ongoing	James City County Stormwater Public Information Plan (see appendix)
1.2a	*Protect and Restore Our Clean Water Heritage (CWH) Program*	Distribute County-specific information to identified target audiences through a new Clean Water Heritage website. Target audiences include managed turf properties, pet and septic system owners and painting and cleaning businesses (IDDE)	Number of direct mailings to target audiences and percentage of audience reached	Stormwater Division	PY2 and ongoing	www.jamescitycountyva.gov/cleanwater
1.2b	*Promote CWH Program to educate citizens on hazards and legal implications of illegal discharges and improper disposal of waste*	General public outreach events	Number and type of events	Stormwater Division	PY2 and ongoing	Annual report

MCM 1 Public Education and Outreach on Stormwater Impacts						
BMP	BMP Description	Measurable Goals	Metric	Responsible Party	Timeline	Associated Documents
1.2c	*Turf Love Nutrient Management Planning for Homeowners and Community-owned lands*	Provide soil testing and nutrient management plans directly to property owners in order to reduce the unnecessary use of fertilizers	Number of nutrient management plans, number of property owner contacts	Turf Love Team and Master Gardeners (Virginia Cooperative Extension)	Annually	Annual report
1.3	Implement the Regional Media Campaign to Address High Priority Issues	Participate in the **askHRgreen.org** regional media campaign which will make impressions with a stormwater message via print, television (local municipal access, cable and local affiliate), radio, and social media				

MCM 1 Public Education and Outreach on Stormwater Impacts						
BMP	BMP Description	Measurable Goals	Metric	Responsible Party	Timeline	Associated Documents
1.3a	*Scoop the Poop campaign*	Make *Scoop the Poop* information and giveaways available at pet-related events as appropriate	Percentage of target audience reached through activities.	**askHRgreen.org** Stormwater Education Subcommittee	Annually	**askHRgreen.org** Annual Report
1.3b	*Promote Lawn Care campaign*	Run media campaigns and make lawn care best management practice guides available.	Percentage of target audience reached through activities.	**askHRgreen.org** Stormwater Education Subcommittee	Annually	**askHRgreen.org** Annual Report
1.3c	*Promote FOG campaign*	Participate in the **askHRgreen.org** regional media campaign which will make impressions with a stormwater message via print, television (local municipal access, cable and local affiliate), radio, and social media	Percentage of target audience reached through activities.	**askHRgreen.org** Stormwater Education Subcommittee	Annually	**askHRgreen.org** Annual Report
1.3d	*Relevant Message Implementation*	Conduct sufficient education and outreach activities designed to reach an equivalent 20% of each high priority audience.	Demographic, reach, frequency, & website click-through rates	**askHRgreen.org** Stormwater Education Subcommittee	Annually	**askHRgreen.org** Annual Report
1.3e	*Educate homeowners on the hazards of illegal discharges and improper disposal of waste*	Promote askHRGreen.org for list of locality contacts for citizens to report illegal discharges and to learn about proper disposal methods	Number of page visits	**askHRgreen.org Stormwater Education Subcommittee**	annually	**askHRgreen.org/stormwater-runoff/**
1.4	Evaluation and Assessment	Evaluate and assess progress towards meeting measurable goals.	In accordance with VAR040037, Section II E	Stormwater Division	Annually	Annual report

MCM 2 Public Involvement/Participation						
BMP	**BMP Description**	**Measurable Goals**	**Metric**	**Responsible Party**	**Timeline**	**Associated Documents**
2.1	Provide Public Notice of Program Plan and Modifications	Promote the availability of the operator's MS4 Program Plan and any modifications for public review and comment in accordance with public law.	Public notice of modifications.	Stormwater Division	Annually and as necessary	Virginia Code reference, updated plan
2.2	Make Program Plan and other Stormwater Program Information Available to Public	Provide the program plan, stormwater annual reports, the stormwater permit, and the stormwater ordinances on the County's website.	Public notice of modifications.	Stormwater Division	Ongoing	Program Plan, Annual Reports, Stormwater Permit and Ordinances
2.3	Promote and /or sponsor local activities to increase public participation in activities that improve water quality					James City County Stormwater Public Participation Plan (see appendix)
2.3a	*Support the Stormwater Program (citizen) Advisory Committee*	Continue to secure citizen advice and recommendations through regularly scheduled public meetings of the Committee	Number of meetings and agendas	Stormwater Division	Six times per year	SPAC minutes and publications
2.3b	*Clean Water Heritage Implementation Projects*	Conduct Clean Water Heritage implementation projects that promote water quality improvement through mini grant program for stormwater management facility owners	Number of funded projects and accomplishments	Stormwater Program Advisory Committee	Annually	Project documentation
2.3c	*Volunteer Water Quality Monitoring*	Provide equipment and training to citizens interested in monitoring County water bodies for biological health, fecal coliform levels or both	Number of sites monitored by type of monitoring	Stormwater Division	as appropriate for protocol per site	Water Quality Summaries
		Post volunteer opportunities on James City County website and the askHRgreen.org/calendar.	Number and types of events	Stormwater Division	Annually	James City County website, askHRgreen.org website
2.3d	*Garden Love Program*	Provide infiltration testing, designs and installation rebates directly to property owners for the installation of residential-scale rain gardens	Number of rain gardens installed and number of acres treated	Turf Love Team and Master Gardeners (Virginia Cooperative Extension)	Annually	Project documentation
2.3e	*Support the Clean County Commission Annual Clean up Activities*	Actively promote and encourage citizen involvement in the Clean County Commission annual neighborhood cleanup efforts	Number of participating neighborhoods, tons of trash collected	Clean County Commission	Annually	Project documentation
2.4	Evaluation and Assessment	Evaluate and assess progress towards meeting measurable goals.	In accordance with VAR040037, Section II E	Stormwater Division	Annually	Annual report

MCM 3 Illicit Discharge Detection and Elimination						
BMP	**BMP Description**	**Measurable Goals**	**Metric**	**Responsible Party**	**Timeline**	**Associated Documents**
3.1	Storm Sewer System Map	Maintain an accurate storm sewer system map and information table, including MS4 outfalls within the 2010 urbanized area	Updated information table	Stormwater Division	Annually	Updated information table
3.1a	*Mapping of 2010 Urbanized Area Outfalls*	Update the storm sewer system map and information table to include MS4 outfalls within the 2010 urbanized area	2010 urbanized area storm sewer system map	Stormwater Division	PY4	Updated information table
3.1b	*Notification of Downstream MS4*	Notify the downstream MS4 of any newly identified points of discharge	2010 urbanized area storm sewer system map	Stormwater Division	PY4	Notification Letters, if any
3.2	Illicit Discharge Detection & Elimination Ordinance	Continue implementing and enforcing the Illicit discharge/Stormwater Management Ordinance.	Number of investigations and actions taken	Stormwater Division	Ongoing	Stormwater Management Ordinance, Chapter 18A of County Code
3.3	Illicit Discharge Detection & Elimination Procedures					
3.3a	*Standard Operating Procedures*	Maintain updated IDDE SOPs for dry weather screening and complaint followup	Protocol for responding and investigating IDDE	Stormwater Division	Ongoing	SOPs Developed During PY1
3.3b	*Promote and publicize procedures for public reporting of illicit discharges*	Implement the Illicit Discharge Complaint Follow up standard operating procedures	Number of citizen complaints	Stormwater Division	Ongoing	Clean Water Heritage website
3.4	Continue implementing an illicit discharge detection and elimination program for the municipally-owned MS4 within the Urbanized Area.					
3.4a		Track illicit discharge detection and elimination activities.	Number of investigations and actions taken	Stormwater Division	Ongoing	PARS
3.4b		Perform dry weather screening of 50 (out of 70 total) MS4 outfalls on an annual basis.	Number of outfalls screened annually	Stormwater Division	Ongoing	Inspection Reports
3.4c		Yard inspections; Develop/enhance reporting relationship with Fire Department/Haz Mat Team; targeted education	Number of responses; number of inspections	Stormwater Division	Ongoing	Inspection Reports
3.5	Report all spills that reach state waters to the DEQ and DCR					
3.5a	*Report non-sewer spills and releases from small MS4 regulated properties that reach state waters to the Virginia EOC, who in turn reports to the DEQ.*	Report spills to Virginia EOC and file internal reports. Virginia EOC reports to Department of Environmental Quality's Pollution Response Program (PREP).	Number of internal reports. If applicable, obtain PREP Incidence Response number.	Fire Department	Report in accordance to Section III. G.	Internal report
3.5b	*Report Sanitary Sewer Overflows through SSORS database.*	Continue to utilize SSORS to report Sanitary Sewer Overflows	Number of overflows	James City Service Authority (JCSA)	As necessary	
3.6	Continue Sanitary Sewer System improvements in coordination with SSO consent order	Meet requirements of the Consent Order	Compliance accomplishments	JCSA	In accordance with Consent Order	As required by Consent Order
3.8	Evaluation and Assessment	Evaluate and assess progress towards meeting measurable goals.	In accordance with VAR040037, Section II E	Stormwater Division	Annually	Annual report

MCM 4 Construction Site Stormwater Runoff Control						
BMP	**BMP Description**	**Measurable Goals**	**Metric**	**Responsible Party**	**Timeline**	**Associated Documents**
4.1	Legal Authorities					
4.1.a	*LD Activities > 10,000 SF*	Continue to implement the James City County Erosion and Sediment Control Ordinance, Chapter 8 of the County Code	Number of regulated land-disturbing activities, number of acres disturbed, number of inspections	Engineering and Resource Protection Division	Ongoing	PARS
4.1.b	*CBPA LD Activities >2,500 SF*	Continue to implement the James City County Erosion and Sediment Control Ordinance, Chapter 8 of the County Code	Number of regulated land-disturbing activities, number of acres disturbed, number of inspections	Engineering and Resource Protection Division	Ongoing	PARS
4.1.c	*E&SC LD Activities*	Continue to implement the James City County Erosion and Sediment Control Ordinance, Chapter 8 of the County Code	Number of regulated land-disturbing activities, number of acres disturbed, number of inspections	Engineering and Resource Protection Division	Ongoing	PARS
4.1.d	*Individual Lot or CPOD LD Activities > 10,000 SF*	Continue to implement the James City County Erosion and Sediment Control Ordinance, Chapter 8 of the County Code	Number of regulated land-disturbing activities, number of acres disturbed, number of inspections	Engineering and Resource Protection Division	Ongoing	PARS
4.2	Plan Review Process	Continue to implement the site plan review, LID implementation where deemed appropriate, construction site BMP, and inspection provisions of the County's Erosion and Sediment Control Ordinance.	Number of plan reviews, Number of plan approvals	Engineering and Resource Protection Division	Ongoing	PARS
4.3	Compliance and Enforcement					

MCM 4 Construction Site Stormwater Runoff Control						
BMP	**BMP Description**	**Measurable Goals**	**Metric**	**Responsible Party**	**Timeline**	**Associated Documents**
4.3a	*Construction Site Inspection Program*	Implement construction site inspection program with sufficient frequency to ensure complaince with approved erosion and sediment control plan or agreement in lieu of plan in accordance with Chapter 8 of the County Code.	Number of inspection, inspection frequency	Engineering and Resource Protection Division	Ongoing	PARS
4.3b	*Citizen Complaint Process*	Continue to receive and respond to information from citizens relating to the County's erosion and sediment control program through personal visits, email, telephone, and the County's web page.	Number of calls/requests, number of site visits	Engineering and Resource Protection Division	Annually	PARS
4.3c	*Enforcement*	Continue to implement progressive compliance and enforement strategy where appropriate in accordance with Chapter 8 of the County Code.	Number and type of enforcement actions	Engineering and Resource Protection Division	Annually	PARS
4.4d	*Written Compliance and Enforcement Procedures*	Review and update written complaince and enforcement procedures to control erosion and sediment and prevent the discharge of nonstormwater to the MS4.	Protocol	Engineering and Resource Protection Division	PY2	Protocol
4.4	Regulatory Coordination	Implement inspection provisions of the local Stormwater Management Ordinance for VSMP authority permits including Pollution Prevention Plans contained within the SWPPP.	Number of permit applications, permits issued and inspections	Engineering and Resource Protection Division	Annually	Copies of permits and registration statements
4.5	Certifications	Ensure that plan reviewers, inspectors, and program administrators obtain the appropriate certifications as required under the Erosion and Sediment Control Law and the Stormwater Management Act.	Certifications obtained	Engineering and Resource Protection Division	Ongoing	Copies of certificates
4.6	Tracking and Reporting	Continue to track and report through appropriate tracking systems.	the total number of permitted land disturbing activities, disturbed acreage, inspections conducted and number and type of enforcement actions taken	Engineering and Resource Protection Division	Annually	PARS and Enforcement Documentation
4.7	Evaluation and Assessment	Evaluate and assess progress towards meeting measurable goals.	In accordance with VAR040037, Section II E	Engineering and Resource Protection Division	Annually	Annual report

MCM 5 Post-Construction Stormwater Management in New Development and Development of Prior Developed Lands						
BMP	**BMP Description**	**Measurable Goals**	**Metric**	**Responsible Party**	**Timeline**	**Associated Documents**
5.1	Oversight Requirements	Continue to implement the stormwater criteria of the Chesapeake Bay Preservation, and Erosion and Sediment Control Ordinances for new development and redevelopment, and update ordinances to comply with Section II.5.a of the General Permit.	Updated Ordinance, Chapter 8, County Code	Engineering and Resource Protection Division	Ongoing	Chapter 8, Article II of the County Code - The Virginia Stormwater Management Program
5.2	VSMP Permits	Continue to require construction site owners and operators to secure authorization to discharge stormwater from construction activities under a VSMP permit for construction activities that result in a land disturbance of greater than or equal to 2500 square feet in all areas of the County as the entire County is designated as a Chesapeake Bay Preservation Area.	Number of permit registration statements and permits obtained.	Engineering and Resource Protection Division	Ongoing	File copies of permits and registration statements
5.3	Inspection and O&M Verification for Privately-owned BMPs					
5.3a	*BMP Maintenance Agreements*	Continue to require BMP maintenance agreements as required by the Chesapeake Bay Preservation Ordinance.	Number of agreements	Engineering and Resource Protection Division	Ongoing	Maintenance Agreements
5.3b	*Inspection Activities*	Continue to implement inspections of private stormwater management facilities	Number of inspections	Stormwater Division	Ongoing	Inspection Database
5.3c	*Enforcement Program*	Develop and implement a progressive compliance and enforcement strategy	Enforcement Protocol	Stormwater Division	PY2	Written procedures
5.3d	*Individual Residential Lot Program*	Implement the residential BMP protocol developed in PY1	Residential BMP Protocol	Stormwater Division/Engineering and Resource Protection Division	Ongoing	Inspection Database
5.3e	*Publically Owned BMP Program*	Inspect all publically owned BMPs annually and implement appropriate maintenance as needed.	Number of inspections, annual maintenance activities	Stormwater Division	PY2 onward	County BMP O&M Manual, Inspection Database, Work Order database
5.4	BMP Tracking	Maintain a database of all known permanent stormwater management facilities that discharge to the regulated small MS4 including: (a) Type of structural stormwater management facility; (b) Geographic location; (c) Number of acres treated; (d) date facility was brought on line; (e) hydrologic unit code; (f) the impaired surface water that the stormwater management facility is discharging into; (g) ownership; whether or not a maintenance agreement exists; and (h) date of last inspection.	Stormwater Database	Stormwater Division	Ongoing	Stormwater Database
5.5	Evaluation and Assessment	Evaluate and assess progress towards meeting measurable goals.	In accordance with VAR040037, Section II E	Stormwater Division	Annually	Annual report

MCM 6 Pollution Prevention/Good Housekeeping for Municipal Operations						
BMP	**BMP Description**	**Measurable Goals**	**Metric**	**Responsible Party**	**Timeline**	**Associated Documents**
6.1	Operations & Maintenance Program					
6.1a	*Support the County-wide Pollution Prevention Team*	Continue to secure advice and recommendationson pollution prevention efforts from County deprtments and agencies through regularly scheduled public meetings of the Team and implement the Pollution Prevent Program contained in the James City County Administrative Regulation # 28, Pollution Prevention Program	Number of meetings and agendas	Stormwater Division	Twice per year	Meeting minutes and publications, AR# 28
6.1b	*Implement Current Standard Operating Procedures (SOPs) for General Services and Parks & Recreation Facilities*					
		Continue to implement SOPs for General Services facilities to include activities, schedules, and inspection procedures that include provisions and controls to reduce pollutant discharges into the regulated small MS4 and receiving surface waters.	SOPs	Stormwater Division/ General Services	Ongoing	SOPs
		Continue to implement SOPs for Parks and Recreation facilities to include activities, schedules, and inspection procedures that include provisions and controls to reduce pollutant discharges into the regulated small MS4 and receiving surface waters.	SOPs	Stormwater Division/ Parks and Recreation	Ongoing	SOPs
6.1c	*Spill Prevention & Control Plans*	Continue to implement and update plans describing spill prevention and control procedures for municipal facilities developed during past permit cycle.	Standard Operating Procedure (SOP) Implementation	Stormwater Division	Ongoing	SPCC Plans
6.1d	*Update and/or Develop Written Procedures*	Ensure that actions included in written procedures and SOPs (a) prevent illegal discharges; (b) ensure proper disposal of waste materials; (c) prevent discharge of vehicle wash water w/o a separate VPDES permit; (d) prevent the discharge of wastewater; (e)require BMPs when discharging pumped water from maintenance activities; (f) minimize pollutants from stockpiles; (g) prevent pollutants from municipal vehicles; and (h) ensure that chemicals are used or applied in accordance with product labels.	Updated Written Procedures	Pollution Prevention Team and Stormwater Division	PY2	Updated Written Procedures
6.2	Stormwater Pollution Prevention Plans (SWPPPs)	Finalize draft SWPPPs for Fire Department Fuel Sites (4), the James City Service Authority Fuel Site (1), the Law Enforcement Center Fuel Site, the Convenience Centers (3) and the Williamsburg-James City County Schools Operations Center Fuel Site.	10 SWPPPs	Pollution Prevention Team and Stormwater Division	PY2	10 SWPPPs
6.2a	*SWPPP Implementation*	Begin implementation of final SWPPPs, including installing needed site upgrades	Site Improvements	Pollution Prevention Team and Stormwater Division	PY3	Site Improvements
6.3	Turf and Landscape Management	Continue developing and implementing certified nutrient management plans (NMPs) on at least 15% of the identified acreage meeting the requirement threshold	Completed NMPs	Turf Love and General Services Grounds Maintenance Division	PY2	GIS Layer and information table
		Continue developing and implementing certified nutrient management plans (NMPs) on at least 40% of the identified acreage meeting the requirement threshold	Completed NMPs	Turf Love and General Services Grounds Maintenance Division	PY3	GIS Layer and information table
6.4	Employee Education & Training	Implement employee training in accordance with AR#28 and the biennial Pollution Prevention Training Plan developed in PY1.	Number of training events and topics	Pollution Prevention Team and Stormwater Division	Ongoing	Number of training events and topics

MCM 6 Pollution Prevention/Good Housekeeping for Municipal Operations						
BMP	**BMP Description**	**Measurable Goals**	**Metric**	**Responsible Party**	**Timeline**	**Associated Documents**
6.4a	*Regional Training Program*	Distribute pollution prevention educational materials developed through the HRPDC/askHRgreen to James City County employees engaging in operations with a high risk of discharging pollutants into the MS4.	Number of items distributed	HRPDC and Phase II Localities	Ongoing	training materials
6.4b	*Regulated Certifications*	Ensure that employees hold the appropriate required State or federal regulated certifications	Pesticide applicators, Hazmat certifications, ESC certifications, Stormwater certifications	Pollution Prevention Team and Stormwater Division	Ongoing	Types of Certifications and Certficate Number
6.5	Evaluation and Assessment	Evaluate and assess progress towards meeting measurable goals.	In accordance with VAR040037, Section II E	Stormwater Division	Annually	Annual Report

BMP	BMP Description	Measurable Goals	Metric	Responsible Party	Timeline	Associated Documents
SC-1	TMDL WLA Implementation					
	Skiffes Creek (Warwick River) Bacterial TMDL (JL35)	Develop a TMDL Action Plan consistent with the waste load allocation contained in the TMDL completed in 2008 and approved by the State Water Control Board on April 28, 2009	Action Plan	Stormwater Division	PY3	TMDL Program Plan
	Mill Creek (JL33) and Powhatan Creek (JL31) Bacterial TMDL	Develop a TMDL Action Plan consistent with the waste load allocation contained in the TMDL completed in 2009 and approved by the State Water Control Board on July 27, 2009	Action Plan	Stormwater Division	PY3	TMDL Program Plan
SC-1a	Develop Chesapeake Bay TMDL Action Plan	Develop a TMDL Action Plan consistent with the Virginia Ph I and II WIPs to meet the Level 2 (L2) reductions of pollutants of concern (POC) in accordance with DEQ Guidance Memo # 14-2012	TMDL Action Plan	Stormwater Division	PY2	TMDL Action Plan
SC-2	Evaluation and Assessment	Evaluate and assess progress towards meeting measurable goals.	In accordance with VAR040037, Section II E	Stormwater Division	Annually	Annual report

Appendix A

Signed Certification Statement

CERTIFICATION STATEMENT AND SIGNATORY REQUIREMENTS FOR MS4 PERMIT APPLICATIONS AND REPORTS

As required by 9VAC25-870-370 B, all reports required by state permits, and other information requested by the board shall, be signed by a responsible official or by a duly authorized representative of that person. A responsible official is:

1. For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy-making or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided the manager is authorized to make management decisions that govern the operation of the regulated facility, including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for state permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;
2. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or
3. For a municipality, state, federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.

A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described above;
2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. A duly authorized representative may thus be either a named individual or any individual occupying a named position; and
3. The written authorization is submitted to the department.

CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Mr. Bryan Hill, County Administrator — Date: 9/23/14

VAR040037 — **James City County**

Permit Number — MS4 Name

Appendix B

Status of Compliance with Permit Conditions
MS4 Program Plan Spreadsheet with 2014 Updates

BMP	BMP Description	Measurable Goals	Metric	Responsible Party	Timeline	Associated Documents	FY14 Status
1.1	Participate in regional committees: askHRgreen.org, Regional Stormwater Management Committee (RSMC), and SW Phase II Subcommittee					askHRgreen.org Annual Report, MOA, HRPDC Regional Cooperation in Stormwater Management	Regional Cooperation in Stormwater Management, Fiscal Year 2013-2014, A Status Report is in Appendix E.
1.1a	*Regional Cooperation*	Renew MOA with the HRPDC to participate in the regional processes, including the Regional Stormwater Management Program, the Stormwater Phase II Subcommittee, and askHRgreen.org	Maintain valid MOA	HRPDC	Every 5 years.	Hampton Roads Regional Stormwater Management Program Memorandum of Agreement (MOA).	MOA executed on July 1, 2014 and expires June 30, 2018. See Appendix D for current copy
1.1b	*askHRgreen.org*	Participate in at least 50% of askHRgreen.org Stormwater Education Subcommittee meetings	Number of meetings attended/Number of meetings held	Stormwater Division	Annually	Attendance List	8 meetings attended / 12 meetings held See Appendix C-1
1.1c	*Stormwater Phase II Subcommittee*	Participate in at least 50% of monthly Stormwater Committee Meetings.	Number of meetings attended/Number of meetings held	Stormwater Division	Annually	Attendance List	10 meetings attended / 11 meetings held. See Appendix C-1
1.2	Educate citizens on techniques to reduce impacts of stormwater pollution on public waterways with an emphasis on impaired waters.						
1.2a	*James City County PRIDE (Protecting Resources in Delicate Environments) Program*	Distribute County-specific information to citizens and identified target audiences through an updated JCCPRIDE website	Number of target audiences included on site and improved visitation levels	Stormwater Division	PY2 and ongoing	Website content	Water Quality Reports, and JCCPride Grant Application information updated on website for PY1.
1.2b	*Distribute educational materials developed through askHRgreen.org*	Distribute materials developed through askHRgreen.org to target audience in locality.	Number of materials distributed	Stormwater Division	Ongoing	Education materials	2,959 items were distributed in the county. See outreach activities spreadsheet in Appendix C-1. Regional information can be found in the HRGreen annual report in Appendix C-1.
1.2c	*Maintain and enhance askHRgreen.org website*	Improve visits and click through rates to industry standard by end of permit cycle	Click through rates as compared to industry standard	HRPDC	Permit Cycle		askHRgreen.org annual report.
1.2d	*Run regional media campaigns*	Participate in the askHRgreen.org regional media campaign which will make impressions with a stormwater message via print, television (local municipal access, cable and local affiliate), radio, and social media	Demographic, reach and frequency	askHRgreen.org Stormwater Education Subcommittee	PY 1	Copies of ads	Details of the Hamton Roads media campaign for FY14 is located in the askHRGreen Annual Report in Appendix C-1.
1.2e	*Author Green Living Tab*	Contribute stormwater pollution prevention content for the askHRgreen.org Green Living Tab, which is distributed to readers in the spring by The Virginian Pilot and Daily Press and is available digitally	Number of guides distributed and online readers	askHRgreen.org	PY 1	Green Living Tab	In FY14, askHRgreen.org contributed editorial content to the Green Living Guide, a special insert published by *The Virginian-Pilot* on April 23, 2014. In addition to contributing articles, askHRgreen.org also purchased a full-page ad to run in the publication, which included information about fertilizer, scooping the poop, and garbage disposal use. The full-page ad ran simultaneously in the *Daily Press* .

BMP	BMP Description	Measurable Goals	Metric	Responsible Party	Timeline	Associated Documents	FY14 Status
1.2f	*Promote "Scoop the Poop" campaign*	Make "Scoop the Poop" information and giveaways available where citizens receive animal licenses and at pet-related events as appropriate	Number of giveaways distributed	Stormwater Division	PY 1	Rack cards, dog waste bag holders	Over 750 Scoop the Poop giveaways and fliers distributed. See Outreach Activities Spreadsheet in Appendix C-1.
1.2g	*Promote Lawn Care Campaign*	Run media campaigns and make lawn care best management practice guides available.	Demographic, reach and frequency	askHRgreen.org Stormwater Education Subcommittee	PY 1	Copies of ads	Copies of ads are available on the askHRgreen.org website. The statistics on the demographics, reach, and frequency are provided by campaign in the askHRgreen.org annual report.
	Turf Love Nutrient Management Planning for Homeowners and Community-owned lands	Provide soil testing and nutrient management plans directly to property owners in order to reduce the unnecessary use of fertilizers	Number of soil tests, number of nutrient management plans, number of property owner contacts	PRIDE Team and Master Gardeners (Virginia Cooperative Extension)	Annually	Educational materials and distribution list	188 soil tests, 224 nutrient management plans covering 114.58 acres. 768 citizen contacts. See spreadsheet in Appendix C-1.
1.3	Illicit Discharge Elimination Education						
1.3a	*Educate homeowners on hazards and legal implications of illegal discharges and improper disposal of waste.*	Promote askHRgreen.org for list of locality contacts for citizens to report illicit discharges and to learn about proper disposal methods.	Number of page visits	askHRgreen.org Stormwater Education Subcommittee	post new info in PY1	askHRgreen.org website	The askHRgreen.org website contains the contact information for stormwater program staff on its stormwater runoff page. 60 people visited this page in PY1.
1.4	Encourage involvement in James City County water quality improvement initiatives.						
		Post volunteer opportunities on James City County website.	Number and types of events	Stormwater Division	Annually	James City County website	Volunteer Citizen Monitoring for benthic organisms and bacteria were advertised on the askHRGreen.org, Virginia Master Naturalists, and the James City County Stormwater Division websites
		Submit articles for askHRgreen.org blog for public participation in water quality improvement initiatives.	Number and types of events submitted	Stormwater Division	As needed	askHRgreen.org website	4 articles submitted to askHRGreen.org blog. 2 are included in Appendix C-1
		Post volunteer opportunities on askHRgreen.org/calendar	Number and types of events submitted	HRPDC Environmental Educator	Annually	askHRgreen.org website	Volunteer Citizen Monitoring for benthic organisms and bacteria were advertised on the askHRGreen.org, Virginia Master Naturalists, and the James City County Stormwater Division websites See www.askHRGreen.org
1.5	Update public education outreach plan to meet requirements of permit effective on July 1, 2013	TBD	TBD	HRPDC/askHRgreen.org/ Stormwater Division	As prescribed in general permit	Updated Outreach plan	Public Education Outreach Plan is developed and the PRIDE program has been rebranded as Clean Water Heritage. See process in appendix C-1.
1.6	Evaluation and Assessment	Evaluate and assess progress towards meeting measurable goals.	In accordance with Section I E of 4VAC50-60-1200	Stormwater Division	Annually	Annual report	Compliance with this measurable goal is met through the submission of this annual report.

BMP	BMP Description	Measurable Goals	Metric	Responsible Party	Timeline	Associated Documents	FY14 Status
2.1	Provide Public Notice of Program Plan and Modifications	Promote the availability of the operator's MS4 Program Plan and any modifications for public review and comment in accordance with public law.	Public notice of modifications.	Stormwater Division	Annually and as necessary	Virginia Code reference, updated plan	Program Plan on County website - www.jamescitycountyva.gov/cleanwater
2.2	Make Program Plan and other Stormwater Program Information Available to Public	Provide the program plan, stormwater annual reports, the stormwater permit, and the stormwater ordinances on the County's website.	Public notice of modifications.	Stormwater Division	Ongoing	Program Plan, Annual Reports, Stormwater Permit and Ordinances	Items on the website are Registration Statement, Program Plan, Stormwater Annual Reports and Ordinances.
2.3	Participate in local activities to improve water quality						
2.3a	*JCCPRIDE Implementation Projects*	Conduct JCCPRIDE implementation projects that promote water quality improvement	Conduct at least one project annually	JCCPRIDE Team	Annually	Project documentation	Pride grants were awarded to 10 neighborhoods for BMP and drainage improvements. See Appendix C-2
2.3b	*Volunteer Water Quality Monitoring*	Provide equipment and training to citizens interested in monitoring the biological health of County water bodies	Monitor at least five sites	Stormwater Division	Two times per year per site	Monitoring Results	3 sites on county property - see spreadsheet in Appendix C-2 for locations
	Volunteer Water Quality Monitoring	Volunteer monitoring using coliscan screening of TMDL watersheds	Number of sites monitored	Stormwater Division	monthly	Monitoring Results	2 citizens monitoring 3 sites on Powhatan Creek
2.3c	*Stream Cleanup*	Actively promote and encourage citizen involvement in Clean the Bay Day or other organized stream cleanup effort	Promote at least one stream cleanup project	Stormwater and Environmental Divisions	Annually	Project documentation	The Clean County Commission organized 3 cleanups this year. 199 tons of trash and 396 volunteers participated. See appendix C-2
2.4	Stormwater Program Advisory Committee	Continue to secure citizen advice and recommendations through regularly scheduled public meetings of the Committee	Number of meetings	Stormwater Division	Quarterly	SPAC minutes and publications	6 regular meetings of the full committee, 1 meeting of the JCCPRIDE subcommittee, 9 Outreach Subcommittee meetings; see spreadsheet in Appendix C-2

2.5	Update public participation plan to meet requirements of permit effective on July 1, 2013	TBD	TBD	Stormwater Division	As prescribed in the general permit	Updated Participation plan	All BMPs listed in Table 1 of the Phase II General Permit have been added to the updated Program Plan for this permit cycle. See Public Particiaption SOPs in Appendix C-2
2.6	Evaluation and Assessment	Evaluate and assess progress towards meeting measurable goals.	In accordance with Section I E of 4VAC50-60-1200	Stormwater Division	Annually	Annual report	Compliance with this measurable goal is met through the submission of this annual report.

BMP	BMP Description	Measurable Goals	Metric	Responsible Party	Timeline	Associated Documents	FY14 Status
3.1	Storm Sewer System Map	Maintain and map all known outfalls	Number of outfalls catalogued and mapped	Stormwater Division	Map new outfalls within 180 days of project completion	Map	70 systems have been mapped - this is the entire amount operated by James City County
3.2	Illicit Discharge Detection & Elimination Ordinance	Continue implementing and enforcing the Illicit discharge/Stormwater Management Ordinance.	Number of investigations and actions taken	Stormwater Division	Ongoing	Stormwater Management Ordinance, Chapter 18A of County Code	1 investigation, proved to be in compliance. See detail in Appendix C-3
3.3	Illicit Discharge Detection & Elimination Procedures						
3.3a		Continue implementing an illicit discharge detection and elimination program for the municipally-owned MS4 within the Urbanized Area.	Protocol for responding and investigating IDDE	HRPDC and Phase II Localities	PY1	Investigation forms	New protocol developed PY1. See protocol in Appendix C-3.
3.3b		Track illicit discharge detection and elimination activities.	Number of investigations and actions taken	Stormwater Division	Ongoing	PARS	1 investigation, proved to be in compliance. See detail in Appendix C-3
3.3c		Perform dry weather screening of MS4 outfalls on an annual basis.	Number of outfall screened annually	Stormwater Division	perform a minimum of 15% annually	Inspection Reports	5 outfalls have been screened out of a total of 70 (total # of outfalls regardless of size) in PY1 (FY14). See spreadsheet in Appendix C-3.
3.4	Prevent or minimize the discharge of hazardous substances and oil in the MS4 stormwater discharge.	Yard inspections; Develop/enhance reporting relationship with Fire Department/Haz Mat Team; targeted education	Number of responses; number of inspections	Stormwater Division	Ongoing	Inspection forms	James City County Administrative Regulation 28, the Pollution Prevention Program, has been drafted and contains guidelines for County Staff and facilities in the MS4. See AR28 in Appendix C-3
3.5	Cooperation with adjacent MS4s	Identify and notify in writing, any downstream regulated MS4 to which James City County's regulated MS4 is physically interconnected of the small regulated MS4's connection to that system.	Develop map, Regional Phase II Stormwater Subcommittee Meetings, letters	Stormwater Division	PY1	Letters; meeting attendance	No changes in this permit year. Notification, if needed, will be undertaken after outfall mapping is completed in PY4.
3.6	Report all spills that reach state waters to the DEQ and DCR						
3.6a	*Report non-sewer spills and releases from small MS4 regulated properties that reach state waters to the Virginia EOC, who in turn reports to the DEQ.*	Report spills to Virginia EOC and file internal reports. Virginia EOC reports to Department of Environmental Quality's Pollution Response Program (PREP)	Number of internal reports. If applicable, obtain PREP Incidence Response number	Fire Department	Report in accordance to Section III. G.	Internal report	16 internal reports for gas and oil spills were filed by the fire department. See report summaries in C-3
3.6b	*Report Sanitary Sewer Overflows through SSORS database.*	Continue to utilize SSORS to report Sanitary Sewer Overflows	Number of overflows	James City Service Authority (JCSA)	As necessary		16 overflows reported to DEQ in FY14. Most caused by heavy rain. See detail in Appendix C-3.
3.7	Continue Sanitary Sewer System improvements in coordination with SSO consent order	Meet requirements of the Consent Order	Compliance accomplishments	JCSA	In accordance with Consent Order	As required by Consent Order	Completed all tasks required under the terms of the Consent Order to date - see memo in Appendix C-3.
3.8	Update IDDE plan to meet requirements of permit effective on July 1, 2013	TBD	TBD	Stormwater Division	As prescribed in the general permit	IDDE Program Plan	The IDDE program plan was updated in accordance with the General Permit requirements. See updated dry weather screening and IDDE procedures in Appendix C-3

BMP	BMP Description	Measurable Goals	Metric	Responsible Party	Timeline	Associated Documents	FY14 Status
3.9	Evaluation and Assessment	Evaluate and assess progress towards meeting measurable goals.	In accordance with Section I E of 4VAC50-60-1200	Stormwater Division	Annually	Annual report	Compliance with this measurable goal is met through the submission of this annual report.

BMP	BMP Description	Measurable Goals	Metric	Responsible Party	Timeline	Associated Documents	FY14 Status
4.1	James City County Erosion and Sediment Control Ordinance, Chapter 8 of the County Code	Continue to implement the site plan review, LID implementation where deemed appropriate, construction site BMP, and inspection provisions of the County's Erosion and Sediment Control Ordinance.	Number of inspections; number of plan reviews, number of enforcement actions	Engineering and Resource Protection Division	Annually	PARS	Number of inspections - 3357; number of plan reviews - 552; plans (development =191, single family = 361); number of enforcement actions - 207: 26 on development projects, 181 on single family projects. See spreadsheet in Appendix C-4
		"At a minimum be consistent with the Virginia Erosion Control Law and Regulations"	Soil and Water Conservation Board finding of consistency	Engineering and Resource Protection Division	Ongoing	Consistency Letter from DCR	Most recent DCR letter dated 4/4/2012 found E&S program consistent with State laws and regulations. See letter in Appendix C-4.
		Continue to receive and respond to information from citizens relating to the County's erosion and sediment control program through personal visits, email, telephone, and the County's web page.	Number of calls/requests, number of site visits	Engineering and Resource Protection Division	Annually	PARS	Number of calls/requests - 61 number of site visits - 61 and eleven (11) reports of unauthorized activities (RUA's) investigated under E&SC and CBP ordinances.
4.2	VSMP Permits	Require construction site owners and operators to secure authorization to discharge stormwater from construction activities under a VSMP permit for construction activities that result in a land disturbance of greater than or equal to 2500 square feet in all areas of the County as the entire County is designated as a Chesapeake Bay Preservation Area.	Number of permit applications and permits issued.	Engineering and Resource Protection Division	Ongoing	Copies of permits and registration statements	Evidence of 60 registrations for coverage under the VSMP/VPDES construction general permit program provided for the 63 local land disturbing permits issued. For the three cases that did not provide evidence of registration for coverage, registration was not required by the Virginia DEQ
4.3	Training	Participate in the development of at least one regional contractor training session during the life of the permit.	Trainings Completed	HRPDC & Phase II SW Committee	One per permit cycle	Training sessions and evaluation forms	No regional training was required/provided in FY2014. The committee has developed training priorities for the remainder of the permit cycle.

BMP	BMP Description	Measurable Goals	Metric	Responsible Party	Timeline	Associated Documents	FY14 Status
		Ensure that plan reviewers, inspectors, and program administrators obtain the appropriate certifications as required under the Erosion and Sediment Control Law	Certifications obtained	Engineering and Resource Protection Division	Ongoing	Copies of certificates	Seven (7) VESCP - E&SC certification renewals (three inspector, two plan review and two combined administrator). Total of eleven (11) active certifications under the VESCP (one program administrator, four inspector, four plan review, and two combined administrator)
4.4	Tracking and Reporting	Continue to track and report the total number of permitted land disturbing activities as well as the total disturbed acreage.	Number of permits and acres disturbed	Engineering and Resource Protection Division	Annually	PARS	63 permits representing 218.55 acres of disturbance- see appendix C-4 for detail
4.5	Update Construction plan to meet requirements of permit effective on July 1, 2013	TBD	TBD	Engineering and Resource Protection Division	As prescribed in the general permit	Updated Program Plan	The Construction program plan was updated in accordance with the General Permit requirements. For supporting program materials, see Appendix C-4
4.6	Evaluation and Assessment	Evaluate and assess progress towards meeting measurable goals.	In accordance with Section I E of 4VAC50-60-1200	Engineering and Resource Protection Division	Annually	Annual report	Compliance with this measurable goal is met through the submission of this annual report.

BMP	BMP Description	Measurable Goals	Metric	Responsible Party	Timeline	Associated Documents	FY14 Status
5.1	Stormwater Management Ordinances	Continue to implement the stormwater criteria of the Chesapeake Bay Preservation, and Erosion and Sediment Control Ordinances for new development and redevelopment, and update ordinances to comply with Section II.5.a of the General Permit.	Ordinance updates	Engineering and Resource Protection Division	Ongoing implementation, ordinance updates as needed	Chesapeake Bay Preservation - Chapter 23, and Erosion and Sediment Control - Chapter 8 of the County Code	Virginia Stormwater Management Program Ordinance approved in James City County by the Board of Supervisors May 13, 2014
5.2	VSMP Permits	Require construction site owners and operators to secure authorization to discharge stormwater from construction activities under a VSMP permit for construction activities that result in a land disturbance of greater than or equal to 2500 square feet in all areas of the County as the entire County is designated as a Chesapeake Bay Preservation Area.	Number of permit registration statements and permits obtained.	Engineering and Resource Protection Division	Ongoing	Copies of permits and registration statements	Evidence of 60 registrations for coverage under the VSMP/VPDES construction general permit program provided for the 63 local land disturbing permits issued. For the three cases that did not provide evidence of registration for coverage, registration was not required by the Virginia DEQ
5.3	BMP Maintenance Agreements	Require BMP maintenance agreements as required by the Chesapeake Bay Preservation Ordinance.	Number of agreements and inspection schedules	Engineering and Resource Protection Division	Ongoing	Maintenance Agreements and schedules	29 Agreements executed during PY4. See Appendix C-5 for detail.
5.4	BMP Maintenance Program	Update mapping of all public and privately owned structural stormwater controls with reference to HUC and any impaired waters in drainage area.	Map	Stormwater Division	As needed	Map	GIS-based map updated to include all new BMP facilities added in PY1
		Develop schedules for regular inspection and maintenance of County maintained stormwater control structures in accordance with state Stormwater regulations.	Number of inspections	Stormwater Division	Annually	BMP O&M Manual	Number of inspections -85 which is the total number of County-owned/maintained facilities
5.5	Site Inspection and Enforcement	Conduct site inspections	Number of Inspections & Reinspections; enforcement actions	Stormwater Division	Ongoing	Stormwater Database	180 SWMF inspections , notices of non-compliance issued to owners of BMPs needing immediate repair. See letter in Appendix C-5
5.6	BMP Tracking	Track all known permanent stormwater management facilities that discharge to the regulated small MS4 and submit the following information: (a) Type of structural stormwater management facility installed as defined in the Virginia Stormwater Management Handbook; (b) Geographic location (HUC); (c) Where applicable, the impaired surface water that the stormwater management facility is discharging into; (d) Number of acres treated.	Number and type of BMP, location, watershed, acres treated, impaired waters	Stormwater Division	Ongoing	Stormwater Database	24 BMPs added in PY4. See spreadsheet with detailed information on BMPs added in Appendix C-5

BMP	BMP Description	Measurable Goals	Metric	Responsible Party	Timeline	Associated Documents	FY14 Status
5.7	Update Post Development plan to meet requirements of permit effective on July 1, 2013	TBD	TBD	Stormwater Division	As prescribed in the general permit	Updated Post Development Program Plan	The Post- Development program plan was updated in accordance with the General Permit requirements.For Individual Lot Special Criteria and Operator-Owned Stormwater Management Inspection Procedures summaries, as per Table 1 of the permit, See Appendix C-5
5.8	Evaluation and Assessment	Evaluate and assess progress towards meeting measurable goals.	In accordance with Section I E of 4VAC50-60-1200	Stormwater Division	Annually	Annual report	Compliance with this measurable goal is met through the submission of this annual report.

BMP	BMP Description	Measurable Goals	Metric	Responsible Party	Timeline	Associated Documents	FY14 Status
6.1	Employee Education & Training	Identify and prioritize pollution prevention education and training needs for James City County employees based on relative risk for stormwater pollution from municipal operations through the HRPDC Phase II Subcommittee.	Training Schedule	HRPDC and Stormwater Division	PY1	Training schedule	Employee Training Program developed in PY1. See James City County Training schedule and Program, and HRPDC Regional Training Plan in Appendix C-6
		Distribute pollution prevention educational materials developed through the HRPDC/askHRgreen to James City County employees engaging in operations with a high risk of discharging pollutants into the MS4.	Number of items distributed	HRPDC and Stormwater Division	PY1	E-newsletter, training materials	Training on pollution prevention for General Services employees was held three times in PY1. Used "Rain Check" program developed by Excal Visual LLP, and other presentations. See summary in Appendix C-6
6.2	Spill Prevention & Control Plans	Continue to implement and update plans describing spill prevention and control procedures for municipal facilities developed during past permit cycle.	Standard Operating Procedure (SOP) Implementation	Stormwater Division	Ongoing	SOP	See SOPs in Appendix C-6
		Spill Prevention Control and Countermeasure Compliance Plan (SPCCC) implemented and kept current for the JCSA Water Desalination Plant	Plan implementation	James City Service Authority	Ongoing	SPCCC Plan and associated documents	JCSA implemented SPCCC during PY2 (FY10)
		Determine any educational needs for employees and develop appropriate training and/or materials.	Training assessment	Stormwater Phase II Subcommittee	Once per permit cycle	Training Schedule	See Training Priorities in Appendix C-6
6.3	Operations & Maintenance Program	Continue to implement Operation & Maintenance (O&M) Plan for County-maintained stormwater facilities to include activities, schedules, and inspection procedures that include provisions and controls to reduce pollutant discharges into the regulated small MS4 and receiving surface waters.	O&M Plan	Stormwater Division	Ongoing	Stormwater Database, BMP O&M Manual	SWMF O&M Plan involves annual inspection, and annual maintenance of vegetation and debris removal
		Continue to implement Nutrient Management Plans on all irrigated managed turf areas owned by the county and the WJCC Public School system.	Number of plans and acreage of managed turf included in plans	Stormwater Division	Ongoing	Nutrient Management Plan Implementation Data	No new plans written in FY14. Total number of plans remains 12 covering 62.895 acres. See Turf Love Summary in Appendix C-6
		Continue to implement O&M Plan for General Services facilities to include activities, schedules, and inspection procedures that include provisions and controls to reduce pollutant discharges into the regulated small MS4 and receiving surface waters.	O&M Plan	Stormwater Division/ General Services	Ongoing	O&M Plan	Standard Operating Procedures Developed. SOP in Appendix C-6

BMP	BMP Description	Measurable Goals	Metric	Responsible Party	Timeline	Associated Documents	FY14 Status
		Continue to implement O&M Plan for Parks and Recreation facilities to include activities, schedules, and inspection procedures that include provisions and controls to reduce pollutant discharges into the regulated small MS4 and receiving surface waters.	O&M Plan	Stormwater Division/ Parks and Recreation	Ongoing	O&M Plan	Standard Operating Procedures Developed. SOP in Appendix C-6
6.4	Update Municipal Facilities plan to meet requirements of permit effective on July 1, 2013	TBD	TBD	Stormwater Division	As prescribed in the general permit	Municipal Facilities Program Plan	The Municipal Facility program plan was updated in accordance with the General Permit requirements. For Identification of Locations Requiring SWPPs, Nutrient Management Plan Locations, and Training schedule and Program, as per Table 1 of the permit, see Appendix C-6
6.5	Evaluation and Assessment	Evaluate and assess progress towards meeting measurable goals.	In accordance with Section I E of 4VAC50-60-1200	Stormwater Division	Annually	Annual Report	Compliance with this measurable goal is met through the submission of this annual report. Also, see memo in Appendix C-6.

BMP	BMP Description	Measurable Goals	Metric	Responsible Party	Timeline	Associated Documents	FY14 Status
SC-1	TMDL WLA Implementation						
	Skiffes Creek (Warwick River) Bacterial TMDL (JL35)	Update program plan as prescribed in proposed permit effective July 1, 2013.	TBD	Stormwater Division	As prescribed in the general permit	TMDL Program Plan	No updates this permit year.
	Mill Creek (JL33) and Powhatan Creek (JL31) Bacterial TMDL	Update program plan as prescribed in proposed permit effective July 1, 2013.	TBD	Stormwater Division	As prescribed in the general permit	TMDL Program Plan	No updates this permit year.
SC-1a	Chesapeake Bay TMDL Action Plan	Update program plan as prescribed in proposed permit effective July 1, 2013.	TBD	Stormwater Division	As prescribed in the general permit	TMDL Program Plan	No updates this permit year.
SC-2	Evaluation and Assessment	Evaluate and assess progress towards meeting measurable goals.	In accordance with Section I E of 4VAC50-60-1200	Stormwater Division	Annually	Annual report	No updates this permit year.

Appendix C-1

Exhibits for Minimum Control Measure #1 – Public Outreach and Education

	13-Jul	13-Aug	13-Sep	13-Oct	13-Nov	13-Dec	14-Jan	14-Feb	14-Mar	14-Apr	14-May	14-Jun
Chesapeake		Elizabeth Vaughn		Elizabeth Vaughn		Elizabeth Vaughn		Elizabeth Vaughn				
Gloucester					Ron Owens							
Hampton	Cris Ausink	Cris Ausink	Cris Ausink		Cris Ausink		Cris Ausink	Cris Ausink		Cris Ausink	Cris Ausink	Cris Ausink
Isle of Wight	Melissa Lindgren	Kim Hummel	Melissa Lindgren		Kim Hummel	Melissa Lindgren, Kim	Melissa Lindgren, Brian Bass	Melissa Lindgren, Kim	Kim Hummel, Brian Bass	Melissa Lindgren, Kim	Kim Hummel, Brian Bass	Brian Bass
James City County	Suzanne Dyba		Suzanne Dyba		Paul Cuomo	Suzanne Dyba	Paul Cuomo		Suzanne Dyba	Paul Cuomo	Paul Cuomo	
Newport News	David Kuzma	LeeAnn Hartmann, Allison Watts	Dave Kuzma, Allison Watts, Joseph DuRant	LeeAnn Hartmann	Allison Watts	Allison Watts	Allison Watts	Allison Watts	Allison Watts	Allison Watts	Allison Watts	LeeAnn Hartmann, Allison Watts
Norfolk		Fleta Jackson, Gina Shaw	Fleta Jackson, Diana Cheatham	Fleta Jackson, Diana Cheatham, Gina Shaw		Fleta Jackson, Diana Cheatham	Fleta Jackson, Diana Cheatham	Fleta Jackson, Diana Cheatham		Diana Cheatham		Fleta Jackson
Poquoson			Sherry Coffey	Sherry Coffey						Sherry Coffey	Sherry Coffey	Sherry Coffey
Portsmouth	Kelsey Crist		Kelsey Crist	Kelsey Crist	Kelsey Crist	Kelsey Crist	Kelsey Crist	Kelsey Crist	Kelsey Crist	Kelsey Crist		
Smithfield	Wayne Griffin	Wayne Griffin		Wayne Griffin		Wayne Griffin		Wayne Griffin		Wayne Griffin		
Suffolk	Ed Heide	Erin Rountree, David Keeling	David Keeling	Ed Heide	David Keeling	David Keeling	Erin Rountree	David Keeling	David Keeling	David Keeling	David Keeling	Tory Rowland
Virginia Beach		Bill Johnston		Bill Johnston	Bill Johnston	Bill Johnston	Bill Johnston	Bill Johnston		Bill Johnston		Bill Johnston
Williamsburg				Tammy Rojek	Tammy Rojek		Tammy Rojek	Aaron Small	Aaron Small	Tammy Rojek	Tammy Rojek	
York	Amy Green	Ivan Shelton, Leah Aguilar	Ivan Shelton		Ivan Shelton	Ivan Shelton			Ivan Shelton	Ivan Shelton	Ivan Shelton	Ivan Shelton

For MS4 Program Plan Item 1.1C *HRPDC Regional and Phase II Meeting Attendance* *James City County FY14*

	Regional SW Workgroup & Phase II	Regional SW Workgroup	Regional SW Workgroup	Regional SW Workgroup & Phase II	Regional SW Workgroup	Regional SW Workgroup	Regional SW Workgroup & Phase II	Regional SW Workgroup	Regional SW Workgroup & Phase II	Regional SW Workgroup	Phase II		
Meeting Dates	8/21/2013	9/18/2013	*10/3/2013	10/16/2013	11/20/2013	12/18/2013	2/19/2014	3/19/2014	4/16/2014	5/21/2014	*6/19/2014	# Meetings	% Attended
Phase II Localities:	1	1	1	1	1	1	1	1	1	1	1	11	100%
Isle of Wight County	1	-	1	1	1	1	1	-	1	1	1	9	82%
James City County	1	1	-	1	1	1	1	1	1	1	1	10	91%
Poquoson	-	1	-	1	1	-	1	1	1	1	1	8	73%
Suffolk	1	1	1	1	1	1	1	1	1	1	1	11	100%
Williamsburg	1	-	1	1	1	1	1	1	1	1	1	10	91%
York Co.	1	1	-	1	1	1	1	1	1	1	1	10	91%

*10/3/2013 and 6/19/2014 meetings were scheduled in addition to the regular monthly meeting.

2013 College Creek Watershed

Water Quality Report

James City County
VIRGINIA
Jamestown 1607
Stormwater

jamescitycountyva.gov/jccpride

James City County Water Quality Strategies

As part of a long term commitment to environmental stewardship, James City County volunteers and staff have been gathering information about stream health throughout the County since 2008. The goal of collecting water quality information is to be able to identify emerging water quality problems, target areas for restoration and preservation, document improvements from citizen and County actions and provide educational and volunteer opportunities for the public.

Volunteers and staff collect two types of data: one looks at the types of small creatures that live in streams and the other provides an indication of the amount of harmful bacteria present in a stream. Together, this information provides evidence of the overall health of the County's waterways.

The following information is a summary of known water quality conditions in the County, gleaned from data collected by the Virginia Department of Environmental Quality, from the County's volunteer water monitoring program and from completed James City County watershed management plans. As more information becomes available, this report will be updated.

College Creek Watershed

College Creek watershed runs from James City County, through the City of Williamsburg and the College of William and Mary before it reaches James City County again and then the James River. It drains Lake Matoaka on the college campus. The various land uses within the James City County lower drainage area include residences and neighborhoods, the airport, the Williamsburg Winery, golf courses, and the County government complex.

Water Quality Conditions

College Creek is on the VA Department of Environmental Quality (VADEQ) impaired waters list for: enterococcus bacteria, dissolved oxygen, and polychlorinated biphenyls (PCB)s. Pollutants like these could make people or aquatic organisms who live in the stream sick. There are swimming and fishing advisories in effect for College Creek at this time. In 2006, VADEQ listed College Creek as impaired for recreation use based on the high bacteria counts at their monitoring station. Overall water quality conditions are being monitored at 23 stations by the College Creek Alliance, and administered by the Keck Environmental Lab at the College of William and Mary. Their monitoring results are consistent with VADEQ, intermittently showing high levels of bacteria with no identifiable hotspots at this time. Although low, overall dissolved oxygen appears to be within standards most of the time, with areas of concern occasionally giving unacceptable results.

James City County biomonitoring efforts began in 2011 in the College Creek watershed. The 2012 samplings from the headwater site east of Ironbound Road in the Ironbound Village Neighborhood have provided results that are considered to be marginally acceptable for water quality standards. Further monitoring in the more downstream neighborhood of Kingsmill has produced results that indicate a stressed stream environment. Continued sampling should allow us to see water quality trends here in the future.

Problems in the Watershed

- Bacteria levels in College Creek are too high for contact recreation.
- Within the James City County portion of the watershed, many aging neighborhoods have poor drainage and non-existent or failing stormwater infrastructure, resulting in ponding water in streets and yards.

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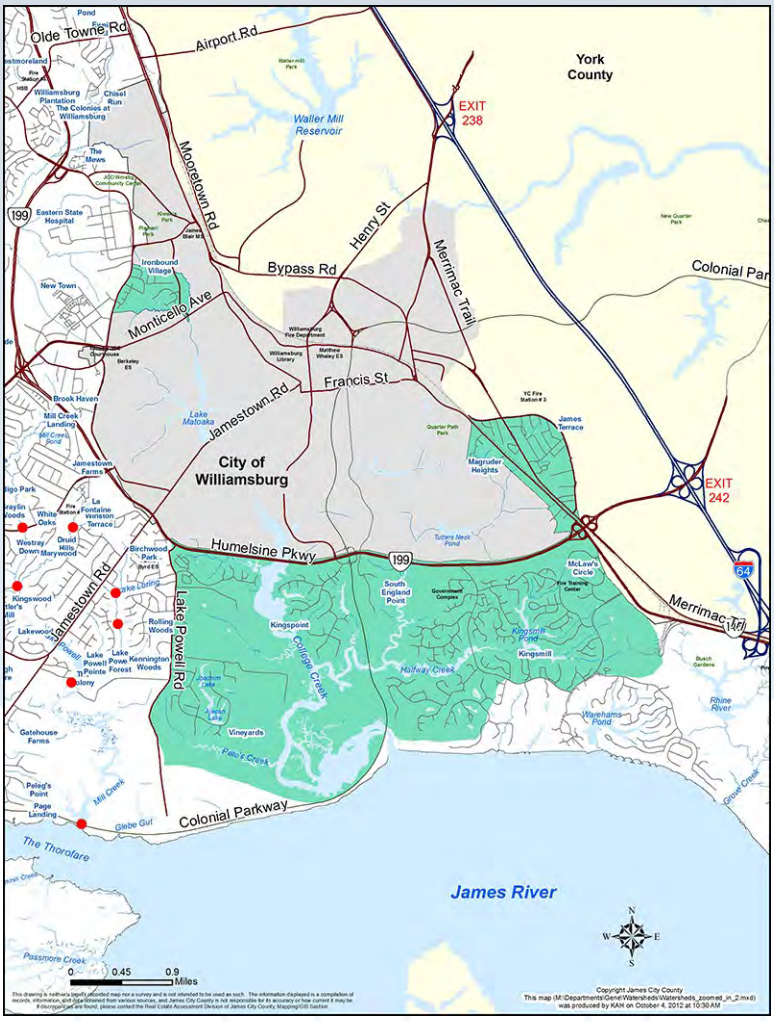
Completed Studies and Plans

- James Terrace Drainage Study (WEG, 2008)

What Can Citizens Do?

- Clean up after your pet. Pet waste contains bacteria and viruses that are harmful to people and the environment.
- Fertilize properly. Learn about your soil and the type of grass in your yard to make a responsible fertilizing plan. Contact Turf Love at 757-564-2170 for help in identifying your yard needs.
- Leave a natural plant buffer around streams or stormwater ponds. Vegetation filters pollutants before they get to the water.
- Don't put fats and oils down the drain. Fatty deposits build up in the sewer system and can lead to sanitary sewer overflows, leaving harmful bacteria and viruses in the environment.
- Wash your car on the grass, not on pavement. Soap and grease will be filtered through the grass and soil before getting into groundwater.
- Plant a rain garden. These beautiful landscaped areas can act as a trap for rain water and can prevent erosion in areas where there is a lot of stormwater run-off.
- Power-wash with care. Look for cleaning products with environmentally friendly ingredients.
- Don't put leaves and yard clippings in road ditches or on top of storm-drain inlets. Collect leaves and clippings for compost or drop off them off at a County transfer station.
- Go to askhrgreen.org for more helpful ideas.

College Creek Watershed Map



For More Information

If you are interested in more information, go to jamescitycountyva.gov/jccpride or call 757-259-1446.

James City County continues to be proactive in the protection and preservation of natural resources in its commitment to create and sustain a quality community. Remember...caring for our natural resources requires a team effort. Together, we can make sure that water quality in College Creek Watershed is protected for generations to come.

2013

Diascund Creek Watershed

Water Quality Report

James City County
VIRGINIA
Jamestown 1607
Stormwater

jamescitycountyva.gov/jccpride

James City County Water Quality Strategies

As part of a long term commitment to environmental stewardship, James City County volunteers and staff have been gathering information about stream health throughout the County since 2008. The goal of collecting water quality information is to be able to identify emerging water quality problems, target areas for restoration and preservation, document improvements from citizen and County actions and provide educational and volunteer opportunities for the public.

Volunteers and staff collect two types of data: one looks at the types of small creatures that live in streams and the other provides an indication of the amount of harmful bacteria present in a stream. Together, this information provides evidence of the overall health of the County's waterways.

The following information is a summary of known water quality conditions in the County, gleaned from data collected by the Virginia Department of Environmental Quality, from the County's volunteer water monitoring program and from completed James City County watershed management plans. As more information becomes available, this report will be updated.

Diascund Creek Watershed

The Diascund Creek watershed is in the northwestern part of the County and borders the Diascund Creek reservoir, which is a drinking water source for the City of Newport News. Diascund Creek drains into the Chickahominy River before reaching the James River. The watershed is very lightly developed, and is mostly rural residential, with forested upland and pastureland.

Water Quality Conditions

The VA Department of Environmental Quality (VADEQ) has Diascund Creek reservoir listed as polluted for Mercury, and it is listed as impaired for fishing due to mercury toxicity in the tissues of Bass and Bowfin. The tidal portion of Diascund Creek is impaired for enterococcus bacteria,

which indicates that people could get sick if they swim in the creek and are advised not to do so.

VADEQ has been performing bacteria monitoring in Diascund Creek, and in 2010 when the bacteria levels began to exceed state standards, Diascund Creek was put on Virginia's impaired waters list. Through the Stormwater Division's Water Quality Monitoring Program, and the efforts of County staff and citizen volunteers, the results show that overall Diascund Creek water quality turns out to be marginally acceptable to acceptable in terms of Virginia state water quality standards.

What Can Citizens Do?

- Clean up after your pet. Pet waste contains bacteria and viruses that are harmful to people and the environment.
- Fertilize properly. Learn about your soil and the type of grass in your yard to make a responsible fertilizing plan. Contact Turf Love at 757-564-2170 for help in identifying your yard needs.
- Leave a natural plant buffer around streams or stormwater ponds. Vegetation filters pollutants before they get to the water.
- Don't put fats and oils down the drain. Fatty deposits build up in the sewer system and can lead to sanitary sewer overflows, leaving harmful bacteria and viruses in the environment.
- Wash your car on the grass, not on pavement. Soap and grease will be filtered through the grass and soil before getting into groundwater.
- Plant a rain garden. These beautiful landscaped areas can act as a trap for rain water and can prevent erosion in areas where there is a lot of stormwater run-off.
- Power-wash with care. Look for cleaning products with environmentally friendly ingredients.
- Don't put leaves and yard clippings in road ditches or on top of storm-drain inlets. Collect leaves and clippings for compost or drop off them off at a County transfer station.
- Go to askhrgreen.org for more helpful ideas.

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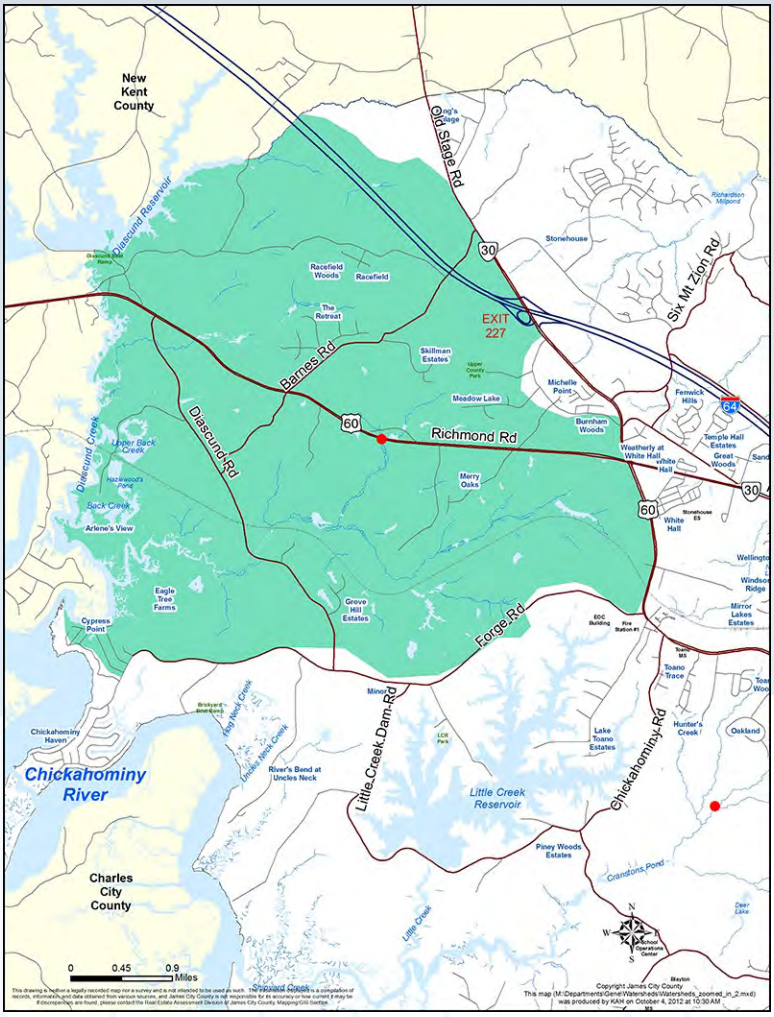
Diascund Creek Watershed Map



For More Information

If you are interested in more information, go to jamescitycountyva.gov/jccpride or call 757-259-1446.

James City County continues to be proactive in the protection and preservation of natural resources in its commitment to create and sustain a quality community. Remember...caring for our natural resources requires a team effort. Together, we can make sure water quality in Diascund Creek Watershed is protected for generations to come.

2013

Gordon Creek Watershed

Water Quality Report

James City County
VIRGINIA
Jamestown 1607
Stormwater

jamescitycountyva.gov/jccpride

James City County Water Quality Strategies

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Volunteers and staff collect two types of data: one looks at the types of small creatures that live in streams and the other provides an indication of the amount of harmful bacteria present in a stream. Together, this information provides evidence of the overall health of the County's waterways.

The following information is a summary of known water quality conditions in the County, gleaned from data collected by the Virginia Department of Environmental Quality, from the County's volunteer water monitoring program and from completed James City County watershed management plans. As more information becomes available, this report will be updated.

Gordon Creek Watershed

The Gordon Creek watershed in James City County is considered a rural forested and small tidal watershed, with 41% of the land in a Resource Protection Area, and 17% of the watershed publicly owned. Current habitat assessments of most of Gordon Creek have been rated as "excellent" in terms of how well it should sustain life. Although this watershed is 86% forested, it has seen some development in the last few years, including two elementary schools and one middle school, and the creation of Freedom Park and Interpretive Center. Chickahominy Riverfront Park is situated on the mouth of Gordon Creek and provides kayaks and boat launches for recreation opportunities.

Water Quality Conditions

The VA Department of Environmental Quality (VADEQ) has Gordon Creek listed as polluted for enterococcus bacteria, which indicates that people may get sick if they ingest water from it, and there are swimming advisories in effect for the Creek. VADEQ has been monitoring Gordon Creek, and in 2012 when the bacteria levels began to exceed state standards, Gordon Creek was put on Virginia's impaired waters list. Through the Stormwater Division's Water Quality Monitoring Program, and the efforts of County staff and citizen volunteers, monitoring results show that overall Gordon Creek water quality ranges from unacceptable to acceptable. The last monitoring performed in the watershed indicated a marginally acceptable level, but monitoring has been hampered by beaver activity in the area, changing flowing streams into ponds. Further sampling should indicate the direction the trend is taking.

Problems in the Watershed

Bacterial pollution is inhibiting recreation activities in Gordon Creek.

Completed Studies and Plans

- Gordon Creek Watershed Management Plan (VHB 2011)
- The Gordon Creek Baseline Assessment and Conservation Area Report (CWP 2008)
- Jolly Pond Dam Alternatives Analysis (Timmons Group 2008)

What Can Citizens Do?

- Clean up after your pet. Pet waste contains bacteria and viruses that are harmful to people and the environment.
- Fertilize properly. Learn about your soil and the type of grass in your yard to make a responsible fertilizing plan. Contact Turf Love at 757-564-2170 for help in identifying your yard needs.
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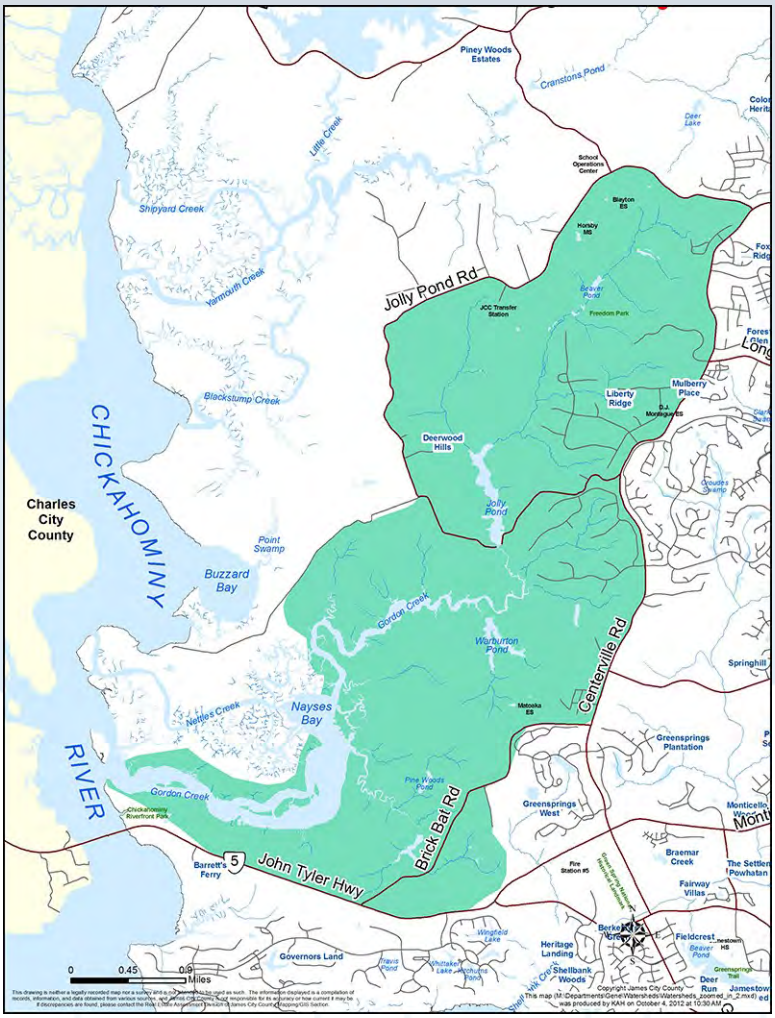
Gordon Creek Watershed Map



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James City County continues to be proactive in the protection and preservation of natural resources in its commitment to create and sustain a quality community. Remember...caring for our natural resources requires a team effort. Together, we can make sure water quality in Gordon Creek Watershed is protected for generations to come.

2013

Mill Creek Watershed

Water Quality Report

James City County
VIRGINIA
Jamestown 1607
Stormwater

jamescitycountyva.gov/jccpride

James City County Water Quality Strategies

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The following information is a summary of known water quality conditions in the County, gleaned from data collected by the Virginia Department of Environmental Quality, from the County's volunteer water monitoring program and from completed James City County watershed management plans. As more information becomes available, this report will be updated.

Mill Creek Watershed

The Mill Creek watershed drains a small portion of James City County, yet it is the most developed of all County watersheds. It covers areas of shopping centers, strip malls, scattered office buildings, and residential developments—many of these with aging or undersized drainage systems. Most of the residences and all of the commercial space lie in the upper portion of the watershed, so development is highly focused in headwater streams. This is important because the health of the headwater streams determines the health of the entire watershed. The lower portion of the watershed is a part of the James River floodplain and includes Lake Powell and portions of the Colonial Parkway.

Water Quality Conditions

The Virginia Department of Environmental Quality (VADEQ) has Mill Creek listed as polluted for: enterococcus bacteria, e. Coli bacteria, fecal coliform bacteria, dissolved oxygen, and Polychlorinated Biphenyls (PCBs). Mill Creek's impairments for dissolved oxygen show that it's not able to sustain the aquatic life that should be found in it. The bacteria pollution and PCB impairments mean it might make people sick if they ingest water from it, or eat too much fish from it. In fact, VADEQ advises against shellfish harvesting, swimming, and fishing in Mill Creek.

In 1992, VADEQ began monitoring one station in Mill Creek, and when the bacteria levels began to exceed state standards in 2006, Mill Creek was put on Virginia's impaired waters list. In 2009, James City County began monitoring five locations for bacteria throughout the watershed. In 2010 James City County and the Commonwealth of Virginia developed a plan to minimize the bacterial loadings in the watershed. Through the Stormwater Division's Water Quality Monitoring Program, and the efforts of County staff and citizen volunteers, the benthic monitoring results indicate that overall Mill Creek water quality is considered stressed, and gets poor scores in assessments. There are currently four sites in the Mill Creek watershed being monitored every Spring and Fall.

Problems in the Watershed

- Headwater streams throughout the watershed show signs of deterioration due to increased stormwater runoff from development. Sediment from the eroding streams is causing problems for downstream properties throughout the watershed by clogging available drainage areas and altering stream flow channels. Stream bank erosion occurs from upstream urbanization.
- Assessments of Mill Creek neighborhoods determined that about half the lawns are high-maintenance, which can add excess pollutants into the waterways.

Completed Studies and Plans

- Mill Creek Watershed Management Plan (2011)
- Implementation Plan for the Fecal Coliform TMDL for the Mill Creek and Powhatan Creek (HRPDC, 2011)
- Bacteria Total Maximum Daily Load for Mill Creek and Powhatan Creek (VADEQ, 2008)
- Brook Haven Subdivision Drainage Study (2009)
- The Meadows Subdivision Stream Stabilization Concept Plan (2009)
- Gate House Farms Subdivision, Smokehouse Lane Drainage Study (1995)
- Mill Creek/Lake Powell Drainage Study (1988)

What Can Citizens Do?

- Clean up after your pet. Pet waste contains bacteria and viruses that are harmful to people and the environment.
- Fertilize properly. Learn about your soil and the type of grass in your yard to make a responsible fertilizing plan. Contact Turf Love at 757-564-2170 for help in identifying your yard needs.
- Leave a natural plant buffer around streams or stormwater ponds. Vegetation filters pollutants before they get to the water.
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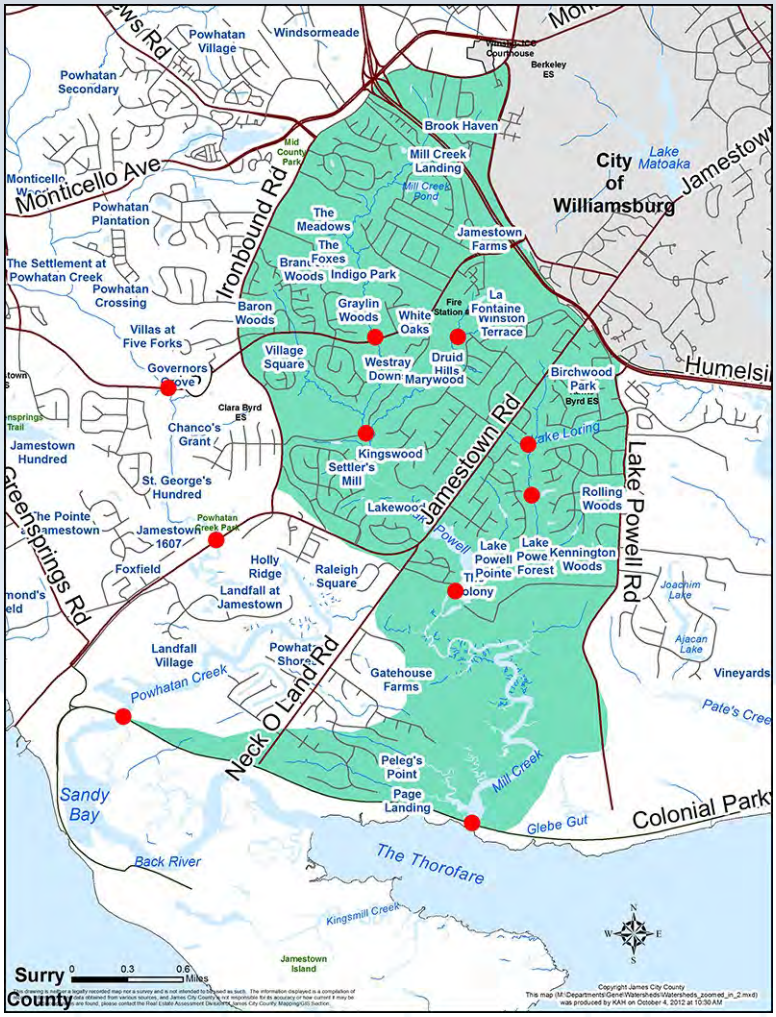
Mill Creek Watershed Map



For More Information

If you are interested in more information, go to jamescitycountyva.gov/jccpride or call 757-259-1446.

James City County continues to be proactive in the protection and preservation of natural resources in its commitment to create and sustain a quality community. Remember...caring for our natural resources requires a team effort. Together, we can make sure water quality in Mill Creek Watershed is protected for generations to come.

2013

Powhatan Creek Watershed

Water Quality Report

James City County Water Quality Strategies

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Volunteers and staff collect two types of data: one looks at the types of small creatures that live in streams and the other provides an indication of the amount of harmful bacteria present in a stream. Together, this information provides evidence of the overall health of the County's waterways.

The following information is a summary of known water quality conditions in the County, gleaned from data collected by the Virginia Department of Environmental Quality, from the County's volunteer water monitoring program and from completed James City County watershed management plans. As more information becomes available, this report will be updated.

Powhatan Creek Watershed

The Powhatan Creek watershed is the largest watershed in James City County. Significant growth has occurred in this watershed over the past several years, including New Town, Warhill, the Prime Outlet expansion and new residential neighborhoods. The lower Powhatan floodplain area has increased due to upstream development and road crossings. So far, Powhatan Creek is the only County watershed with a non-tidal Federal Emergency Management Agency (FEMA) 100 year floodplain study due to the flooding conditions in the lower watershed.

Water Quality Conditions

The Virginia Department of Environmental Quality (VADEQ) has Powhatan Creek on its impaired waters list for: enterococcus bacteria, benthic macroinvertebrates, estuarine assessments and polychlorinated biphenyls (PCBs). There are swimming and fishing advisories in effect for Powhatan Creek because people might get sick due to the levels of bacteria and toxins like PCBs.
The impairments for benthic macroinvertebrates and estuarine assessments reflect that the water is not able to sustain the aquatic life that should be found in it.

In 2006, VADEQ listed Powhatan Creek as impaired for bacteria on its list of impaired waters due to the high bacteria counts at their two monitoring stations. James City County has been conducting bacteria sampling at seven locations since 2009, and is consistent with VADEQ, showing no identifiable hotspots at this time.
In 2010, James City County and the Commonwealth of Virginia developed a plan to minimize the bacterial loadings which have consistently shown high numbers. Through the Stormwater Division's Water Quality Monitoring Program, and the efforts of County staff and citizen volunteers, overall results from the nine monitoring locations in Powhatan Creek watershed show that Powhatan Creek receives unacceptable water quality scores most of the time. However, those monitoring locations that drain smaller, less-developed areas in Powhatan Creek produce acceptable results and meet Virginia's water quality standards.

Problems in the Watershed

- Storms have caused major flooding of garages, and outbuildings, and at the culvert crossing downstream of Route 5. Increasing the floodplain from upstream urbanization has reduced drainage areas.
- Bacteria levels are too high for swimming or food consumption.
- The tidal portion of Powhatan Creek has shown significant levels of PCBs due to its connection with the James River.
- In 2000, six subwatersheds were sensitive, while five were degraded. In 2012, four are sensitive, seven are degraded and two are considered nearly unable to support aquatic life.
- Runoff volumes for the planning of many developments in the watershed have been based on data from 1976 that does not take into account all of the impact occurring from development in the watershed since that time.

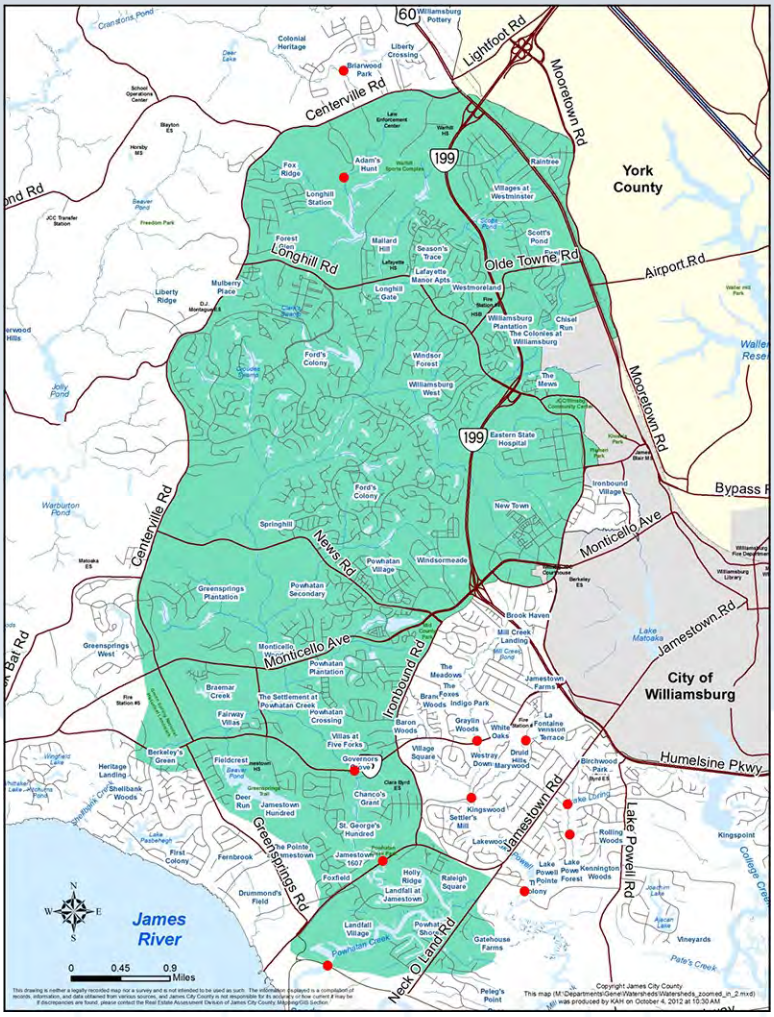
Completed Studies and Plans

- Implementation Plan for the Fecal Coliform TMDL for the Mill Creek and Powhatan Creek (HRPDC, 2011)
- 2009 Powhatan Creek Floodplain Study (WEG, 2009)
- Bacteria Total Maximum Daily Load for Mill Creek and Powhatan Creek (VADEQ, 2008)
- Powhatan Creek Flood Study (WEG, 2008)
- JCC Stormwater Route 5 Culvert Crossing Flooding Study (WEG, 2008)
- Scotts Pond Phase I and II Stream Restoration Project (WEG, 2008)
- Route 5 Culvert Crossing study (2007)
- Powhatan Creek Watershed Management Plan (CWP, 2001)
- Upper Powhatan Creek Drainage Study (MWA, 1996)
- Drainage study of Upper Powhatan Creek Watersheds (CDM, 1987)
- USDA Soil Conservation Service Flood Study (1976)

What Can Citizens Do?

- Clean up after your pet. Pet waste contains bacteria and viruses that are harmful to people and the environment.
- Fertilize properly. Learn about your soil and the type of grass in your yard to make a responsible fertilizing plan. Contact Turf Love at 757-564-2170 for help in identifying your yard needs.
- Leave a natural plant buffer around streams or storm-water ponds. Vegetation filters pollutants before they get to the water.
- Don't put fats and oils down the drain. Fatty deposits build up in the sewer system and can lead to sanitary sewer overflows, leaving harmful bacteria and viruses in the environment.
- Wash your car on the grass, not on pavement. Soap and grease will be filtered through the grass and soil before getting into groundwater.
- Plant a rain garden. These beautiful landscaped areas can act as a trap for rain water and can prevent erosion in areas where there is a lot of stormwater run-off.
- Power-wash with care. Look for cleaning products with environmentally friendly ingredients.
- Don't put leaves and yard clippings in road ditches or on top of storm-drain inlets. Collect leaves and clippings for compost or drop off them off at a County transfer station.
- Go to askhrgreen.org for more helpful ideas.

Powhatan Creek Watershed Map



For More Information

If you are interested in more information, go to jamescitycountyva.gov/jccpride or call 757-259-1446.

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James City County continues to be proactive in the protection and preservation of natural resources in its commitment to create and sustain a quality community. Remember...caring for our natural resources requires a team effort. Together, we can make sure water quality in Powhatan Creek Watershed is protected for generations to come.

2013

Skiffes Creek Watershed

Water Quality Report

James City County
VIRGINIA
Jamestown 1607
Stormwater

jamescitycountyva.gov/jccpride

James City County Water Quality Strategies

As part of a long term commitment to environmental stewardship, James City County volunteers and staff have been gathering information about stream health throughout the County since 2008. The goal of collecting water quality information is to be able to identify emerging water quality problems, target areas for restoration and preservation, document improvements from citizen and County actions and provide educational and volunteer opportunities for the public.

Volunteers and staff collect two types of data: one looks at the types of small creatures that live in streams and the other provides an indication of the amount of harmful bacteria present in a stream. Together, this information provides evidence of the overall health of the County's waterways.

The following information is a summary of known water quality conditions in the County, gleaned from data collected by the Virginia Department of Environmental Quality, from the County's volunteer water monitoring program and from completed James City County watershed management plans. As more information becomes available, this report will be updated.

Skiffes Creek Watershed

Skiffes Creek Watershed consists of tidal, low-lying lands, and runs through York County, the Yorktown Naval Weapons Station, and forms the border between the City of Newport News and James City County. It serves as a drinking water resource for the City of Newport News. Habitat assessment ratings in most of the watershed are considered "excellent", indicating a healthy environment for wildlife. One third of the watershed located within James City County is forested or open water areas. Development in Skiffes Creek watershed primarily consists of industrial (Green Mount Industrial Park) and older residential neighborhoods with poor drainage systems and lack of stormwater treatment.

Water Quality Conditions

Skiffes Creek is on the Virginia Department of Environmental Quality's (VADEQ) impaired waters list for fecal coliform bacteria, dissolved oxygen, and polychlorinated biphenyls (PCBs). There are swimming, shellfish, and fishing advisories in effect for Skiffes Creek due to the bacteria and PCBs present-pollutants that could make people sick if they swim in the water or eat aquatic organisms that live in the creek. In 1998, VADEQ added Skiffes Creek to its list of impaired waters due to the high bacteria counts at their monitoring station. Virginia Department of Health bacteria monitoring of Skiffes Creek caused it to be listed in 2005 for shellfish condemnation. In order for Skiffes Creek to come back to healthy bacteria levels, it has been estimated that there needs to be at least a 92% reduction in fecal coliforms within the stream.

Through the Stormwater Division's Water Quality Monitoring Program, and the efforts of County staff and citizen volunteers, monitoring results indicate that the overall water quality in the portion of Skiffes Creek located within James City County is good and supports a healthy environment.

Problems in the Watershed

- Existing development contains very few stormwater treatment practices; the area has been subject to drainage problems due to flat topography and inadequate conveyance systems. This causes road, garage, and yard flooding to occur in typical rainstorms.
- Stream channels in Skiffes Creek are highly eroded from uncontrolled stormwater runoff and aging infrastructure.

Completed Studies and Plans

- Site Assessment and Conceptual Plan, James River Commerce Center (WEG 2010)
- Fecal Bacteria Total Maximum Daily Load Development for Warwick River (VADEQ 2007)
- Skiffes Creek Baseline Assessment and Conservation Plan (CWP 2005)

What Can Citizens Do?

- Clean up after your pet. Pet waste contains bacteria and viruses that are harmful to people and the environment.
- Fertilize properly. Learn about your soil and the type of grass in your yard to make a responsible fertilizing plan. Contact Turf Love at 757-564-2170 for help in identifying your yard needs.
- Leave a natural plant buffer around streams or stormwater ponds. Vegetation filters pollutants before they get to the water.
- Don't put fats and oils down the drain. Fatty deposits build up in the sewer system and can lead to sanitary sewer overflows, leaving harmful bacteria and viruses in the environment.
- Wash your car on the grass, not on pavement. Soap and grease will be filtered through the grass and soil before getting into groundwater.
- Plant a rain garden. These beautiful landscaped areas can act as a trap for rain water and can prevent erosion in areas where there is a lot of stormwater run-off.
- Power-wash with care. Look for cleaning products with environmentally friendly ingredients.
- Don't put leaves and yard clippings in road ditches or on top of storm-drain inlets. Collect leaves and clippings for compost or drop off them off at a County transfer station.
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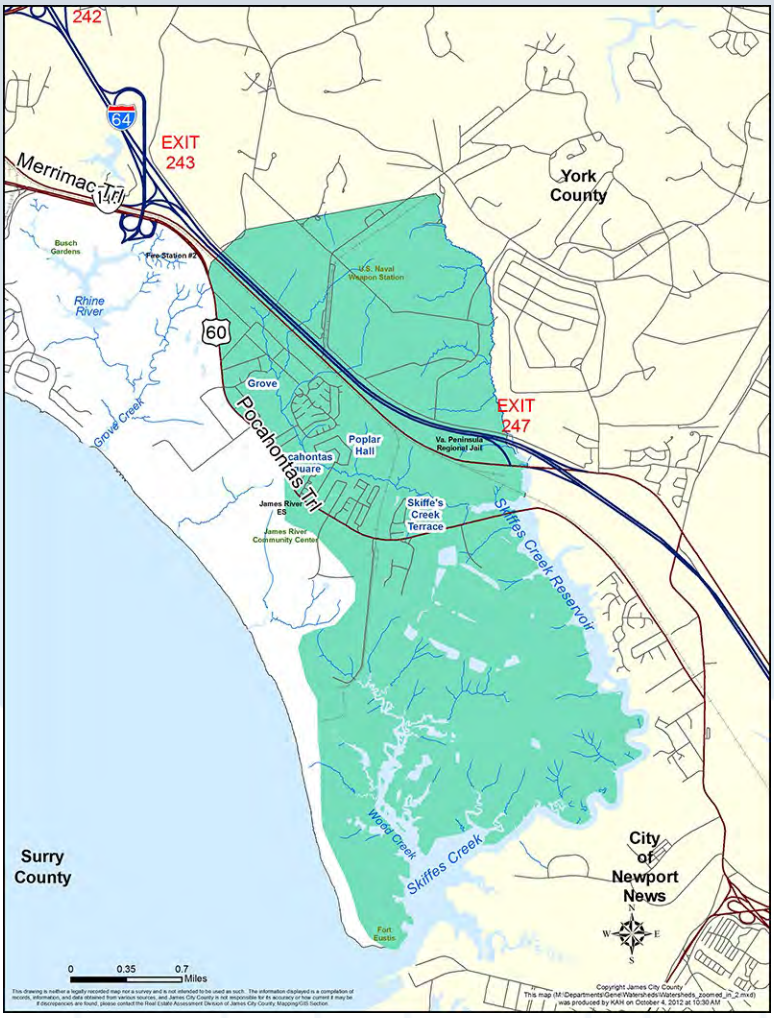
Skiffes Creek Watershed Map



For More Information

If you are interested in more information, go to jamescitycountyva.gov/jccpride or call 757-259-1446.

James City County continues to be proactive in the protection and preservation of natural resources in its commitment to create and sustain a quality community. Remember...caring for our natural resources requires a team effort. Together, we can make sure water quality in Skiffes Creek Watershed is protected for generations to come.

2013

Ware Creek Watershed

Water Quality Report

James City County
VIRGINIA
Jamestown 1607
Stormwater

jamescitycountyva.gov/jccpride

James City County Water Quality Strategies

As part of a long term commitment to environmental stewardship, James City County volunteers and staff have been gathering information about stream health throughout the County since 2008. The goal of collecting water quality information is to be able to identify emerging water quality problems, target areas for restoration and preservation, document improvements from citizen and County actions and provide educational and volunteer opportunities for the public.

Volunteers and staff collect two types of data: one looks at the types of small creatures that live in streams and the other provides an indication of the amount of harmful bacteria present in a stream. Together, this information provides evidence of the overall health of the County's waterways.

The following information is a summary of known water quality conditions in the County, gleaned from data collected by the Virginia Department of Environmental Quality, from the County's volunteer water monitoring program and from completed James City County watershed management plans. As more information becomes available, this report will be updated.

Ware Creek Watershed

The Ware Creek watershed is located in the most northern part of James City County and drains into the York River. Three quarters of the Ware Creek watershed is undeveloped and consists of forested lands, wetlands, and stream Resource Protection Areas. The rest of the area has been traditionally agricultural, while low-density residential neighborhoods and single-family homes are becoming more numerous. Ware Creek watershed also encompasses some newer development, golf course communities, industrial areas such as Stonehouse Commerce Park and Hankins Industrial Park, and Highway 64 as part of its drainage area.

Water Quality Conditions

Ware Creek is on the VA Department of Environmental Quality's (VADEQ) impaired waters list for: fecal coliforms, e. Coli bacteria, low dissolved oxygen, and benthic macroinvertebrates. There are swimming and shellfish advisories in effect for Ware Creek because of the level of bacteria pollution. Ware Creek's impairments for low dissolved oxygen, and benthic macroinvertebrates signify that it's not able to sustain the aquatic life that should be found in it.

In 1998, VADEQ listed the tidal area of Ware Creek as impaired for bacteria on its list of impaired waters, due to the high bacteria counts at their monitoring station. High bacteria counts from VADEQ's bacteria monitoring of the Ware Creek main-stem area caused that part of the creek to be to be listed in 2010. A Total Maximum Daily Load (TMDL) has been written for Ware Creek which gives an account of the bacteria infractions and the numbers that would indicate an acceptable level.

Through the Stormwater Division's Water Quality Monitoring Program, and the efforts of County staff and citizen volunteers, two sites within the watershed are monitored, and the results indicate that though Ware Creek does measure some degree of stress in areas, it meets Virginia's water quality standards most of the time.

Problems in the Watershed

- Bacteria levels are too high for contact recreation or food consumption. While coliform bacteria will naturally be found in the environment from wildlife sources, almost half of the bacteria loading comes from humans and pets. The current goal is a 100% reduction in bacteria from these sources.
- Upper Ware Creek tributaries have been eroded and are contributing to stream degradation due to increased stormwater flows from development.. Sediment is being

washed downstream and is clogging drainage areas.

- Stormwater infrastructure is in need of repair, maintenance, and/or upgrade. Effective stormwater treatment is essential in protecting Ware Creek water quality.

Completed Studies and Plans

TMDL Report for Chesapeake Bay Shellfish Waters: Ware Creek, Taskinas Creek, and Skimino Creek Bacterial Impairments (VADEQ, 2010)

What Can Citizens Do?

- Clean up after your pet. Pet waste contains bacteria and viruses that are harmful to people and the environment.
- Fertilize properly. Know your soil and the type of grass in your yard before you make a responsible fertilizing plan. Contact Turf Love at 757-564-2170 for help in identifying your yard needs.
- Leave a natural plant buffer around streams or stormwater ponds. Vegetation filters pollutants before they get to the water.
- Don't put fats and oils down the drain. Fatty deposits build up in the sewer system and can lead to sanitary sewer overflows, leaving harmful bacteria and viruses in the environment.
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- Power-wash with care. Look for cleaning products with environmentally friendly ingredients.
- Don't put leaves and yard clippings in road ditches or on top of storm-drain inlets. Collect leaves and clippings for compost or drop off them off at a County transfer station.
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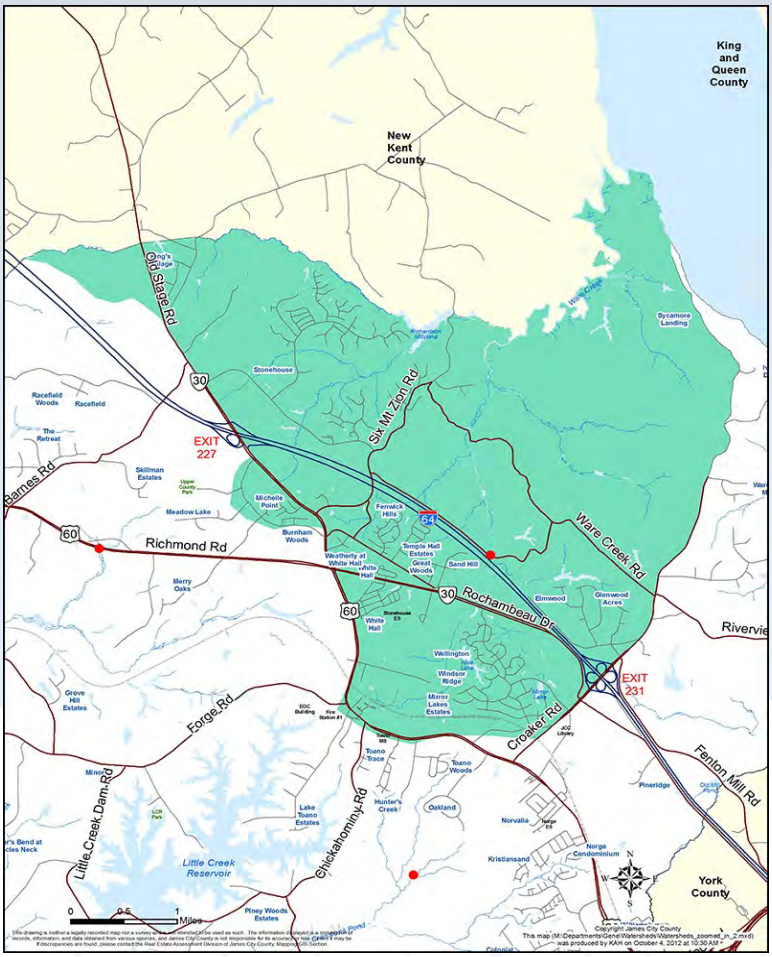
Ware Creek Watershed Map



For More Information

If you are interested in more information, go to jamescitycountyva.gov/jccpride or call 757-259-1446.

James City County continues to be proactive in the protection and preservation of natural resources in its commitment to create and sustain a quality community. Remember...caring for our natural resources requires a team effort. Together, we can make sure water quality in Ware Creek Watershed is protected for generations to come.

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2013

Yarmouth Creek Watershed

Water Quality Report

James City County
VIRGINIA
Jamestown 1607
Stormwater

jamescitycountyva.gov/jccpride

James City County Water Quality Strategies

As part of a long term commitment to environmental stewardship, James City County volunteers and staff have been gathering information about stream health throughout the County since 2008. The goal of collecting water quality information is to be able to identify emerging water quality problems, target areas for restoration and preservation, document improvements from citizen and County actions and provide educational and volunteer opportunities for the public.

Volunteers and staff collect two types of data: one looks at the types of small creatures that live in streams and the other provides an indication of the amount of harmful bacteria present in a stream. Together, this information provides evidence of the overall health of the County's waterways.

The following information is a summary of known water quality conditions in the County, gleaned from data collected by the Virginia Department of Environmental Quality, from the County's volunteer water monitoring program and from completed James City County watershed management plans. As more information becomes available, this report will be updated.

Yarmouth Creek Watershed

Yarmouth Creek Watershed is one of eleven James City County Watersheds. Yarmouth Creek flows into the Chickahominy River, which then flows into the James River. The drainage area includes Cranston's Mill Pond and the Little Creek Reservoir, a drinking water source for the City of Newport News. It includes 1523 acres of wetlands, and most of the watershed is forested with a diverse wildlife population. The upper Yarmouth Creek watershed

area, where the stream begins, consists of commercial and residential development, and new home construction is underway within the headwaters of Yarmouth Creek tributaries.

Water Quality Conditions

Yarmouth Creek is on the Virginia Department of Environmental Quality's (VADEQ) impaired waters list for the first time this year. It is impaired for low dissolved oxygen levels, and for aquatic life. Currently there are no health advisories in effect for it.

Through the Stormwater Division's Water Quality Monitoring Program, and the efforts of County staff and citizen volunteers, Yarmouth Creek has been monitored at three different sites. Water quality has typically been in the marginally acceptable range throughout the watershed, but more recent sampling has indicated a downward trend in water quality, with scores no longer meeting Virginia standards.

Problems in the Watershed

- In 2000, all nine of the subwatersheds that make up Yarmouth Creek were considered sensitive. In 2009, water quality had been degraded in one of these subwatersheds, and more are forecasted to likewise become impacted in the future. Yarmouth Creek runs a risk of becoming degraded from construction activities.
- Headwater streams are showing signs of deterioration due to increased development. Unchecked stormwater run-off has eroded stream channels and created severe headcuts in upstream areas. Sediment pushed downstream chokes aquatic vegetation and water drainage capabilities.
- Aging stormwater infrastructure is in need of maintenance and/or repair. Failing stormwater management systems need to be upgraded to prevent further flooding and erosion impacts.

Completed Studies and Plans

- Site Assessment and Conceptual Plan, Kristiansand Tributary Project (WEG, 2008)
- Site Assessment and Conceptual Plan, Centerville Road Tributary Project (WEG, 2008)
- Yarmouth Creek Watershed Management Plan (CWP, 2003)

What Can Citizens Do?

- Clean up after your pet. Pet waste contains bacteria and viruses that are harmful to people and the environment.
- Fertilize properly. Learn about your soil and the type of grass in your yard to make a responsible fertilizing plan. Contact Turf Love at 757-564-2170 for help in identifying your yard needs.
- Leave a natural plant buffer around streams or stormwater ponds. Vegetation filters pollutants before they get to the water.
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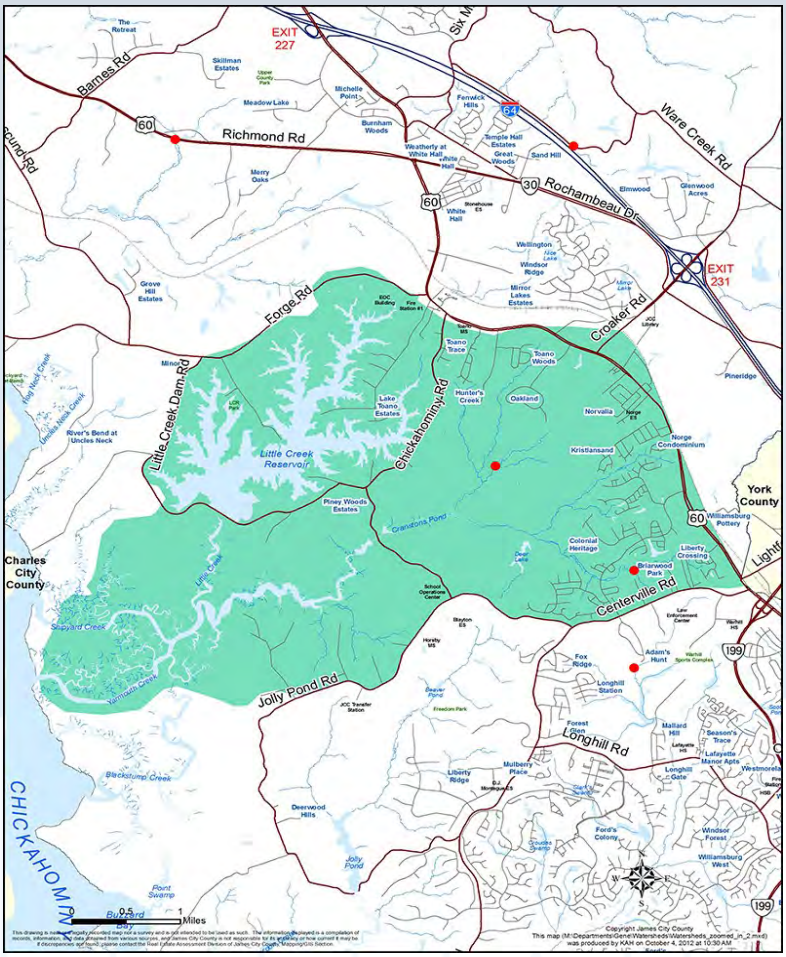
- Power-wash with care. Look for cleaning products with environmentally friendly ingredients.
- Don't put leaves and yard clippings in road ditches or on top of storm-drain inlets. Collect leaves and clippings for compost or drop off them off at a County transfer station.

Yarmouth Creek Watershed Map



For More Information

If you are interested in more information, go to jamescitycountyva.gov/jccpride or call 757-259-1446.

James City County continues to be proactive in the protection and preservation of natural resources in its commitment to create and sustain a quality community. Remember...caring for our natural resources requires a team effort. Together, we can make sure water quality in Yarmouth Creek Watershed is protected for generations to come.

James City County Pride Grant Program
Application Package

The goal of James City County PRIDE (Protecting Resources in Delicate Environments) is to raise public awareness about protecting and improving our exceptional rivers, lakes and streams in James City County.

The PRIDE Grant Program has been established to provide financial support to associations, neighborhoods and businesses to enable volunteer watershed restoration and protective projects. The program has options for applicants to consider:

> ***Stormwater Management Improvements Grants*** is designed to encourage qualified organizations to enhance structural components of existing BMPs or to add new BMPs that will help improve our water quality.
> ***Non-Routine BMP Maintenance Assistance Grants*** is designed to encourage qualified organizations to maintain stormwater facilities in order to prevent infrastructure failure, while helping maintain or restore our water quality.
> ***Drainage Improvement Assistance Grants*** is designed to encourage qualified organizations to seek solutions to drainage problems with county assistance.

Special Conditions and Guidelines for Applicants

- Applications from regulated organizations such as businesses and homeowners associations (HOAs) will require a signature of an officer of that organization having authority to submit the application on behalf of that organization.
- Applications from unregulated organizations such as clubs and associations will require a letter describing a membership vote that commits the organization to provide their portion of the monies to fund the project plus a signature of the person responsible within the organization to ensure compliance.
- Applications will be evaluated based on the project's contribution to improved water quality or drainage.
- Projects must be completed by May 15, 2014 but exceptions may be approved in unusual circumstances. Requests for extensions must be made in writing.
- Some activities may require permitting. Accepted applicants will be advised of permit requirements.
- All applicants will be notified whether or not their applications have been accepted for matching grants; if a grant is awarded, applicants will be notified the amount at that time.
- If the stormwater structure has no maintenance agreement on file, the applicant(s) will be required to sign one before monies can be distributed. Drainage Improvement Grants are not for BMPs and will not require maintenance agreements but will require that the applicant agrees to perform any maintenance for a five year period.
- Full or final payment will be made upon project completion and resubmission of the "Project Budget Form."
- If there are questions about the project or how your ideas can fit into the scope of this application format, the Stormwater Division staff will be happy to assist you with those needs.

Category	Drainage Improvements	Non-Routine BMP Maintenance	Stormwater Management Improvements
Matching monies available (50%-50% split)	Up to $1,000 per award	Up to $1,000 per award	Up to $2,000 per award
Who can apply?	Any organization located within James City County including: HOAs, neighborhoods, businesses, associations and clubs	Any BMP owner including HOAs, neighborhoods or businesses	Any organization located within James City County including: HOAs, neighborhoods, businesses, associations and clubs
Program Description	To address quality of life needs of citizens in terms of flooding and drainage problems	One-time grant to address needs identified in latest JCC inspection report	To enhance structural components to existing BMPs or add new BMP's that will improve our water quality
Examples	Drainage assessments, re-grading, swale construction	Large tree removal, streambank stabilization, slope stabilization, structure restoration	Installation of pond buffers or perimeter plants, creation of "do not mow" zones, installation of a new aquatic bench, forebay, or new aeration features, or the development of a new BMP
Projects not eligible	Projects that do not address the drainage need of the community	Projects without a BMP & drainage system maintenance agreement	Routine maintenance, projects involving VDOT "Right of Way", projects that do not result in a water quality benefit
Program match	50% JCC (up to $1,000) 50% or balance from applicant. Materials donations may be used toward applicant match.	50% JCC (up to $1,000) 50% or balance from applicant. Materials donations may be used toward applicant match.	50% JCC (up to $2,000) 50% or balance from applicant. Materials donations may be used toward applicant match.
Application deadline	September 13, 2013	September 13, 2013	September 13, 2013
Award Timing	October 2013	October 2013	October 2013

James City County PRIDE Grant Program
Application Form

Project Title: _____Date:_____

Organization Name:_____ Regulated? Y___N___ (see guidelines)

Project Contact:_____ Phone:_____

Email:_____

Street Address:_____

City:_____ State:_____ Zip:_____

Application for (check one):

____**Drainage Improvements**

____**Stormwater Management Improvements**

____**Stormwater Maintenance –Non-Routine**

Project Description: Briefly describe the project focusing on defining the problem, the proposed solution, the water resource benefit derived from completion of the project and the number of participants involved. Photos along with descriptions are welcome.

Estimated Project Start Date:_____ Estimated Project Completion Date:_____

Applications may be emailed to stormwater@jamescitycountyva.gov or mailed to Stormwater Division, 5320 Palmer Ln. Suite 2A, Williamsburg, VA 23188

Applications from unregulated organizations must attach a letter describing a membership vote that commits the organization to provide their portion of the monies.

Questions? Call 757-259-1446 or email stormwater@jamescitycountyva.gov

James City County PRIDE Grant Program

Project Budget Form

Project Title:_____

Estimated Project Budget:_____

Materials/Billed Labor	Estimated Total Cost	*Actual Cost
Total		
Date		

*To be filled out upon project completion and submitted with receipts to Stormwater Division, 5320 Palmer Ln. Suite 2A, Williamsburg, VA 23188.

Grant Advancement Request:
Are you requesting any advance reimbursement of costs?: Y_____ N_____
If yes, give a brief explanation of the reason for the request and include the amount requested:

Signature: _____ Title:_____ Date:_____

Please note that James City County will monitor the information contained in this application solely for the James City County PRIDE Grant Program and not for sale or marketing purposes. Submission is not a guarantee of acceptance. James City County reserves the right to photograph the site and event participants for publicity purposes. Please be aware that these photos are for County use only and may be used in future brochures, pamphlets, flyers or on the County website.

Imagine…

Your James City County Neighborhood with a **FREE Dogipot Pet Station!!!!**

The DOGIPOT™ Pet Station is a durable and pleasant looking facility to assist dog owners in picking up after their pets. The Pet Station supplies litter bags through a dispenser and collects dog "dirt" in an odorless, clean fashion.

PRIDE is offering Pet Stations to James City County neighborhoods based on the following criteria:

1. How the Pet Station will be used within the neighborhood.
2. Proposed neighborhood information and education efforts.
3. The ability of the neighborhood to operate and maintain the unit.

Applications Accepted Any Time – Funding is limited - apply early!

If you have questions or need more information:
Call the Stormwater Division at 757-259-1446 or email stormwater@james-city.va.us

Pet Station Application Form

Name of HOA or Neighborhood:	
Board President:	Phone:
Project Contact:	Phone:
Address:	Zip:
Email:	Cell:

CRITERIA:

1. In which James City County watershed is the neighborhood located?

   See the watershed map below to locate your watershed:
   http://www.jamescitycountyva.gov/pdf/devtmgmtpdfs/Environmental/watershed1.pdf

2. Describe how the pet station will be used within the neighborhood. For example, will the unit be installed along a walking trail? In a playground? In a park area? How heavily used is the area? Is there evidence of pet waste in the area?

3. How will your neighborhood advertise the purpose and use of the pet station?

4. Is your neighborhood able to maintain the unit, including refilling the bags and emptying the container? Explain:

5. Why does your neighborhood want a pet station?

Application must be signed by two people, one of which is an association board member (if applicant is an HOA).

Name:	Date:
Name:	Date:

Mail or Fax to either:

JCC Stormwater Division, 5320 Palmer Lane, Suite 2A, Williamsburg VA 23188, Fax: 757-259-5833

Email to: stormwater@james-city.va.us

Successful applicants will be notified 15 days after receipt of application. Dogipots will be available for pick up within 30 days. All Dogipots must be installed within 45 days of award.

NOTE: James City County will maintain the information contained in this application solely for the Dogipot program and not for sale or marketing purposes. Submission is not a guarantee of acceptance. James City County reserves the right to photograph Dogipot installations and use the photographs for publicity purposes.

Outreach Activities July 1, 2013 to June 30, 2014 - PY1

Fiscal Year	DATE	Event	Staff	Display	Presentation	Audience	Number Attending	Materials Distributed	Amounts	Message Focus
2014	7/12/2013	Environmental Education Days/Jcc Rec Connect Summer Camp	Paul Cuomo, Suzanne Dyba	Materials related to Project	hands-on water quality monitoring projects	Middle School Summer Campers	60	No distribution; Led hands-on water quality monitoring projects	NA	Stormwater pollution, Scoop the Poop, Only rain in the drain, Rain gardens, Plant more Plants
2014	7/22/2013	Environmental Education Days/Jcc Rec Connect Summer Camp	Paul Cuomo, Suzanne Dyba	Materials related to Project	hands-on water quality monitoring projects	Elementary School Summer Campers	100	No distribution; Led hands-on water quality monitoring projects	NA	Stormwater pollution, Scoop the Poop, Only rain in the drain
2014	7/26/2013	Environmental Education Days/Jcc Rec Connect Summer Camp	Paul Cuomo, Dawn Oleksy	Materials related to Project	hands-on water quality monitoring projects	Elementary School Summer Campers	130	No distribution; Led hands-on water quality monitoring projects	NA	Stormwater pollution, Scoop the Poop, Only rain in the drain
2014	8/7/2013	Canon Corp Environmental Fair	Paul Cuomo, Pat Menechino	Rain Gardens, Scoop Poop	Rain Gardens, Scoop Poop	Canon staff as well as other presenters	200	Poop bags, pens, knee pads, gold fish	~60 bags, 50 pens, 50 pads, 200 goldfish	Rain Garden design and Function, Scoop the Poop
2014	8/28/2013	Backpacks for kids drive in conjunction with Shiloe Baptist Church and the Commissioner of Revenue	Fran Geissler, Jo Anna Ripley	no	no	School age children	20	Scoop the Poop hand sanitizer, PRIDE pens, Thanks for Recycling pens, and Clean County Commission pencils	40 hand sanitizer, 40 PRIDE pens, 20 Recycling pens, and 20 CCC pencils	Scoop the Poop, PRIDE, and Recycling

Outreach Activities July 1, 2013 to June 30, 2014 - PY1

2014	9/19/2013	DEQ/MACICA Conference	Paul Cuomo, Pat Menechino	no	no	Stormwater and Environmental Professionals	400	Garden knee pads, boat key chains, and garden bags	400, 400, 4	Only rain in the drain
2014	9/14/2013	Drool in the Pool	Fran Geissler, Jo Anna Ripley	no	no	Pet owners	200	Poop bags, and hand sanitizer	150, 200	Scoop the Poop
2014	3/15/2014	Kingsmill Garden Club	SPAC event	no	no	Gardeners	25	Garden kneeling pads, shopping bags	25 each	Plant More Plants, Only Rain in the drain
2014	3/15/2014	Turf Love University	Paul Cuomo	Rain Gardens	no	Homeowners	60	Garden kneeling pads, shopping bags	50 each	Rain Gardens
2014	4/19/2014	AskHRGreen Trailer (Newtown)	Suzanne Dyba, SPAC	no	no	general public	200	grabbers, only rain in drain bags, goldfish	150, 175, 250	Only rain in the drain
2014	4/26/2014	James River Fest at EcoDiscovery Park	Pat Menichino, Fran Geissler, JoAnna Ripley	no	Coastal EnviroScape Demonstrations	general public	200	Goldfish, Scoop the Poop dog toys, Pet Waste bag carriers, grabbers	150 each	Scoop the Poop

Virginia Cooperative Extension

Virginia Tech • Virginia State University

Free!

TURF LOVE UNIVERSITY

Sat., March 15

9 a.m. to Noon

James City County Recreation Center, 5301 Longhill Road

SPRING LAWN CARE → FAMILY FUN ALL SUMMER!

- ✓ How to Grow a Healthy, Attractive Lawn
- ✓ Turfgrass Selection
- ✓ What Are Rain Gardens
- ✓ How Can They Help Water Quality and Chesapeake Bay Clean Up

JCSA James City Service Authority

WATER Smart

Pre-registration required! Call Virginia Cooperative Extension at 564-2179 (leave name, phone, and number attending) See you there!

If you are a person with a disability and desire any assistive devices, services or other accommodations to participate in this activity, please contact Sandra Kee (757-564-2170/TDD*) during business hours of 8 a.m. to 5 p.m. to discuss accommodations 5 days prior to the event. *TDD number is (800) 828-1120.

Virginia Cooperative Extension programs and employment are open to all, regardless of race, color, national origin, sex, religion, age, disability, political beliefs, sexual orientation, genetic information, marital, family, or veteran status, or any other basis protected by law. An equal opportunity/affirmative action employer. Issued in furtherance of Cooperative Extension work, Virginia Polytechnic Institute and State University, Virginia State University, and the U.S. Department of Agriculture cooperating. Edwin J. Jones, Director, Virginia Cooperative Extension, Virginia Tech, Blacksburg; Jewel E. Hairston, Administrator, 1890 Extension Program, Virginia State, Petersburg.

April is Litter Prevention Month

Environmental Outreach in New Town

April 19
9am-4pm

in front of Regal New Town Cinema

Visit the askHRgreen.org trailer to learn more about the effects of...

- cigarette litter
- car washing
- roadside litter
- graffiti
- 'scoop the poop'
- public water systems
- stormwater runoff
- 'Adopt-a-Spot'
- the Virginia litter law
- recycling

James City County Virginia Jamestown 1607
Clean County Commission

RECYCLE MORE TRASH LESS askHRgreen.org

askHRgreen.org

James City County PRIDE
PROTECTING RESOURCES IN DELICATE ENVIRONMENTS
Stormwater Program Advisory Committee

HAMPTON ROADS PDC
PLANNING DISTRICT COMMISSION

PEP14-05

askHRgreen.org

Annual Report FOR Fiscal Year 2014

/askHRgreen /HRgreen

chesapeake franklin gloucester hampton hrsd isle of wight james city newport news norfolk
poquoson portsmouth smithfield southampton suffolk surry virginia beach williamsburg york

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Report Documentation

TITLE:
askHRgreen.org Annual Report for Fiscal Year 2013-2014

REPORT DATE
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GRANT/SPONSORING AGENCY
Local Funds

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ABSTRACT
This report provides a summary of the third year of the askHRgreen.org public outreach and education initiative. The report contains six major sections. The first section provides background about askHRgreen.org. The second section provides an overview of overall campaign results for fiscal year 2013-2014. The third through sixth sections provide an overview of the individual initiatives and results from each of the four askHRgreen.org subcommittees: Recycling & Beautification, Stormwater Education, Water Awareness, and Fats, Oils and Grease Education.

ACKNOWLEDGEMENTS
This report was prepared by the Hampton Roads Planning District Commission (HRPDC) staff in cooperation with the member localities. Preparation of this report was included in the HRPDC Unified Planning Work Program for Fiscal Year 2013-2014, approved by the Commission on April 18, 2013.

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Finding the Inner Green

askHRgreen.org was developed to help Hampton Roads residents find their inner green with just the click of a mouse. For years, the Hampton Roads Planning District Commission (HRPDC) facilitated a variety of environmental education efforts to assist localities in notifying residents and meeting regulatory requirements. Developing consistent regional messaging has always afforded localities an economy of scale that they could not otherwise achieve. Couple that with various emerging issues beginning to overlap, like sanitary sewer overflows and stormwater pollution, and we knew the time was right for the development of an umbrella brand to tie all of the messages together. askHRgreen.org began with offering just the green basics. What we found was that people then craved more information. Once you show someone an easy, green alternative, they get hooked and want to add something else. Now we make the connections for people by illustrating not just what they can do, but why they should care and how their actions impact the environment. askHRgreen.org is powered by the 17 localities of Hampton Roads, HRSD, and HRPDC.

You can like askHRgreen.org at Facebook.com/askHRgreen, tweet and retweet at Twitter.com/HRgreen, tune in at YouTube.com/HRGreenVA, and read and comment on the blog, askHRgreen.org/blog.

FY 2013-2014 Highlights

55,505 website visitors

19.4 million opportunities to see or hear askhrgreen.org in the media

10,604 students impacted through environmental education mini grants

1,324 facebook likes

1,576 twitter followers

4,183 e-newsletter subscribers

FY 2013-2014 Campaign Schedule & Results

Twelve environmentally-themed media campaigns, a Search Engine Marketing campaign, and a Search Engine Optimization campaign ran for a combined total of 45 weeks of exposure in FY14.

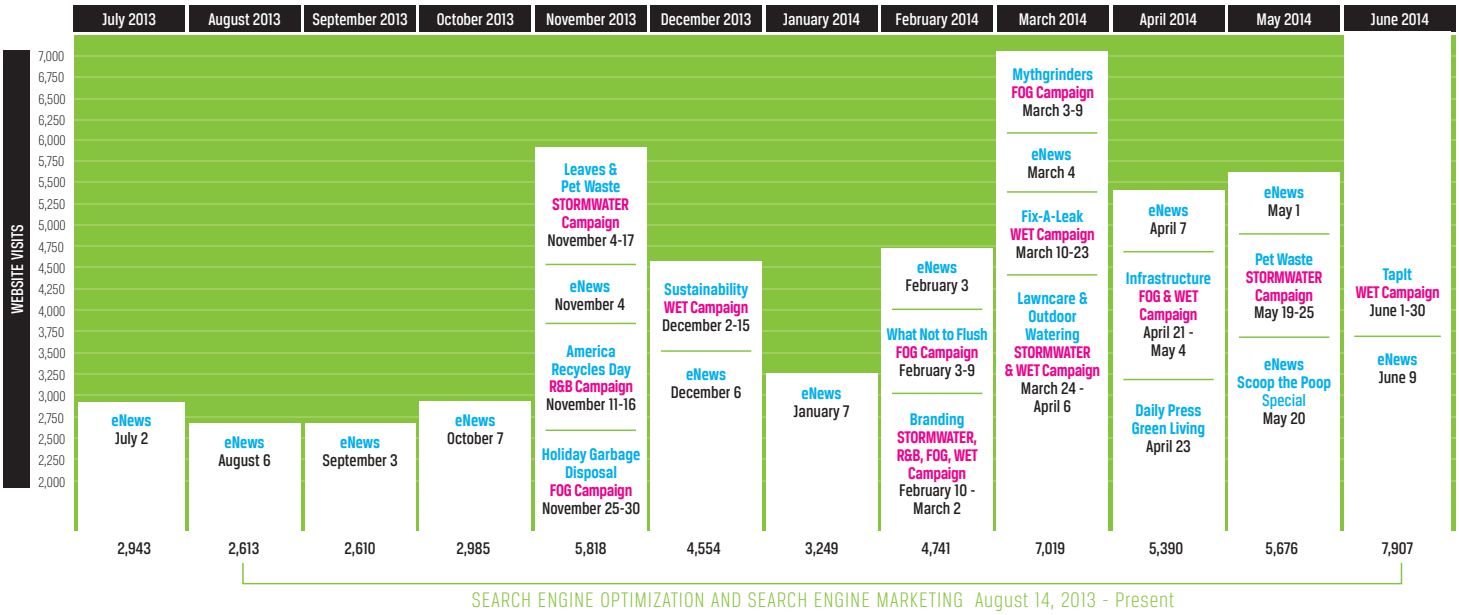
Campaign	Media	jul	aug	sep	oct	nov	dec	jan	feb	mar	apr	may	jun
Leaves & Pet Waste	R-O-F												
America Recycles Day	R- O-F												
Holiday Garbage Disposal	R-O-F												
Water Infrastructure Sustainability	R- O-F												
What Not to Flush	R-O-F												
askHRgreen.org Branding	R- O												
Mythgrinders	R- O-F												
Fix-a-Leak Week	R-O-F												
Lawncare & Outdoor Watering	R-O-F												
Green Living Newspaper Insert	P-O												
Water/FOG Infrastructure Sustainability	R-O-F												
Pet Waste	R-O-F												
TapIt App Launch	R-O-F-T												
askHRgreen.org E-Newsletter													
Public Relations													
SEO/SEM													
askHRgreen.org Blog Articles													

Media Key: R = Radio P = Print O = Online F = Facebook T = Transit

Total Advertising Weeks	45
Impressions	
Newspaper (Green Living & Daily Press Ad)	225,630
Radio*	9.6 million
Online Newspaper (The Virginian-Pilot & Daily Press)	3.1 million
SEM/SEO	642,063
Facebook	3 million
Transit	703,125
Public Relations	1.6 million
Added Value Impressions	520,409
Total Media Budget	$179,214
Total Public Relations & Creative Budget	$90,668
Value	
Media Added Value	$73,715
Public Relations	$85,681
Total Exposure Value	$442,550
Totals	
Impressions	19.4 million
Cost per Thousand Impressions	$14.08
Return on Investment	1.6 : 1

*Radio projections of audience levels are based on data provided by Arbitron Research that projects the impressions within a target audience and the number of times the audience is exposed to the message.

Website Analytics



askHRgreen.org Website Statistics			
	2011-12	2012-13	**2013-14**
Visits	27,424	32,697	**55,505**
Unique Visitors	19,920	25,092	**43,547**
Pageviews	67,047	72,270	**116,818**
Pages per Visit	2.42	2.21	**2.10**
Average Visit Duration	2:19	2:10	**1:48**
Bounce Rate	61.24%	61.27%	**64.37%**
% New Visits	70.78%	75.50%	**77.74%**

Top 10 Ten Website Traffic Sources

1. Google organic up 70%!
2. Direct up 20%!
3. Facebook display
4. Google cpc (paid)
5. Virginian-Pilot display
6. Facebook referral
7. E-newsletters
8. Daily Press display
9. Vbgov.com
10. Mobile facebook referral

askHRgreen.org campaign initiatives & results

SEO/SEM

In FY14, askHRgreen.org launched aggressive Search Engine Optimization (SEO) and Search Engine Marketing (SEM) campaigns to increase and improve traffic to the website. Both campaigns ran for 45 consecutive weeks.

The goal of the SEO program was to improve the askHRgreen.org website's organic (unpaid) search rankings. Optimization tactics included editing/adding keyword-rich content to the site, identifying and eliminating any barriers to search engine indexers, and promoting the site to increase the number of inbound links from other sources. The SEO campaign resulted in 238,779 impressions in FY14 and a 57% increase in clicks from organic search results over FY13.

Organic Search Results		
	2012-13	**2013-14**
clicks	8,513	**14,842**

The SEM program utilized pay-per-click advertising through Google AdWords to increase traffic to the askHRgreen.org website. By bidding on select keywords and phrases, Google ads direct search traffic to relevant content on the askHRgreen.org site. In total, there were five active SEM campaigns comprising 53 ad groups, 276 ads, and 619 targeted keywords. These campaigns garnered over 400,000 impressions and 5,630 clicks to the askHRgreen.org website in FY14.

Google AdWords Campaigns				
	Impressions	Clicks	CTR	Avg. Ad Position
Recycling & Beautification campaign	178,813	3,182	1.78%	2.4
Stormwater campaign	87,624	1,001	1.14%	2.5
Water Awareness campaign	44,651	255	0.57%	3.3
askHRgreen.org branded campaign	65,468	980	1.50%	1.9
FOG campaign	26,728	212	0.79%	3.3
Total	**403,284**	**5,630**	**1.4%**	**2.5**

BRANDING CAMPAIGN

In February of 2014, askHRgreen.org launched a three-week branding campaign combining four 60-second radio ads with banner placements on pilotonline.com and dailypress.com. The themes of the ads included recycling, stormwater runoff, water infrastructure, and what not to flush messages. The branding campaign ran from February 10 through March 2. In addition to the paid media, askHRgreen.org received the following as added value: 15-second bonus spot plus bonus schedule on Entercom; no-charge bonus on MAX and WTYD; Music Hour sponsorship on MAX; e-blast and concert sponsorship on SAGA; and online display for Entercom, MAX, SAGE, Sinclair and WTYD.

askHRgreen.org Branding Campaign	
Paid Media (3 weeks)	
Target Audience: Adults 18-49	
Radio	
Impressions	1,761,150
Reach	61.6%
Frequency	4.0
Online Newspaper (The Virginian-Pilot & Daily Press)	
Impressions	695,295
Clicks	532
CTR (Clickthrough Rate)	0.08%
Unpaid Media	
Added Value	$10,194
Added Value Impressions	44,308
Overall Campaign	
Total Impressions	2,500,753
Total Budget	$21,246
Total Exposure Value	$31,440
Return on Investment	1.48 : 1
Cost per Thousand Impressions	$8.50

Green Living

The Virginian-Pilot continued to publish the Green Living newspaper insert for a third year and invited askHRgreen.org to contribute to the editorial content again this year. Several articles featured contributions from askHRgreen.org, including:

- "It's Easy Being Green" – a top 10 list of easy ways to go green written by Bernadette Kinlaw.
- "Teach Them Well and They'll Lead the Way" – an article about raising children who respect the Earth and their impact on it written by Victoria Hecht.
- "What Can You Do" – a two-page spread featuring tips for your home, your yard and your community from askHRgreen.org.
- "Waste Away" – an editorial piece on what localities are doing to improve the sanitary sewer and stormwater systems written by Julia Hillegass of askHRgreen.org.

In addition to contributing valuable content, askHRgreen.org also purchased a full-page ad to run in Green Living. The cost of the ad was shared between the askHRgreen.org campaign and the Stormwater Education, Water Awareness, and FOG Education Subcommittees. The insert was included in the April 23, 2014 edition of *The Virginian-Pilot* and the full-page ad ran simultaneously in the *Daily Press*. In addition, askHRgreen.org purchased 5,000 overprints to distribute as needed.

Green Living & Daily Press Ad	
Total Impressions	325,630
Total Budget	$7,596
PR Value	$38,407
Total Exposure Value	$46,003
Return on Investment	6.1 : 1
Cost per Thousand Impressions	$23.32

Social Media

In FY14, social media continued to be a key source for public outreach. Facebook, Twitter, YouTube, and Pinterest were all used to share askHRgreen.org and various locality events, respond to requests from citizens seeking information, share blog articles and promote new programs like the Scoop the Poop Pledge and the Pet Waste Station Grant Program. Through the "Let's Talk Green" blog, which is written by askHRgreen.org team members and guest bloggers, 150 interesting posts were published throughout the year covering everything from the "Sewer Sociology" of the Super Bowl to an "Eco-Friendly Easter Bunny."

E-Newsletter

The askHRgreen.org e-newsletter is shared via email to media contacts and an ever-growing list of citizens whose email addresses have been collected at events and through online promotions. In FY14, a total of 13 e-newsletters covering seasonal "green" tips, events, and askHRgreen.org campaign updates were sent out. By the end of FY14, the askHRgreen.org subscriber list was up to 4,183 subscribers and it continues to grow.

askHRgreen.org E-Newsletter Statistics	
Subscribers (as of June 2014)	4,183
Total Emails Sent	39,250
Open Rate	15.3%
CTR (Click Through Rate)	1.29%

Online Toolkit

The askHRgreen.org Online Media Toolkit launched in FY14. Featured on the website and ready to download, the toolkit is especially useful to civic leagues, community groups, home owner associations, schools, clubs, businesses, and any organization or individual with an interest in improving neighborhoods and communities. Ideal for both online and print reproduction, the toolkit items are professionally designed and carry the signature askHRgreen.org graphic style. The materials are organized so that it is easy for users to browse and select the topic they seek in the medium of their choice. In addition to logos, print and digital ads, rack cards, brochures, tip cards, posters and billboards, there are feature articles, publications, infographics, radio scripts, and stickers available, too.

Media Ambassadors

In the fall of 2013, askHRgreen.org once again hosted a two-part media training for 15 team members who serve as media ambassadors. The training included a review of the role of an ambassador, blogging guidelines and expectations, tips on how to prepare for a radio interview, and mock interviews with Barbara Hamm Lee, executive producer and host of "Another View" at WHRV. Below is the list of askHRgreen.org media ambassadors who attended the training and are now better prepared to handle any future media contacts:

Cris Ausink, *Hampton*
Donna Corbus, *Portsmouth*
Sarah Crawford, *HRSD*
Katie Cullipher, *HRPDC*
Beth Davis, *James City County*
Rebekah Eastep, *HRPDC*
Laurie Halperin, *York County*
Deidre Harmon, *Norfolk*
Julia Hillegass, *HRPDC*
Fleta Jackson, *Norfolk*
Quwania Jefferson, *Norfolk*
Eric Roberts, *Virginia Beach*
Elizabeth Vaughn, *Chesapeake*
Brianna Venner, *Hampton*
Lori Woolman, *Newport News*

Events

The askHRgreen.org campaign's education and outreach efforts include representation at various regional public events throughout the year (Earth Day celebrations, fairs, home & garden shows, community days, etc.). Committee members volunteer to staff either the askHRgreen.org mobile education trailer or a table display at these events and hand out educational materials and promotional items to those in attendance. In FY14, team members represented askHRgreen.org at 36 community events.

2013-2014 Regional Events		
8/24	Old Beach Farmers Market	Virginia Beach
9/6 - 9/8	Hampton Bay Days	Hampton
9/12 - 9/15	Isle of Wight County Fair	Windsor
9/21	Master Gardener Fall Gardening Festival	Virginia Beach
9/21	Newport News Master Gardeners Go Green	Newport News
9/23	ODU Natural Resources & Environmental Fair	Norfolk
10/5	Hampton Roads Solar Homes Tour	Norfolk
10/8	ODU Wellness Casino	Norfolk
10/26	Williamsburg Farmer's Market	Williamsburg
11/1	Achilles Elementary	Gloucester
11/15	ARD Electronics Recycling Event	Portsmouth
11/16	ARD Electronics Recycling Event	Yorktown
11/16	Lynnhaven River Now Fall Festival	Virginia Beach
2/7 - 2/9	PHBA Home & Garden Show	Hampton
2/13	Virginia Living Museum Home School Day	Newport News
3/8	SEVA CAI Community Association Day	Virginia Beach
4/5	Providence Elementary Earth Day	Virginia Beach
4/11 - 4/13	Mid-Atlantic Home & Garden Show	Virginia Beach
4/18	Earth Day Fair	Norfolk
4/19	James City County Litter Prevention Event	Williamsburg
4/19	William & Mary Earth Week Celebration	Williamsburg
4/26	Virginia Living Museum Earth Day	Newport News
4/26	Riverfest 2014	Norfolk
4/27	MOCA Plastic Bag Recycling Event	Virginia Beach
5/3	Mt Trashmore Earth Day Celebration	Virginia Beach
5/5 - 5/7	VA AWWA Utility Rodeo	Norfolk
5/10	Drinking Water Week Celebration	Newport News
5/16 - 5/17	Hoffler Creek Watershed Weekend	Portsmouth
5/22	Virginia Aquarium Sensible Seafood Fest	Virginia Beach
6/3	CMA CGM (America) LLC Environmental Fair	Norfolk
6/5	Anheuser-Busch Environmental Fair	Williamsburg
6/14	Boardwalk Arts Festival	Virginia Beach
6/19	NASA-Langley Safety & Health Expo	Hampton
6/21	Lake Meade Dog Park Grand Opening	Suffolk
6/28	Old Beach Farmers Market	Virginia Beach
6/28	Olden Days	Smithfield

Mini Grants

The askHRgreen.org Environmental Education Mini Grant Program provides grants of up to $500 for environmentally-themed projects. All Hampton Roads school teachers (K-12), youth leaders, or organizations working with youth are eligible to apply and projects must be tied to at least one of the askHRgreen.org program focal areas. In FY14, a total of $13,740 was awarded through 32 mini grants reaching more than 10,600 students in 29 schools/organizations in 10 localities across Hampton Roads.

2013-2014 Environmental Education Mini Grants			
SCA Recycling Program	Abingdon Elementary School	Gloucester County	$282
Courtyard Learning Lab	B.M. Williams Primary School	Chesapeake	$500
Wetland Restoration	Booker T. Washington High School	Norfolk	$500
Drip…Drip…Drop Irrigation Challenge	Booker T. Washington High School	Norfolk	$500
Parcel Pickup	Churchland High School	Portsmouth	$485
Green Art Mural	Crittenden Middle School	Newport News	$500
DJ Montague School Recycling Program	DJ Montague Elementary School	Williamsburg	$170
Elkay Bottle Filling Water Fountain	Grafton High School	York County	$350
Granby Go Green Community Garden	Granby High School	Norfolk	$500
Recycling Rangers	James River Elementary PTA	James City County	$500
The Whoas of H2O	Kellam High School	Virginia Beach	$300
Eco Gardening	Lighting the Way	Hampton	$500
Matoaka Elementary Environmental Club	Matoaka Elementary School	James City County	$250
Oyster Reef Restoration	Norfolk Christian Lower School	Norfolk	$110
Oyster Reef Restoration	Norfolk Christian School	Virginia Beach	$110
A Beautiful World	Norfolk Public Library Youth Services Department	Norfolk	$500
Planted Aquarium	Norview Middle School	Norfolk	$500
Floating Wetlands	Ocean Lakes High School	Virginia Beach	$500
Tree Nursery	Plaza Middle School	Virginia Beach	$500
Unity in the Community: Pitching in to Beautify	Spratley Gifted Center	Hampton	$500
Nature Backpack Kits Get Students Interacting with Nature	Spratley Gifted Center	Hampton	$455
Recycling Gone Crazy	Spratley Gifted Center	Hampton	$498
Operation Oyster	Strawbridge Elementary School	Virginia Beach	$500
Oyster Reefkeepers of VA School Oyster Restoration	Thoroughgood Elementary School	Virginia Beach	$250
Reduce, Reuse, Recycle at TMS	Toano Middle School	James City County	$500
Butterflies and Bivalves	Virginia Beach Middle School	Virginia Beach	$480
Annual Farm Days	Virginia Dare Soil & Water Conservation District	Virginia Beach	$500
Reduce Water Bottles Through Bottle Refill Stations	Warhill High School	Williamsburg	$500
Creative Wooden Benches/Planters	Western Branch Middle School	Chesapeake	$500
Oyster Restoration	Willoughby Elementary School	Virginia Beach	$500
School Yard Habitat	York High School	York County	$500
Summer Green Day	Youth Volunteer Corps of Hampton Roads	Newport News	$500
Recycling & Beautification Subcommittee awarded $5,412 • Stormwater Education Subcommittee awarded $4,978 • Water Awareness Subcommittee awarded $3,350			

Public Relations

FY14 was a busy year for askHRgreen.org in the media. Fifteen news releases were issued through the program covering seasonal topics, news, events, and promotions which were picked up by a variety of media outlets. There were also several guest columns featured in various publications covering topics ranging from landscaping tips for businesses to the recent sewer consolidation project and team members participated in a number of interviews. The total value of this publicity for FY14 was $85,681.

WVEC.COM

Christmas tree recycling and disposal information

Credit: Getty Images

Undecorated Christmas tree set out for pickup

by 13News Now

WVEC.com

Posted on December 26, 2013 at 10:23 AM

Updated Thursday, Jan 2 at 12:24 PM

CHESAPEAKE - Christmas Day has come and gone and some people a take down the decorations. Others will wait until the new year.

If you put up a real tree, you can recycle it. Several communities turn t use around town.

Here is information, collected by HRGreen, on natural tree recycling.

2013-2014 Public Relations Report

Date	Format	Media Outlet	Title	Length	Circ/Imp	PR Value
Mon. Sept. 9, 2013	T/O	Cox Communications "Cox Connections"	Back to school with askHRgreen.org, interview with Julia Hillegass	5:40 minutes	15,000	$900.00
Sun. Oct. 27, 2013	T/O	WVEC-TV "Dialogue"	Plug into America Recycles Day, interview with Katie Cullipher and Whitney Lester	6:00 minutes	70,000	$2,250.00
Thurs. Oct. 31, 2013	T/O	City of Portsmouth PCTV-TV "Avenue Update"	Plug into America Recycles Day, interivew with Rebekah Eastep, Donna Corbus	11 minutes	10,000	$1,050.00
Thurs. Nov. 5, 2013	O	The Virginian-Pilot "Wildlife and More" blog	Help for neighborhoods to scoop the poop		30,000	$1,350.00
Wed. Nov. 6, 2013	P/O	Daily Press	Recycle old electronics, get paper shredded at drop-off centers	2 col. Inches	57,500	$138.00
Thurs. Nov. 7, 2013	T/O	York County WYCG-TV "County News Minute"	Plug into America Recyles Day, interivew with Laurie Halperin	1:30 minutes	10,000	$600.00
Tues. Nov. 12, 2013	T/O	WVEC-TV "News at Noon"	Plug into America Recycles Day, interview with Donna Corbus	2:42 minutes	175,000	$1,875.00
Sun. Nov. 24, 2013	P/O	The Virginian-Pilot "Gracious Living" section	Don't blow leaves into ditches, drains, lakes	24 col. Inches	165,630	$12,888.00
Sun. Dec. 8, 2013	P/O	The Virginian-Pilot "Thriving and Survivng" blog	Free pet waste disposal system		30,000	$1,350.00
Sun. Dec. 8, 2013	P/O	The Virginian-Pilot "Business" Section	Free pet waste disposal system	4 col. Inches	165,630	$2,148.00
Sun. Dec. 8, 2013	P/O	The Chesapeake Clipper	Neighborhoods can apply for free pet waste stations	21.5 col. Inches	33,756	$2,130.00
Fri. Dec. 13, 2015	O	The Suffolk Sun Online	People can pick up pet waste stations for free		15,000	$675.00
Fri. Dec. 13, 2015	O	The Portsmouth Currents Online	People can pick up pet waste stations for free		15,000	$675.00
Sun. Dec. 15, 2013	P/O	The Norfolk Compass	Organization offers free waste stations	4 col. Inches	27,130	$324.00
Sun. Dec. 15, 2013	P/O	The Virginian-Pilot "Gracious Living" section	Scoop the poop and dispose of it too	13.5 col. Inches	165,630	$7,251.00
Thurs. Dec. 26, 2013	O	AltDaily Website	How to Recycle Your Christmas Tree in Hampton Roads		15,000	$675.00
Thurs. Dec. 26, 2013	O	WVEC-TV Website	Christmas Tree Recycling and Disposal List		30,000	$1,350.00
Month of April 2014	P	Tidewater Women Magazine	Spring Gardening 101	1/3 page	30,000	$1,800.00
Week of April 21, 2014	P/O	Inside Business	Is your landscaping harming our waterways? Experts column by Julia Hillegass	1/2 page	9,000	$5,595.00
Wed. April 23, 2014	P/O	Green Living	Teach them well and they'll lead the way	1/2 + 1/4 page	168,130	$10,057.50
Wed. April 23, 2014	P/O	Green Living	What you can do	Double truck	168,130	$22,680.00
Wed. April 23, 2014	P/O	Green Living	Waste away, guest column by Julia Hillegass	1/2 page	168,130	$5,670.00
Sun. April 27, 2014	T/O	WVEC-TV "Dialogue"	Great American Cleanup interview with Katie Cullipher and Lisa Rene Jennings	6.85 minutes	70,000	$2,250.00

T = television, P = print, O = online

Recycling & Beautification Subcommittee

The Recycling and Beautification Subcommittee is a coalition of local government staff members working together to share ideas and pool resources for various education programs tailored to beautification, litter prevention, and recycling education.

FOCAL AREA: *America Recycles Day*
TARGET AUDIENCE: *Adults; Age 25-54*

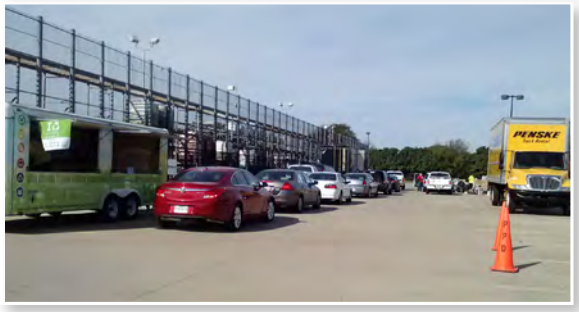
The Recycling and Beautification Committee celebrated Keep America Beautiful's America Recycles Day 2013 by hosting two electronics recycling and document shredding events in Hampton Roads. The events provided a convenient way for small businesses and residents to shred unwanted documents and recycle old electronics. To cover the entire region, one event was held on the southside and another on the peninsula.

The southside event took place on November 15 at the Lowe's in Portsmouth while the peninsula event took place the following day at the York County Sports Complex. VersAbility Resources donated their time and resources by providing electronics recycling to the public at no charge. Stealth Shredding also partnered with askHRgreen.org to provide free document shredding services to the public. One of the critical components in the success of the events was the emphasis placed on outreach to small businesses that typically have barriers to low-cost, environmentally-friendly document and e-waste disposal options.

The events were also supported with a one-week media campaign that ran from November 11 to November 16 and included banner displays on pilotonline.com and dailypress.com, 60-second radio ads, and Facebook ads. As added value for the paid media campaign, Eagle 97.3 (WGH-FM) did a live remote from the York County collection event on November 16. Other added value items included an on-air feature by Eagle 97.3, bonus spots on The Tide 92.3 (online and radio) and bonus spots on STAR 1310 AM. There were also four TV interviews and one print article in the Daily Press as a result of public relations efforts for these events.

America Recycles Day Collection Results (Southside & Peninsula):

- 39,411 pounds of electronics
- 29,260 pounds of paper
- 360 pounds of cardboard (Southside only)



ARD Events Media & Public Relations	
Paid Media (1 week)	
Radio	
Impressions	657,200
Reach	34.9%
Frequency	2.9
Online Newspaper (The Virginian-Pilot & Daily Press)	
Impressions	115,190
Clicks	208
CTR (Clickthrough Rate)	0.18%
Facebook	
Impressions	278,780
Clicks	692
CTR (Clickthrough Rate)	0.248%
Unpaid Media	
Added Value	$3,671
Added Value Impressions	2,401
Overall Campaign	
Total Impressions	1,053,571
Total Budget	$6,006
Total Exposure Value	$9,677
Return on Investment	1.61 : 1
Cost per Thousand Impressions	$5.70

FOCAL AREA: *Great American Cleanup™*
TARGET AUDIENCE: *Entire Hampton Roads Community*

The Subcommittee also promoted Keep America Beautiful's 2014 Great American Cleanup initiative. Most localities held multiple events from April to June to help beautify and cleanup their communities. The Subcommittee supported these efforts by issuing a news release about the event, featuring the event details prominently on the website and social media sites as well as featuring information about events on the blog and in the e-newsletter. The askHRgreen.org media ambassadors also helped to promote the Great American Cleanup with an interview on WVEC-TV 13's "Dialogue" program for a total public relations exposure value of $750.

FOCAL AREA: *Christmas Tree Recycling*
TARGET AUDIENCE: *Entire Hampton Roads Community*

In FY14, the Recycling and Beautification Subcommittee also helped to get the word out about Christmas tree recycling programs across the region. The majority of localities in Hampton Roads provide free Christmas tree pickup and recycling. To promote these free municipal programs, a news release was issued in addition to featuring the information prominently on the website and social media. The information was also included on the blog and featured in the e-newsletter. Many local media outlets picked up the information including WVEC-TV 13 News and AltDaily for a total public relations value of $675.

FOCAL AREA: *Recycle More, Trash Less Campaign*
TARGET AUDIENCE: *Entire Hampton Roads Community*

The Subcommittee rolled out a new logo for its recycling education and outreach campaign in FY14. The "Recycle More, Trash Less" slogan encourages everyone in the Hampton Roads region to make recycling a priority whether at home, at work, or on-the-go. The opposing arrows design emphasizes that recycling is the desired behavior and trashing is the less desirable option. The logo was used in a new poster and rack card developed in FY14 to help Hampton Roads residents better understand what items are accepted through curbside collection and what items are only accepted in specialty programs such as electronics, plastic bags, and batteries.

FOCAL AREA: *The State of Recycling in Hampton Roads*
TARGET AUDIENCE: *Entire Hampton Roads Community*

In FY14, the Recycling and Beautification Subcommittee worked diligently to produce "The State of Recycling in Hampton Roads" White Paper. The white paper aims to outline the current state of recycling in Hampton Roads, explain ways to improve current recycling programs, and provide a sampling of innovative recycling programs that are increasing recycling participation and/or volume at the national, regional, and local levels. The white paper will also outline next steps including coalition building with community partners and increased public education campaigns.

Although the majority of the work on the white paper was performed in FY14, it is anticipated to be released

during FY15. The layout and design of the white paper will include helpful illustrations with accompanying resources for PowerPoint presentations and customizable graphics. Once complete, the white paper and associated presentation materials will be the go-to resource for recycling information related to Hampton Roads. The target audience includes local government leaders, members of the media, community organizations, neighborhood associations, corporate leaders, and area schools.

STORMWATER EDUCATION SUBCOMMITTEE

The Stormwater Education Subcommittee is a cooperative partnership of the region's seventeen member cities and counties. This cooperative effort has been underway since 1997 as a formal adjunct to the required public information component of the Virginia Pollution Discharge Elimination System Permits (VPDES) for Phase I and Phase II Municipal Separate Storm Sewer Systems (MS4). Local government staff members work together to share ideas and pool resources for various education programs tailored to stormwater pollution prevention.

FOCAL AREA: *Leaves and Pet Waste*
TARGET AUDIENCE: *Adults; Age 35-64*

The Stormwater Education Subcommittee ran a two-week campaign from November 4 through November 17 to help Hampton Roads residents remember that fallen leaves should never be put down storm drains. The campaign included banner displays on pilotonline.com and dailypress.com, 60-second radio ads, and Facebook ads. Messaging highlighted the fact that fallen leaves can lead to flooding and algal blooms in local waterways. As some localities have different methods for collecting leaves, the recommended actions included several options for properly disposing of leaves including raking, bagging, mulching, and composting.

As added value for the paid media campaign, the Subcommittee also received sponsorship of commercial-free music hours on Eagle 97.3 and 92.9 The Wave, bonus spots and online display on 92.3 The Tide, online display and e-blast from 106.9 The Fox, and bonus spots on STAR 1310 AM. The askHRgreen.org media ambassadors also participated in a 20-minute radio interview about the proper way to dispose of yard debris and other green living tips as added value. In addition, the campaign was picked up by *The Virginian-Pilot,* which printed an article on the topic in the Gracious Living section for a total public relations value of $4,296.

Leaves & Pet Waste	
Paid Media (2 weeks)	
Radio	
Impressions	1,207,570
Reach	45.3%
Frequency	4.3
Online Newspaper (The Virginian-Pilot & Daily Press)	
Impressions	293,256
Clicks	535
CTR (Click Through Rate)	0.18%
Facebook	
Impressions	943,523
Clicks	1,277
CTR (Click Through Rate)	0.14%
Unpaid Media	
Added Value	$6,866
Added Value Impressions	9,403
Overall Campaign	
Total Impressions	2,453,752
Total Budget	$14,503
Total Exposure Value	$21,369
Return on Investment	1.47 : 1
Cost per Thousand Impressions	$5.91

FOCAL AREA: *Lawn Care/Outdoor Watering*
TARGET AUDIENCE: *Adults; Age 35-64*

The Stormwater Education Subcommittee partnered with the Water Awareness Subcommittee to promote smart spring lawn care and outdoor watering practices in FY14. The two-week campaign (March 24 through April 6) instructed Hampton Roads residents to work smarter, not harder when it comes to having a great outdoor landscape.

The messages highlighted by this campaign included soil testing, seeding bare spots, leaving grass clippings on the lawn, and replacing grassy areas with flower beds. The campaign included banner displays on pilotonline.com and dailypress.com, 60-second radio ads, and Facebook ads.

As added value for the paid media campaign, the Subcommittees also received commercial-free music hour sponsorship from Max Media; bonus spots and online display on Saga Communications, Max Media and 92.3 The Tide; e-blast from Saga Communications; bonus 15-second spots on Entercom stations; and the March Mayhem Tournament Challenge Regional Sponsorship including 25 live promotional announcements, sponsor logo, e-blasts, and social media posts with 3 mentions per day during tournament play (March 17-April 6).

Lawn Care/Outdoor Watering	
Paid Media (2 weeks)	
Radio	
Impressions	1,116,560
Reach	47.2%
Frequency	3.8
Online Newspaper (The Virginian-Pilot & Daily Press)	
Impressions	252,915
Clicks	216
CTR (Click Through Rate)	0.09%
Facebook	
Impressions	260,419
Clicks	1,718
CTR (Click Through Rate)	0.66%
Unpaid Media	
Added Value	$8,663
Added Value Impressions	19,395
Overall Campaign	
Total Impressions	1,649,289
Total Budget (split between 2 committees)	$15,000
Total Exposure Value	$23,663
Return on Investment	1.58 : 1
Cost per Thousand Impressions	$9.09

FOCAL AREA: *Pet Waste*
TARGET AUDIENCE: *Women; Age 25-34*

The Subcommittee continued outreach to the public regarding the importance of scooping the poop with a one-week pet waste media campaign. The campaign, which ran May 19 through May 25, included banners on pilotonline.com and dailypress.com, 60-second radio ads, and Facebook ads. As added value for the paid media campaign, the Subcommittee also received two 30-minute radio interviews.

Pet Waste	
Paid Media (1 week)	
Radio	
Impressions	31,300
Reach	5.3%
Frequency	1.7
Online Newspaper (The Virginian-Pilot & Daily Press)	
Impressions	83,530
Clicks	75
CTR (Click Through Rate)	0.09%
Facebook	
Impressions	104,089
Clicks	859
CTR (Click Through Rate)	0.83%
Unpaid Media	
Added Value	$1,368
Added Value Impressions	NA
Overall Campaign	
Total Impressions	218,919
Total Budget	$3,000
Total Exposure Value	$4,368
Return on Investment	1.46 : 1
Cost per Thousand Impressions	$13.70

FOCAL AREA: *Pet Waste Station Grant Program*
TARGET AUDIENCE: *Homeowners, Property Managers & Neighborhood Associations*

In FY14, the Stormwater Education Subcommittee began an exciting new program with the goal of reducing pet waste in all Hampton Roads watersheds. The Pet Waste Station Grant Program, launched in December 2013, gives citizens the opportunity to apply for a free pet waste station to install in their neighborhoods. The program is geared toward neighborhood associations, community groups and property managers that are ready to make scooping the poop a priority. Once an application is approved by the appropriate locality representative, askHRgreen.org provides the pet waste station, which comes ready to install and includes a post, sign, bag dispenser, waste can, hardware, 400 dog waste bags and 50 can liners. The citizen or community group is then responsible for installing the station, emptying the trash regularly and replacing the bags. The responsible party is also asked to promote the purpose and use of the station.

In the first seven months of the program, 98 pet waste stations were installed in 13 localities across the region. The program received vast media attention resulting in eight print articles for a public relations value of $5,901.

PET WASTE STATIONS AWARDED IN FY14

FOCAL AREA: *Scoop the Poop Pledge*
TARGET AUDIENCE: *All Hampton Roads Pet Owners*

The Stormwater Education Subcommittee partnered with 19 local organizations including animal shelters, animal welfare groups, and watershed restoration groups to launch the Scoop the Poop Pledge in FY14. The pledge, available online at askHRgreen.org/scoop-the-poop-pledge, asks dog owners to support clean and healthy waterways by being good environmental stewards. To sign up, pet owners pledge to...

- Be good environmental stewards and neighbors by not looking the other way when it comes to pet waste.
- Scoop it, bag it, and trash it each and every time whether in their own yards or out for a walk.
- Always take poop bags on walks with pets – even if it means tying plastic grocery bags to the leash so they don't forget.
- Share the importance of keeping pet waste out of waterways with others in their community.
- Share the Scoop the Poop Pledge with other pet owners in their community.

A coordinated email blast was sent out on May 20, 2014 by all partnering organizations to over 60,000 email recipients encouraging residents to sign the pledge. This coincided with the Subcommittee's pet waste media campaign which ran from May 19-25. There was also a three-day contest in which those who signed the pledge could be randomly selected to win one of three separate dog-friendly prize packages.

By June 30, 2014, 576 people had taken the pledge to always scoop the poop!

FOCAL AREA: *Storm Drain Medallion Program*
TARGET AUDIENCE: *Entire Hampton Roads Community*

There are thousands of storm drains across Hampton Roads that all lead directly to local waterways. The Storm Drain Medallion Program helps people remember that "only rain belongs down the drain" by allowing volunteers to adhere medallions stating "No Dumping: Leads to Waterway" on storm drains in their neighborhoods. The Subcommittee promotes the program to schools, community associations, youth clubs, and volunteer groups of all ages across the region. The program is particularly popular with Boy Scout and Girl Scout troops.

Approved applicants through the Storm Drain Medallion Program each receive medallions, adhesive, a lesson plan, and PowerPoint presentation about stormwater and how individual actions affect our local waterways. Each group works with representatives from their locality to map out which storm drains will be marked. This allows for ease of tracking. This fiscal year, the Subcommittee received 16 applications to the program which resulted in over 300 medallions being placed on storm drains across the region.

FOCAL AREA: *Lawn Care/Fertilizer*
TARGET AUDIENCE: *All Hampton Roads Pet Owners*

In an effort to educate residents about the proper ways to fertilize and the importance of soil testing, the Stormwater Education Subcommittee developed a new brochure in FY14. The soil testing brochure encourages residents to have their soil tested before deciding to apply fertilizer. It includes step-by-step instructions with helpful graphics on how to take the sample and explains how to interpret the information that will be reported back from the soil testing laboratory. The brochure also covers the best time to fertilize for cool vs. warm season grasses and encourages the use of slow-release fertilizers.

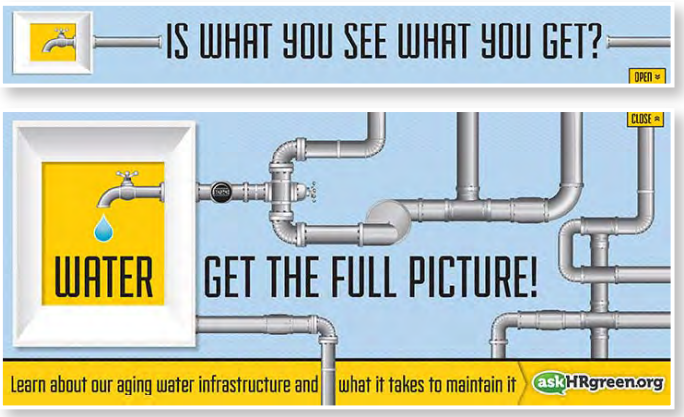
WATER AWARENESS SUBCOMMITTEE

The Water Awareness Subcommittee is an education committee comprised of local government staff members who are committed to promoting and educating citizens about the value of tap water and the importance of being good water stewards. This cooperative effort to promote conservation and awareness of the importance of water assists localities in meeting requirements of various water supply and ground water permits.

FOCAL AREA: *Sustainability*
TARGET AUDIENCE: *Adults; Age 25-54*

The Water Awareness Subcommittee ran a two-week media campaign focused on aging infrastructure and sustainability from December 2 to December 15. The campaign encouraged people to learn more about the three public water systems and the expensive processes and maintenance that go into delivering clean tap water in Hampton Roads. The campaign included banner displays on pilotonline.com and dailypress.com, 60-second radio ads, and Facebook ads.

As added value for the paid media campaign, the Subcommittee also received bonus spots and sponsorships on 93.7 Bob FM and 1230 AM; online display and e-blasts from 106.9 The Fox and FM99; and an on-air interview on 106.9 The Fox.



Sustainability	
Paid Media (2 weeks)	
Radio	
Impressions	657,200
Reach	34.9%
Frequency	2.9
Online Newspaper (The Virginian-Pilot & Daily Press)	
Impressions	221,192
Clicks	208
CTR (Click Through Rate)	0.09%
Facebook	
Impressions	387,006
Clicks	1,707
CTR (Click Through Rate)	0.44%
Unpaid Media	
Added Value	$6,631
Added Value Impressions	10,948
Overall Campaign	
Total Impressions	1,276,346
Total Budget	$12,984
Total Exposure Value	$19,615
Return on Investment	1.51: 1
Cost per Thousand Impressions	$10.17

FOCAL AREA: *Fix a Leak Week*
TARGET AUDIENCE: *Adults; Age 18-49*

In celebration of the sixth annual National Fix a Leak week, the Subcommittee ran a two-week paid media campaign including banner display ads on pilotonline.com and dailypress.com, 60-second radio ads, and Facebook ads. The campaign, which ran from March 10 to March 23, called attention to the fact that Hampton Roads residents can save water and money by correcting leaks in sinks, lines, and toilets with inexpensive and simple repairs.

As added value for the paid media campaign, the Subcommittee also received bonus ads and sponsorship on MAX Media and Saga Communications as well as online display from Saga Communications, Max Media, 92.3 The Tide and Entercom and concert sponsorship on Sinclair Communications.

Fix a Leak Week	
Paid Media (2 weeks)	
Radio	
Impressions	1,084,200
Reach	49.3%
Frequency	3.1
Online Newspaper (The Virginian-Pilot & Daily Press)	
Impressions	235,064
Clicks	281
CTR (Click Through Rate)	0.12%
Facebook	
Impressions	191,150
Clicks	1,603
CTR (Click Through Rate)	0.84%
Unpaid Media	
Added Value	$5,783
Added Value Impressions	28,462
Overall Campaign	
Total Impressions	1,538,876
Total Budget	$12,991
Total Exposure Value	$18,774
Return on Investment	1.45 : 1
Cost per Thousand Impressions	$8.44

FOCAL AREA: *Lawn Care/Outdoor Watering*
TARGET AUDIENCE: *Adults; Age 35-64*

The Water Awareness Subcommittee partnered with the Stormwater Education Subcommittee to promote smart spring lawn care and outdoor watering practices in FY14. The two-week campaign (March 24 through April 6) instructed Hampton Roads residents to work smarter, not harder when it comes to having a great outdoor landscape. The messages highlighted by this campaign included planting native/drought tolerant plants, using mulch and compost in flowerbeds, installing rain barrels, properly adjusting sprinklers away from paved areas, and watering in the morning. The campaign included banner displays on pilotonline.com and dailypress.com, 60-second radio ads, and Facebook ads.

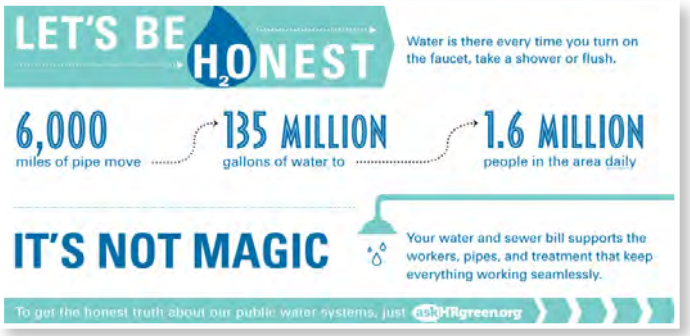
As added value for the paid media campaign, the Subcommittees also received commercial-free music hour sponsorship from Max Media; bonus spots and online display on Saga Communications, Max Media and 92.3 The Tide; e-blast from Saga Communications; bonus 15-second spots on Entercom stations; and the March Mayhem Tournament Challenge Regional Sponsorship including 25 live promotional announcements, sponsor logo, e-blasts, and social media posts with 3 mentions per day during tournament play (March 17-April 6).

Lawn Care/Outdoor Watering	
Paid Media (2 weeks)	
Radio	
Impressions	1,116,560
Reach	47.2%
Frequency	3.8
Online Newspaper (The Virginian-Pilot & Daily Press)	
Impressions	252,915
Clicks	216
CTR (Click Through Rate)	0.09%
Facebook	
Impressions	260,419
Clicks	1,718
CTR (Click Through Rate)	0.66%
Unpaid Media	
Added Value	$8,663
Added Value Impressions	19,395
Overall Campaign	
Total Impressions	1,649,289
Total Budget (split between 2 committees)	$15,000
Total Exposure Value	$23,663
Return on Investment	1.58 : 1
Cost per Thousand Impressions	$9.09

FOCAL AREA: *Infrastructure*
TARGET AUDIENCE: *Adults; Age 25-54*

The Water Awareness Subcommittee partnered with the Fats, Oils and Grease Education Subcommittee on a joint media campaign in the spring of 2014. Messaging highlighted the "honest truth" about how our public water systems work and the cost of maintenance that is required to keep it all running smoothly. The campaign, which ran from April 21 to May 5, included banner display ads on pilotonline.com and dailypress.com, 60-second radio ads, and Facebook ads.

As added value for the paid media campaign, the Subcommittees also received bonus spots, sponsorships, and/or online display from Entercom, Max Media, Saga Communications and 92.3 The Tide; e-blasts from Saga; and concert sponsorship from Sinclair Communications.



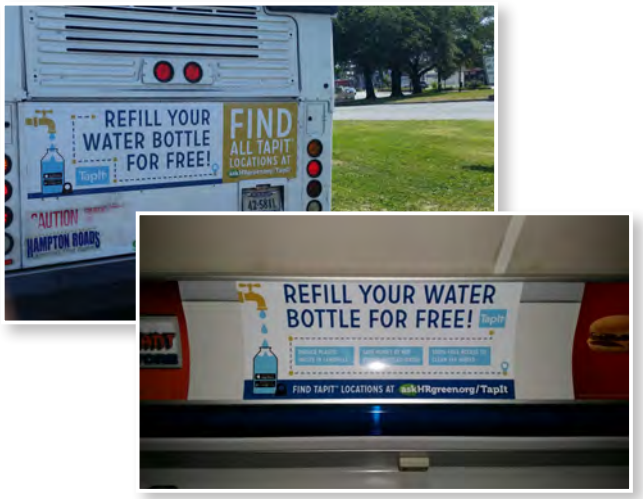
Infrastructure	
Paid Media (2 weeks)	
Radio	
Impressions	830,740
Reach	44.5%
Frequency	2.9
Online Newspaper (The Virginian-Pilot & Daily Press)	
Impressions	176,091
Clicks	118
CTR (Click Through Rate)	0.07%
Facebook	
Impressions	297,218
Clicks	1,574
CTR (Click Through Rate)	0.53%
Unpaid Media	
Added Value	$6,359
Added Value Impressions	20,3002
Overall Campaign	
Total Impressions	1,324,351
Total Budget (split between 2 committees)	$10,000
Total Exposure Value	$16,359
Return on Investment	1.64 : 1
Cost per Thousand Impressions	$7.55

FOCAL AREA: *TapIt App Launch*
TARGET AUDIENCE: *Adults; Age 18-49*

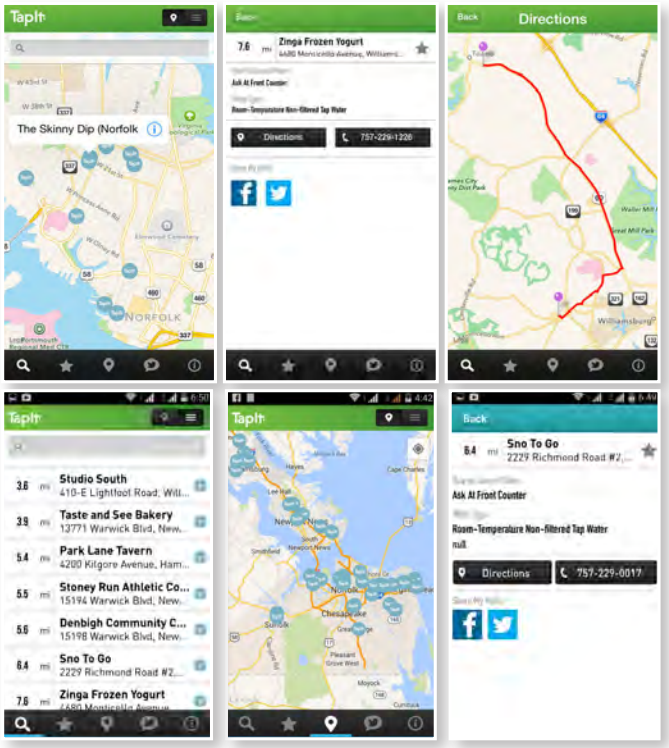
In FY14, the Water Awareness Subcommittee continued promoting the wise choice of tap over bottled water to residents of Hampton Roads with the development of the TapIt App for Android and Apple devices. The new, free app was developed to make it even easier for people in Hampton Roads to find free tap water at a participating TapIt partner location or at a municipal water fountain.

The four-week media campaign covered the entire month of June and included banner displays on pilotonline.com and dailypress.com, 60-second radio ads, Facebook ads, and for the first time, HRT bus ads. For the transit campaign, ads were purchased for a total of 48 buses. During the TapIt App campaign, website visitation was the highest it has ever been since the launch of the askHRgreen.org site with nearly 8,000 visitors in one month.

As added value for the paid media campaign, the Subcommittee also received interior banner ads in each bus; radio sponsorships, bonus spots and/or online display from Max Media, 92.3 The Tide, Saga Communications and Entercom; e-blast from Saga Communications; and an additional two weeks of transit exposure.



TapIt App Launch	
Paid Media (4 weeks)	
Radio	
Impressions	1,162,200
Reach	50.7%
Frequency	2.8
Online Newspaper (The Virginian-Pilot & Daily Press)	
Impressions	721,965
Clicks	790
CTR (Click Through Rate)	0.11%
Facebook	
Impressions	288,215
Clicks	5,652
CTR (Click Through Rate)	1.96%
Transit (48 buses)	
Impressions	703,125
Reach	25%
Unpaid Media	
Added Value	$14,265
Added Value Impressions	250,753
Overall Campaign	
Total Impressions	3,126,258
Total Budget	$29,903
Total Exposure Value	$44,168
Return on Investment	1.48 : 1
Cost per Thousand Impressions	$9.57
TapIt App Downloads	
iTunes	216
Google Play	314



FATS, OILS AND GREASE EDUCATION SUBCOMMITTEE

The Fats, Oils and Grease (FOG) Education Subcommittee is a coalition of local government staff members and HRSD working together to share ideas and pool resources for various education programs tailored to preventing sanitary sewer overflows and backups caused by improper disposal of fats, oils and grease. This cooperative effort has been underway since 2007 when 13 of the region's localities and HRSD entered into the Regional Special Order by Consent with the Virginia Department of Environmental Quality.

FOCAL AREA: *Proper Fats, Oils and Grease Disposal*
TARGET AUDIENCE: *Adults; Age 35-64*

The FOG Education Subcommittee encouraged Hampton Roads residents to use kitchen best management practices during all their holiday cooking. The holiday-themed promotion ran from November 23 to November 30 and advised the public about the dangers fats, oils and grease associated with holiday cooking can cause when put down the drain. The one-week campaign included banner display ads on pilotonline.com and dailypress.com, 60-second radio ads, and Facebook ads.

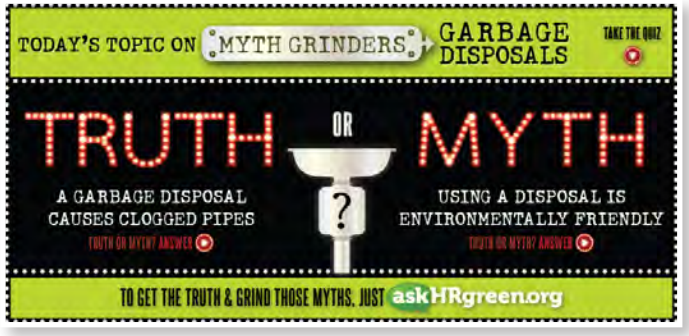
As added value for the paid campaign, the Subcommittee also received e-blasts from Eagle 97.3 and 106.9 The Fox; bonus spots and sponsorship from 92.9 The Wave, 92.3 The Tide, and STAR 1310 AM; and online display from 92.3 The Tide and 106.9 The Fox.

Fats, Oils & Grease Disposal - Holiday Theme	
Paid Media (1 week)	
Radio	
Impressions	380,340
Reach	28.3%
Frequency	2.2
Online Newspaper (The Virginian-Pilot & Daily Press)	
Impressions	75,252
Clicks	136
CTR (Click Through Rate)	0.18%
Facebook	
Impressions	70,490
Clicks	1,241
CTR (Click Through Rate)	1.76%
Unpaid Media	
Added Value	$3,506
Added Value Impressions	5,080
Overall Campaign	
Total Impressions	531,162
Total Budget	$5,520
Total Exposure Value	$9,026
Return on Investment	1.64 : 1
Cost per Thousand Impressions	$10.39

FOCAL AREA: *What Not to Flush*
TARGET AUDIENCE: *Women; Age 25-54*

The Subcommittee launched a brand new campaign in FY14 to eduacate Hampton Roads residents about what not to flush. People often use their toilet as a trash can not realizing the damage done to sanitary sewer lines, which are only designed to transport toilet paper and human waste. This creative "It Came From Beneath The Streets" one-week campaign ran from February 3 to February 9 and included banner displays on pilotonline.com and dailypress.com, 60-second radio ads, and Facebook ads.

As added value for the paid campaign, the Subcommittee also received bonus spots with Entercom and Max Media and online display from Entercom, Max Media and 92.3 The Tide.



What Not To Flush	
Paid Media (1 week)	
Radio	
Impressions	259,000
Reach	30.7%
Frequency	2.5
Online Newspaper (The Virginian-Pilot & Daily Press)	
Impressions	155,999
Clicks	205
CTR (Click Through Rate)	0.13%
Facebook	
Impressions	140,253
Clicks	993
CTR (Click Through Rate)	0.71%
Unpaid Media	
Added Value	$2,107
Added Value Impressions	14,364
Overall Campaign	
Total Impressions	569,616
Total Budget	$5,503
Total Exposure Value	$7,610
Return on Investment	1.38 : 1
Cost per Thousand Impressions	$9.66

Garbage Disposal "Myth Grinders"	
Paid Media (1 week)	
Radio	
Impressions	403,900
Reach	27.4%
Frequency	2.4
Online Newspaper (The Virginian-Pilot & Daily Press)	
Impressions	85,808
Clicks	99
CTR (Click Through Rate)	0.12%
Facebook	
Impressions	81,359
Clicks	1,845
CTR (Click Through Rate)	2.3%
Unpaid Media	
Added Value	$4,302
Added Value Impressions	14,993
Overall Campaign	
Total Impressions	586,060
Total Budget	$5,503
Total Exposure Value	$9,805
Return on Investment	1.78 : 1
Cost per Thousand Impressions	$9.39

FOCAL AREA: *Garbage Disposals*
TARGET AUDIENCE: *Adults; Age 35-64*

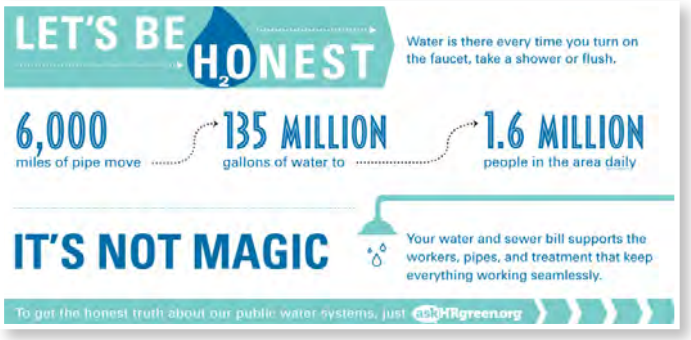
In FY14, the FOG Subcommittee continued to discourage Hampton Roads residents from using the garbage disposal because of the potential harm to wastewater infrastructure. The Myth Grinders campaign challenges the myth that garbage disposals are a harmless kitchen gadget with no negative environmental impacts. This one-week campaign ran from March 3 to March 9 and included banner displays on pilotonline.com and dailypress.com, 60-second radio ads, and Facebook ads.

As added value for the paid campaign, the Subcommittee also received bonus spots on Max Media, Saga Communications and 92.3 The Tide, and an e-blast from Saga Communications.

FOCAL AREA: *Infrastructure*
TARGET AUDIENCE: *Adults; Age 25-54*

The FOG Education Subcommittee partnered with the Water Awareness Subcommittee on a joint media campaign in the spring of 2014. Messaging highlighted the "honest truth" about how our public water systems work and the maintenance required to keep it all running smoothly. The campaign, which ran from April 21 to May 5, included banner display ads on pilotonline.com and dailypress.com, 60-second radio ads, and Facebook ads.

As added value for the paid media campaign, the Subcommittees also received bonus spots, sponsorships, and/or online display from Entercom, Max Media, Saga Communications and 92.3 The Tide; e-blasts from Saga; and concert sponsorship from Sinclair Communications.



Infrastructure	
Paid Media (2 weeks)	
Radio	
Impressions	830,740
Reach	44.5%
Frequency	2.9
Online Newspaper (The Virginian-Pilot & Daily Press)	
Impressions	176,091
Clicks	118
CTR (Click Through Rate)	0.07%
Facebook	
Impressions	297,218
Clicks	1,574
CTR (Click Through Rate)	0.53%
Unpaid Media	
Added Value	$6,359
Added Value Impressions	20,302
Overall Campaign	
Total Impressions	1,324,351
Total Budget (split between 2 committees)	$10,000
Total Exposure Value	$16,359
Return on Investment	1.64 : 1
Cost per Thousand Impressions	$7.55

FOCAL AREA: *Responsible Flushing & Household Disposal Methods*
TARGET AUDIENCE: *All Hampton Roads Residents*

The FOG Subcommittee developed a new "Down the Drain" brochure in FY14 that combined all wastewater education priorities into one document aimed at all residents of Hampton Roads, but especially those living in multi-family developments. The brochure illustrates how our regional infrastructure consists of the three public water systems (water, wastewater, and stormwater) each serving a separate and specific purpose. It also educates the reader about how actions affect these systems and what can be done to protect them. Specifically, the brochure highlights what not to flush down the toilet, the proper ways to dispose of fats, oils and grease when cooking in the kitchen, and how to responsibly dispose of household hazardous waste and medication to protect waterways. The Subcommittee printed 15,000 Down the Drain brochures to be handed out at various events and to residential and community groups across the region.

FOCAL AREA: *Fats, Oils and Grease Regional Training Program*
TARGET AUDIENCE: *Food Service Establishment Employees and Grease Haulers*

In FY14, the FOG Education Subcommittee evaluated the www.HRFOG.com website, which was launched in FY13 as a new online tool for regional FOG training and certification. Through the website, grease haulers and food service industry employees receive free training and certification on proper maintenance of grease control devices and the harmful effects of FOG on the region's sanitary sewer systems. The website helps locality staff manage, train and enforce the FOG ordinances present in some Hampton Roads municipalities.

In an effort to improve the functionality and ease of use of the website and its backend reporting feature, the Subcommittee recommended upgrades and updates to the site in FY14. In addition to the development changes, team members worked with local staff from the City of Norfolk to produce a short video demonstrating the proper way to clean and maintain small grease control devices. The video can now be viewed directly through the HRFOG.com website as well as on YouTube.com/HRGreenVA.

added value
Earned but unpaid advertising value.

average position
A ranking system that determines where your search engine marketing ad will display on a web search results page (i.e. top of page v. bottom of page).

bounce rate
The percentage of visitors who enter the site and "bounce" (leave the site) rather than continue viewing other pages within the same site.

click through rate (CTR)
A way of measuring online advertising. The CTR of an advertisement is defined as the number of clicks on an ad divided by its impressions, expressed as a percentage.

cost-per-click (CPC)
The cost associated with a person clicking on a display ad in search engine marketing.

exposure value
The combination of advertising cost, added value, and public relations value.

frequency
The number of times an individual (among the target audience) is exposed to the message.

impressions
The number of times an advertisement or public relations placement can be seen or heard by an audience.

public relations value
The equivalent advertising cost of a public relations article, interview, internet placement, etc. times three. Because a public relations placement has a higher value with an audience than advertising, it is assigned a higher value.

reach
The number or percentage of people within the target audience who are exposed to an advertising message at least once over a specific period of time.

search engine marketing (SEM)
The process of attracting traffic to a website from search engine results pages on a pay-per-click basis.

search engine marketing (SEO)
The process of improving the quality of a website so that it appears higher in natural ("organic") search results.

unique visitors (users)
The number of people who visit a website within a specific period of time. If they visit more than one time within the period, their initial visit as well as their subsequent visits are counted as sessions. A user may have one session or multiple sessions.

askHRgreen.org

/askHRgreen /HRgreen

ADVERTISING SUPPLEMENT TO THE VIRGINIAN-PILOT

YOUR GUIDE TO EVERYTHING GREEN IN HAMPTON ROADS

GREEN LIVING

spring 2014

Teaching Kids to be Green

Making your Home a **River Star**

Project **Plant It!**

Improving our **Stormwater Systems**

It's Easy Being Green

BY BERNADETTE KINLAW

The first and best lesson to learn about green living is that you can achieve big results with small, easy steps.

1. **Clean with cloth instead of paper towels.**
2. **Use energy-efficient light bulbs and appliances.**
3. **Take reusable shopping bags with you to the supermarket.**
4. **Grow your own herbs.**
5. **Stop buying plastic bottles. Drink from reusable ones.**
6. **Open the blinds so that the sun can shine in.**
7. **Do all your errands at once to save on gas.**
8. **Shop at your local farmers market.**
9. **Pay bills online to save paper.**
10. **Wash clothes in cold water, not hot. Dry your laundry outside when the weather cooperates.**

That list of 10 is just the beginning. In this annual Green Living publication, we're back to show you how to be gentle to our environment.

This time around, our stories focus on your home and garden.

Victoria Hecht tells us how to get kids started down the path to protecting the planet.

The people from askhrgreen.org provide dozens of steps you can take to reduce your harm to the Earth at home and in the garden.

Project Plant it! is here to give kids the chance to beautify their surroundings.

Julia B. Hillegass from the Hampton Roads Planning District Commission fills us in on what's being done to make our sewer systems more efficient.

And Sara Felker of the Elizabeth River Project details how to make your dwelling a River Star Home to help protect the river.

No one says you need to stop there. Want to help out in the community too? Like lots of other communities, Hampton Roads is right in the middle of the Great American Cleanup. In Virginia Beach, you can celebrate Earth Day. In Norfolk, you can attend RiverFest. In Hampton, you can learn about rain barrels.

For these events and more, go to askhrgreen.org/the-great-american-cleanup-2014.

Remember that none of this is difficult. You just need to take the first step.

Sources: The Art of Simple, U.S. Environmental Protection Agency, askHRgreen.org

THERE ARE SO MANY MYTHS ABOUT GREEN LIVING.

WANT MORE TRUTH ??
JUST VISIT askHRgreen.org

MYTH
TRUTH

"BEING GREEN IS HARD AND EXPENSIVE. BESIDES, I'M JUST ONE PERSON."

There are 1.6 million people in Hampton Roads and if we each did a little, it would add up to a lot. The truth is that there are plenty of easy ways to go green that are equally easy on the wallet.

MYTH
TRUTH

"I DON'T NEED TO SCOOP THE POOP...IT'S 'NATURAL'."

Rainwater carries nitrogen and bacteria from pet waste into our local waterways, making our water a cloudy, green, foul-smelling mess that lacks oxygen. This pollution causes aquatic dead zones, beach closures, fishing restrictions, and warnings on local seafood.

MYTH
TRUTH

"THOSE 'FLUSHABLE' WIPES ARE SAFE TO FLUSH."

Products marketed as "flushable" are regularly found in clogged pipes and broken pumps throughout the sanitary sewer system. Only toilet paper, water, and human waste should be flushed down the toilet. Other items like tissues, paper towels, wipes, feminine hygiene products, and food scraps are all known to clog the lines and pumps of the sanitary sewer system.

MYTH
TRUTH

"MY LAWN NEEDS FERTILIZER EVERY SPRING."

Fertilize out of necessity, not habit. A soil test will tell you specifically what your lawn needs so you can make the right decisions. Fertilize naturally by leaving grass clippings on your lawn.

MYTH
TRUTH

"THE GARBAGE DISPOSAL IS A GOOD WAY TO GET RID OF SCRAPS."

Garbage disposals only break food scraps apart into smaller pieces which wash down the drain and cling to pipe walls. A buildup of gunk over time can cause blockages and sewer backups. It's always safer to put food scraps in a compost bin or trash can.

MYTH
TRUTH

"BOTTLED WATER IS BETTER THAN TAP."

Tap water is clean, safe, convenient, and affordable. Hampton Roads drinking water is continuously tested and always meets or exceeds EPA standards for safe drinking water. Price conscious? You can fill 1,500 glasses of tap water for about the price of a single bottle of water.

MYTH
TRUTH

"CONSERVING WATER MEANS DOING WITHOUT."

Using water wisely means not being wasteful. Turn off the faucet when brushing your teeth, take shorter showers, fix leaky toilets and faucets, and water properly and at the right time of day. You won't miss a drop, and you'll be a good steward of our most precious resource, water.

Teach Them Well

AND THEY'LL LEAD THE WAY

BY VICTORIA HECHT

Nina Dysvick wasn't born until a decade after the first Earth Day in 1970 galvanized 20 million Americans to rally for clean lands and waterways.

By the 20th anniversary, when the observance went global with 200 million people raising their support for a healthy environment, Dysvick was a young girl unaware of the movement, though her family did employ one "green" practice – for the money savings, not eco-consciousness.

"We didn't even recycle – there was no such thing where we lived," Dysvick said. "I do remember, though, that we didn't use a lot of plastic bottles." (That's because her grandmother canned foods, so every glass jar and bottle was rinsed and reused for that purpose, she said.)

Today, though, the Norfolk woman is determined that daughters Tessa, 13, and Kaycee, 5, respect the Earth and their impact on it.

After becoming a mother, Dysvick said, her concern turned not only to her children, but the planet they'll inherit. She began by reusing old gift cards, cereal boxes, tape rolls and "anything that could have glue and paper stuck to them" for their crafts and projects. Eventually, the family began eschewing plastic bottles, preservative-packed foods and commercial cleaning products in favor of more natural foods and homemade personal-care and cleaning products that use simple ingredients, including vinegar, baking soda, essential oils, citrus peel and Fels Naptha soap. Tessa and Kaycee sometimes help their mom mix the cleaning and personal-care items.

"And all of the glass bottles I use for these things are previously 'loved,'" said Dysvick, who uses the eco-friendly cleaning products not only at home, but in her business, Happy Hearts Cleaning.

Conservation can be taught to children early, said Katie Cullipher, senior environmental education planner for the Hampton Roads Planning District Commission, the organization behind askHRgreen.org, an environmental-stewardship public awareness program and website for the 16 cities and counties served by the commission.

Water consumption is a good place to begin.

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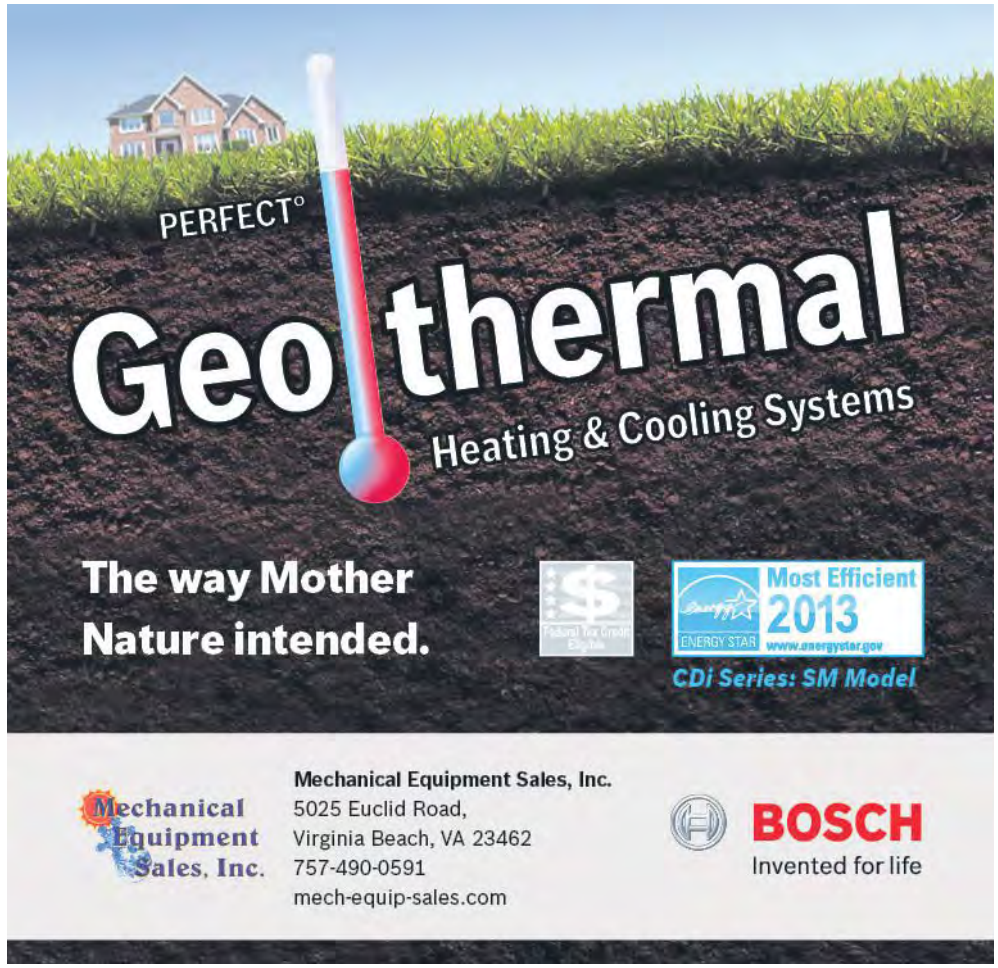


"Teach kids to take short showers right from the start," Cullipher said. "After all, if they never get used to taking long showers, they won't have to unlearn bad habits."

Also, she said instruct kids to turn off the faucet while brushing teeth.

Cullipher and Rebekah Eastep, the commission's environmental planner, offered five ideas for raising eco-forward-thinking kids:

Lead by example. – "It's much easier to practice good habits and lead by example than to explain the negative consequences of bad habits," Eastep said.

Get to know the outdoors. – Take children for walks and camping trips, or to visit zoos and aquariums. "If they've never been able to connect with nature in some way, how can they be expected to care about protecting it?" Cullipher said.

Reuse. Then reuse some more. – The Dysvicks have it right by reusing things that others might consider garbage. For example, for easy organizers they cover old boxes with pretty paper rather than buying new plastic bins and totes. And askHRgreen.org suggests reusable bottles for drinks as opposed to disposal water bottles and juice boxes.

"Recycle more, trash less." – Strive to recycle everything possible – and make sure children know what may and may not be recycled, Eastep said.

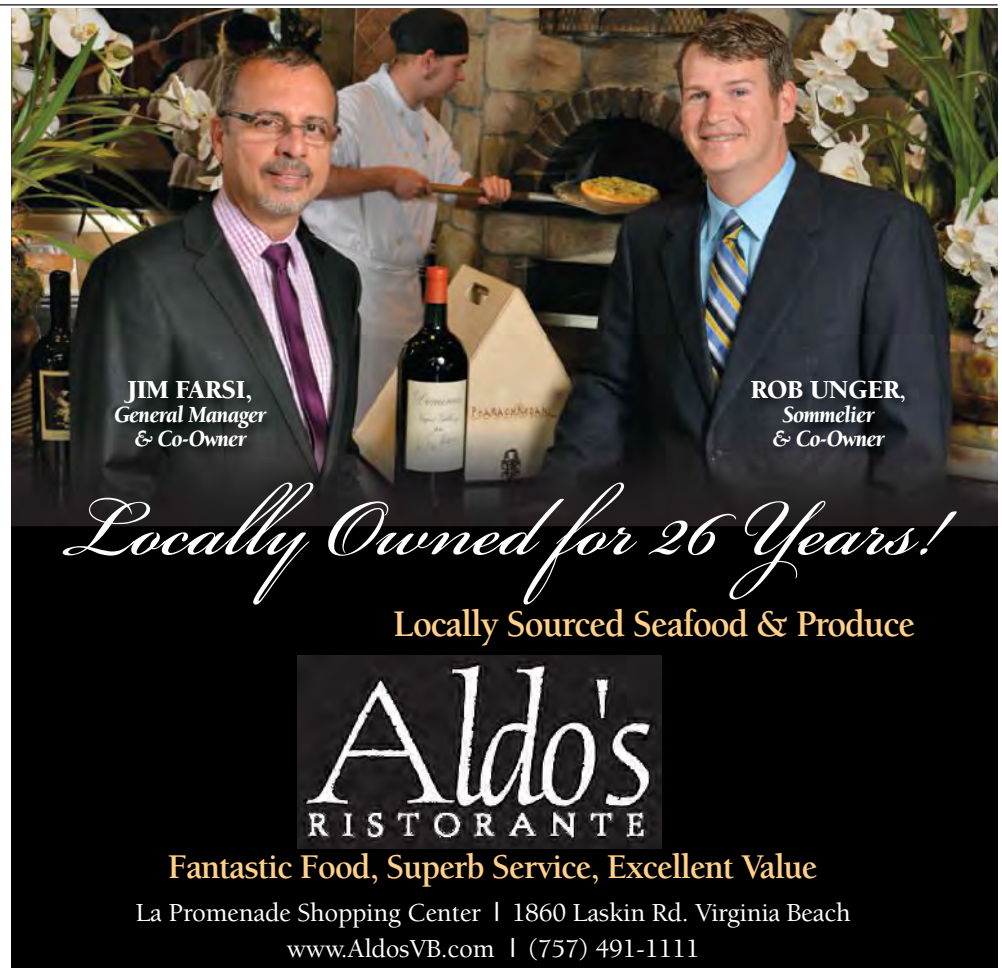
Lessen your impact on the Earth by reducing first. – Children should understand that turning off lights when leaving a room helps save resources that produce electricity, or that carpooling conserves gas.

Dysvick said she'd like to up her family's green quotient by canning foods, like her grandmother did. And she eventually wants to compost and garden, neither of which the family has been able to do because an apartment building is home for now.

Despite these inabilities, Dysvick's happy with the family's green living accomplished thus far and the impression it has made on her girls.

"We want the world to be around when we grow up," Tessa, a seventh-grader, said.

Victoria Hecht, victoriahecht1@gmail.com



What You Can Do

In Your Yard

TEST BEFORE FERTILIZING

Soil testing tells you exactly what your lawn needs so you don't waste time or money overfeeding and damaging your lawn. When it rains, excess fertilizer travels to storm drains and directly into local waterways, threatening water quality and aquatic life.

- Have your soil tested every three or four years.
- If the soil test shows your lawn does need fertilizer, check the weather first to make sure rain isn't in the two-day forecast.
- Keep fertilizer off paved surfaces, and never apply it to driveways, sidewalks or roadways.

MOW PROPERLY

How you mow can affect the health of your lawn. Tall grass encourages deep roots and shades out some weeds. Knowing the proper technique is not only good for the environment, but good for curb appeal.

- Mow at the proper height. Newly seeded lawns should be mowed early and often, leaving 1.5 to 2.0 inches of grass height. Once your lawn is established, set the mower blade at the highest setting, leaving 2 to 3.5 inches of grass.
- Leave grass clippings on your lawn to help break down and return nitrogen to the soil.

WATER WISELY

You can still enjoy an attractive yard while being a good water steward. It just takes a little planning.

- Water early in the day when it is cooler and less water is lost to evaporation.
- Adjust sprinklers to avoid watering driveways, sidewalks and streets.
- Install a rain barrel to collect and reuse rain water.

PLANT NATIVE PLANTS

Native plants have adapted to our climate and therefore have lower water requirements, fewer pest problems and need less fertilizer than non-native plants.

In Your Community

GET INVOLVED

Small actions can have a great impact. There are plenty of ways to improve your community. You just have to find the one that's right for you.

- Join a community clean-up event and make it a family affair. The best way to encourage your kids to be good stewards of the environment is to lead by example.
- Get the whole neighborhood involved by organizing a neighborhood improvement day.
- Join the effort to mark storm drains in your community. Learn more about the askHRgreen Storm Drain Medallion program here: http://askhrgreen.org/storm-drain-medallion-program/

In Your Home

REDUCE & REUSE

Whenever possible, choose reusable over disposable options because the less we consume, the more we naturally conserve.

- Buy in bulk when possible to avoid excess packaging
- Grab a reusable bottle and fill it up at the tap instead of buying a case of bottled water
- Bring reusable bags with you on shopping trips

RECYCLE MORE, TRASH LESS

Recycling at home is one of the easiest ways to do something good for the environment. It creates jobs, saves resources, reduces landfills and conserves energy. Recycling is a no-brainer, but it is important to know what can and can't be tossed in the bin. Acceptable items include:

- Paper and paper products (newspaper, office paper, junk mail, flattened cardboard boxes, phone books, etc.)
- Plastic bottles with #1 or #2 on the bottom (empty one-gallon milk jugs, juice bottles, soda bottles, laundry detergent bottles, salad dressing and vegetable oil containers, etc.)
- Glass bottles/jars (empty)
- Steel, tin and aluminum (clean cans, foil, pie plates, etc.)

BE WATER WISE

Water is essential to our everyday lives. You can conserve in small ways that make a big difference to preserve and protect our planet.

- Find and fix leaks
- Replace old fixtures with low-flow devices (look for the WaterSense label)
- Take shorter showers
- Turn off the water when brushing teeth or shaving
- Only do full loads in the dishwasher and washing machine

FLUSH RESPONSIBLY

Only dispose of human waste and toilet paper in the toilet. Anything else can cause damage to your plumbing or further down the line as wastewater makes its way to a treatment facility. Never flush the following:

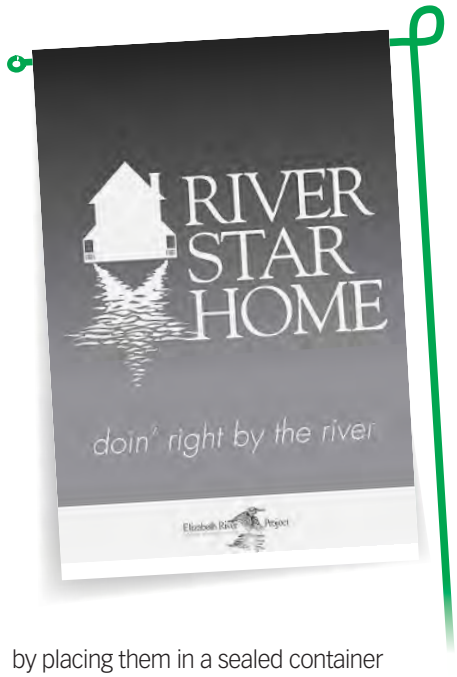
- Paper towels, wipes, cotton swabs, dental floss, feminine hygiene products, diapers

CEASE THE GREASE

When poured or washed down the drain, food particles, fats, oils and grease from cooking build up on pipe walls leading to blockages that can result in overflows into our homes or onto our streets and down storm drains. You can protect your pipes and our local waterways by practicing these tips in the kitchen:

- Skip the garbage disposal. Use a strainer in your sink drain to catch food particles and throw the scraps collected into the trash or compost bin.
- Wipe pots, pans, and cooking utensils before washing.
- Pour used cooking grease into an empty, heat-safe container like a soup can. Freeze and toss it out with the garbage.

Elizabeth River Project



7 easy ways to make your home a RIVER STAR

BY SARA FELKER

Just how blue is your green thumb? If you're like many in Hampton Roads, April finds you outside preparing your lawn and gardens for warmer weather.

But while you focus on the green, don't forget about the blue—river that is.

In 2011, the Elizabeth River Project created an free program for homeowners called River Star Homes.

This group of almost 2,000 homes is growing quickly and is dedicated to making the Elizabeth River safe for swimming and eating oysters once again.

When you sign up to be a River Star, you get a yard flag to display, invitations to events and outings, and advice on creating a river-friendly home. You may even win a kayak if you sign up or renew your pledge at our booth at this year's RiverFest on April 26.

For homeowners in the Lafayette and Eastern Branches of the river, we can also help with funding for river-friendly projects such as rain barrels, rain gardens, shoreline buffers and river-friendly lawn care, which includes a free consultation with a lawn care specialist.

The River Star Homes program is free and open to all homes within the Elizabeth River watershed. You don't have to live on the water. Just agree to these seven easy practices:

1. "Scoop the poop" after our dogs. When pet waste washes into the river, bacteria levels make swimming unsafe. Before a rain storm, pick up dog poop and place it into a sealed bag in your trash can. Look for "Scoop the Poop" stations throughout Hampton Roads.

2. Protect storm drains from grass clippings, leaves and oil. Storm drains lead to the river, and even leaves add excess nutrients that harm river life.

3. Help geese migrate – don't feed them! Overpopulations of Canada geese mean too much poop in the river and unsafe swimming. Geese prefer manicured lawns, so keep them away by planting native trees and shrubs along your shoreline. If you live in near the Lafayette River, your shoreline planting may be eligible for funding.

4. Don't flush medicines. Treatment facilities can't remove medicines from sewage. Keep them out of the river by placing them in a sealed container and throwing them in the trash. Many pharmacies will also take back and properly dispose of medicines.

5. No grease in the sink. Pouring fats, oils and grease down the kitchen sink can clog drains, leading to sewer overflows and raw sewage in the river. Instead, place your

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grease in a sealed container and allow it to cool and harden then throw it in the trash. Hampton Roads Sanitation District (HRSD) and local cities are doing their part by replacing aging sewer lines. Make sure you do your part at home!

6. Pump out boat sewage at proper facilities. When boats dump directly into the river, it adds to unswimmable conditions. Call HRSD at 460-4253 for a free pump-out of your boat's holding tank.

7. Reduce fertilizers on our lawns. Excess fertilizer washes into the river, where it can lead to algae blooms that choke river life.

Reducing your reliance on fertilizer will take some planning, but the result will be a healthier lawn that costs less to maintain and doesn't cause harmful algal blooms.

Before fertilizing, test your soil to see what additional nutrients your lawn needs, if any. A typical soil test costs about $10 and will give you recommendations on nutrients such as phosphorus, potassium, calcium and magnesium.

The Virginia extension agency and A & L Labs both provide this service.

You can find sample forms online at aleastern.com or soiltest.vt.edu.

If you need compost, it's available from many nurseries, including Four Seasons (716-1310), New Earth Farm (427-6515) and Jack Frost (368-4477).

Mow high, let it lie. You can further reduce your need for fertilizer and herbicides by setting your mower at 3" and leaving your grass clippings on your lawn. The tall grass can help shade out weeds, and the grass clippings will feed your lawn as they decay.

Want to learn more about the River Star Homes program? Visit our booth at RiverFest—a free, day-long celebration of the Lafayette River—from 10 a.m. to 4 p.m. Saturday, April 26, in the 600 and 700 blocks of Mayflower Road in Colonial Place. Pledge to follow the seven steps and you could win a kayak donated by Bass Pro Shop!

Sign up to be a River Star and see if you're eligible for special funding opportunities on our website at www. RiverStarHomes.org or by calling the Elizabeth River Project at 399-7487.

Sara Felker is the River Star Homes Program Manager and accredited organic land care provider.

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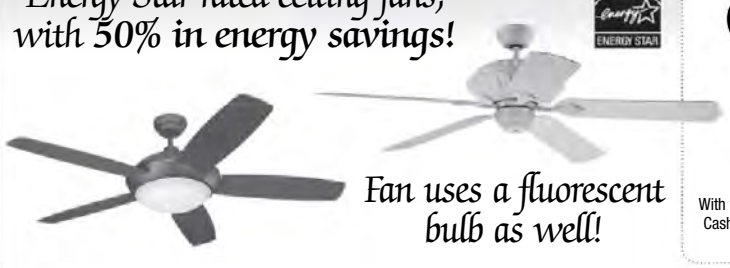

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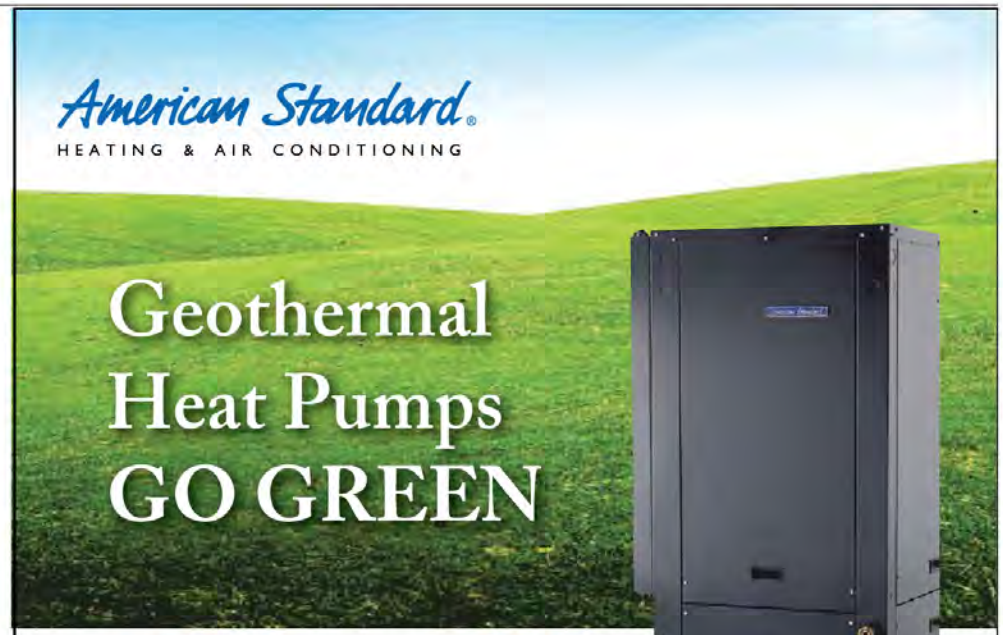

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Project Plant It!

Dominion inspires young tree-planters.

BY SARA HUNT

This spring, thousands of future arborists are learning about trees and how they benefit the environment with Dominion's Project Plant It! program.

Many elementary students in South Hampton Roads and the Peninsula will participate in the free program geared towards children who are bursting with curiosity about the natural world. Project Plant It! provides educational activities, both inside the classroom and outdoors, for students to learn more about one of Mother Nature's most versatile inhabitants.

In fact, trees are the ultimate multi-taskers:

They make oxygen and clean air, provide shelter for birds and wildlife, prevent soil erosion and can be strategically planted to help reduce heating and cooling costs.

The cornerstone of the program is the distribution of a redbud tree seedling to each student participating to plant in honor of Arbor Day, which is typically the last Friday in April.

"The redbud is native to Virginia and grows well throughout the state," said Paulin Cheatham, Project Plant It! spokesman for Dominion, the parent company of Dominion Virginia Power. "It is one of the first trees to bloom in the spring and is easily identified by its beautiful pink blossoms and distinctive red-tinged leaves."

"Each and every year, Project Plant It! continues to effectively engage students by connecting them with nature," said Jo McElwain of the Arbor Day Foundation. "Project Plant It! puts Eastern Redbud trees into the hands of the next generation of tree-planters who will always cherish the memory of planting a tree and watching it grow."

The Arbor Day Foundation, which inspires people to plant, nurture and celebrate trees, has partnered with Dominion's Project Plant It! since the program was established in 2007. This organization is responsible for planting, growing, packaging and shipping the more than 250,000 tree seedlings that have been distributed to students in several states where Dominion conducts business.

The website, www.projectplantit.com, features videos and interactive games about trees.

For more information, visit the website or "Like" Project Plant It! on Facebook.

Sara Hunt is the Public Relations Director for Touch Points.

Waste Away

A systematic approach aims to protect the environment.

BY JULIA B. HILLEGASS

Recent sewer consolidation efforts and the Virginia Stormwater Management Act are two key developments that, in the long run, will benefit both the environment and our localities. The sanitary sewer and stormwater systems aren't sexy topics, but their effect on water quality where we live, work and play on the water are important.

Hampton Roads localities recently formed an enhanced partnership with the Hampton Roads Sanitation District that will improve the sanitary sewer system. That system takes water from our homes when we flush the commode, shower or run water down the drains. The improvements streamline maintenance and make economic sense. The full consolidation of the region's sanitary sewer system assets and operations will save the region nearly $1 billion over the next 30 years. HRSD, the wastewater treatment utility serving 17 cities and counties in southeast Virginia, will pursue a regional approach to satisfy federal and state mandates to reduce sanitary sewer overflows caused by wet weather.

Local governments own and operate the network of pipelines and pump stations that collect wastewater from homes and businesses. These flows are carried through large pipes owned by HRSD to its treatment plants, where the wastewater is treated so it can be safely returned to local waterways. Monitoring has shown where the most rainwater enters each system. Rather than requiring each locality to perform costly work on its system, a regional approach will allow HRSD to replace local pipelines to let in the most extra water. This will reduce the amount of pipeline work required and focus spending in areas that need the most help.

Also, sanitary sewer system improvements in the past several years have reduced the number of sanitary sewer overflows. Such overflows may reach waterways, introducing raw sewage into rivers, streams and bays. In turn, this can harm aquatic life and close beaches.

The other drains to maintain are storm drains, which carry rainwater from our homes and streets through curbside stormwater openings and street grates. Unlike the sanitary sewage system, stormwater runoff isn't treated and flows directly to our rivers, streams and bays. Everything we do every day affects stormwater—walking our pets, caring for lawns and gardens, cleaning the house, maintaining vehicles and shopping.

Localities have long been working to improve water quality. That pond in your subdivision was likely put there to collect stormwater runoff and allow nutrient-laden sediment to settle to the bottom, while the cleaner rainwater is released into the nearest natural water body.

We are fortunate to be surrounded by an incredible array of natural resources. Our job is to take care of them as best we can by making small, but cumulative, choices. Learn more ways to make easy, significant changes at askHRgreen.org.

Julia B. Hillegass is the public information and community affairs administrator for the Hampton Roads Planning District Commission and askHRgreen.org team leader.

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Virginia Cooperative Extension
Virginia Tech • Virginia State University

TITLE: Turf Love/Garden Love Programs (End of FY 14)

RELEVENCE: The Turf Love Program seeks to mitigate damage to the James City County watershed by educating citizens and commercial organizations on sound nutrient management practices for their turf areas. In addition, the Program outlines measures to conserve precious water when caring for lawns. The goal is adherence to the instructions, thereby preserving James City County's delicate watershed and preventing damage to the Chesapeake Bay. The Turf Love Program is the primary vehicle by which James City County is credited for acres protected in the Chesapeake Bay model. The Garden Love Program began in FY 13 and seeks to decrease stormwater runoff by helping citizens install infiltrating rain gardens.

RESPONSE: During FY 14, the Program issued 101 nutrient management plans for residential turf areas. The residential plans cover 19.74 acres, and 41 percent of the properties lie in or near Resource Protection Areas (RPA). "Commercial" plans include business and county properties. Commercial properties (generally golf courses and neighborhood common areas) represent increasing interest in responsible turf management and therefore more requests for plans. In FY 14, we completed 123 commercial nutrient management plans (one golf course, two developers, and one apartment complex). The plans cover 94.84 acres, 89.68 of which are in or near RPAs. At the County's request, in FY 11, we expanded our scope to include county schools and athletic fields; however, none were needed during FY 14. In terms of watershed areas affected by all nutrient management plans, Turf Love Program plans represent coverage in 16 hydrologic zones (zones which represent individual waterways feeding or affecting the Chesapeake Bay). The plans we issued affect 11 watersheds (Powhatan, Ware, College, Yarmouth, Gordon, Mill, Skimino, and Diascund Creeks, and the James, York, and Chickahominy Rivers).

"Lawn Rangers" (Turf Love volunteers) visit client properties, discuss turf practices, and take soil samples. During this period, they visited 320 homeowners. Through educational programs, Farmers' Markets, and other events for the public, we reached 448 persons about the Turf Love and Garden Love Programs.

We began the Garden Love Program in FY 13. Twenty rain gardens were completed in FY 13, and eight (1,494 square feet) more were completed in FY 14. They gather water runoff from 44,478 square feet of surface area.

RESULTS: In FY 14, the Turf Love Program issued 224 nutrient management plans to residential and commercial customers. Nutrient management plans use specific soil analyses from customer properties to develop custom, Virginia Tech research-based instructions on establishment and care of clients' turf. Our survey verified that clients are generally following the instructions and changing their turf care behavior. An example would be if the client now only fertilizes cool-season turf in the fall. If so, this significantly decreases nitrogen run-off into adjacent waterways in the spring when citizens misguidedly feel they should fertilize their lawns. Over half revealed that they had changed their lawn care fertilization to only fertilize in the fall. Almost 80 percent now either return their clippings to their lawns or compost them. This lessens our landfill impact and avoids runoff into storm drains as well as returning valuable organic

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matter to the soil. Three-fourths now water their lawns in the early morning hours and use less water than before. We are also noticing a statistical trend toward more drought-resistant warm-season lawns.

COLLABORATORS: In addition to the Virginia Cooperative Extension Office and Virginia Tech, the Turf Love Program works closely with the Virginia Department of Conservation and Recreation, James City County Service Authority, James City County Stormwater Department, and Colonial Soil and Water Conservation District. Salary funding for two part-time staff is shared by the James City County Service Authority and the James City County Stormwater Department. Through funding by the James City County Stormwater Division, we are collaborating on designing rain gardens.

CONTACT: Mrs. Doris Heath, Unit Coordinator, Virginia Cooperative Extension, James City County Office, 757-564-2170, dheath@vt.edu.

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Turf Love Program

No. of Nutrient Management Plans Issued:			**224**
Residential		101	
Commercial*		123	
(James City County/School Properties = 0**)			
Acres Covered by Nutrient Management Plans:			**114.58**
Residential		19.74	
Commercial		94.84	
(James City County/School Properties = 0)			
Acres in relation to RPA:			
In an RPA		80%	
Residential	5%		
Commercial	95%		
(James City County/School Properties = 0)			
Near an RPA		4%	
Residential	95%		
Commercial	5%		
(James City County/School Properties = 0)			
Not in or near an RPA		16%	
Residential	70%		
Commercial	30%		
(James City County/School Properties = 0)			
No. of Soil Tests Sent to VA Tech:			**188**
Turf Love Program:		188	
Residential	134		
Commercial	54		
(James City County/School Properties = 0)			
No. of Property Owners Contacted			**320**
Residential	315		
Commercial	5		
(James City County/School Properties = 0)			
General Contacts (may not be property owners):			**448**
(Farmers' Market, Super Turf Sat., Turf Love "University," Others)			

* 'Commercial' = non-residential property plus reports to developers

Garden Love Program

No. of Gardens	8
Gardeon Area (SF)	1,494
Surface Area (SF) Treated	44,478
Rebated	$7,800.46

OTHER GOOD RESOURCES

- A citizen's guide to the Chesapeake Bay TMDL
- A Clean, Healthy Bay Starts at Home
- A Virginian's Year-Round Guide to Yard Care
- Chesapeake Bay BayScapes
- Chesapeake Bay TMDL Fact Sheet
- Cigarette Litter Prevention
- Lawn Care Providers
- Living Shorelines for the Chesapeake Bay Watershed
- Native Plants to Hampton Roads
- Rain Barrel Basics
- Rain Garden Landscape Plans
- Rain Garden Plants
- Rain Gardens Technical Guide
- Virginia Institute of Marine Science Living Shorelines

STORMWATER CONTACT INFORMATION

For inquires related to flooding, stormwater or storm drains, or to report illegal dumping into the storm drain or street, please contact the stormwater representative from your locality at the number listed below.

Chesapeake (757) 382-3330

Franklin (757) 562-8564

Gloucester (804) 693-1217

Hampton (757) 727-8311

Isle of Wight County (757) 365-1658

James City County (757) 259-1460

Newport News(757) 926-8611

Norfolk (757) 823-4000

Portsmouth (757) 393-8666

Poquoson (757) 868-3025

Smithfield (757) 365-4200

Suffolk (757) 514-7725

Surry (757) 294-5271

Virginia Beach (757) 385-1470

Williamsburg (757) 220-6140

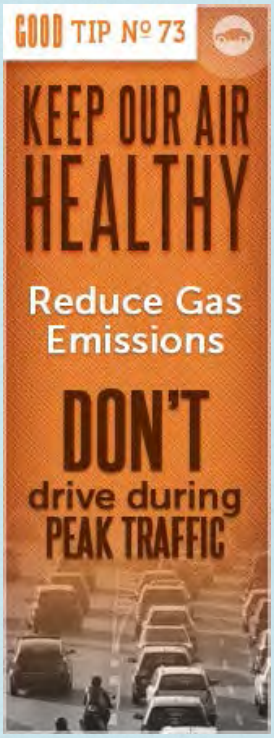
York County (757) 890-3750

Report a problem *Need more info?* *Share* *Email*

LOOKS LIKE FUN!

Household Chemical & Electronics Recycling - VPPSA
13 Sep 2014
Yorktown

Chesapeake



LET'S TALK GREEN | THE ASK HR GREEN BLOG

ARCHIVES

September 2014
August 2014
July 2014
June 2014
May 2014
April 2014

CATEGORIES

Beautification
Clean And Safe Tap Water
Community Events
Don't Litter!
Fats, Oils And Grease Disposal
For Educators
Gardening
Going Green
Holidays
Household Tips
HR Green Campaign Updates
Keeping Storm Drains Free
Lawn And Landscape
Lawncare
Outdoor Tips
Pets
Plastic Bags
Reduce Reuse And Recycle
Research
Service Learning
Using Water Wisely
Waterways

WE'RE TALKING GREEN HERE, FOLKS...

GET FREE WATER FOR OUTDOOR USE

Posted on May 16, 2014 by Guest Contributor | Comments Off

Just one inch of rainfall on 1,000 horizontal square feet of roof can result in 600 gallons of rainwater. Installing a rain barrel at your home is an easy, inexpensive way to collect that water for later use. Rain barrels collect and store roof water so that it can be used in place of tap water to:

- Water plants, gardens and lawns
- Wash pets, cars and patio furniture
- Fill fountains and birdbaths

Using rain water for outdoor chores will not only reduce your water bill, but will also have a positive effect on the environment. Rain barrels decrease the impact of stormwater runoff to streams which reduces the amount of pollution entering our waterways and minimizes sewer backups.

How does a rain barrel work? Rain barrels usually consist of a plastic storage container with lid, a system that diverts water into the barrel, an overflow that diverts excess water away from the house, a screen to keep out debris, and a water spigot to which a hose can attach. The rain barrel is connected into the downspout system, in order to capture and store a portion of the rain water produced by your roof.

Rainwater is ultimately better for your plants than tap water because it doesn't contain any of the chemicals used to make tap water safe and clean. Plants don't need sterilized water like humans. Natural rainwater is also soft and mildly acidic, so it helps plants grow and absorb important minerals from the soil.

Some localities offer rebates for the purchase and hookup of a rain barrel. Contact the stormwater contact in your municipality to learn what programs may be available to you or go to askhrgreen.org for everything you need to know about being green in Hampton Roads.

Blog submitted by askHRgreen expert Suzanne Dyba, Water Monitoring Coordinator for James City County.

Posted in: Outdoor tips, Using water wisely, Waterways

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Lawncare
Outdoor Tips
Pets
Plastic Bags
Reduce Reuse And Recycle
Research
Service Learning
Using Water Wisely
Waterways

WE'RE TALKING GREEN HERE, FOLKS...

PLAYING IT SAFE AT THE BEACH THIS SUMMER

Posted on May 22, 2014 by Guest Contributor | Comments Off

Swimming in Virginia's natural waters can be a great way to cool down and have some fun this summer, but don't put on your swimsuit and dive in just yet. To ensure a healthy and safe trip to the beach, be aware of what you can do to protect yourself from the health risks involved with swimming in local rivers, lakes and oceans.

The bacteria levels of over 40 different beaches on the Chesapeake Bay and Atlantic Ocean are tested regularly between the months of May and September. Bacteria levels that appear higher than normal indicate that the water may be contaminated by human or animal waste, which can in turn cause gastro-intestinal illnesses and ear, eye, skin, and respiratory infections in swimmers.

Beaches that are unsafe to swim in are labeled with a swimming advisory sign. Be mindful of swimming advisories and make sure to avoid swimming in waters that are currently under an advisory. The current water quality of specific beaches in Virginia can be found on the Virginia Department of Health's beach monitoring website.

Other important steps you can take to prevent illnesses from recreational waters include:

- Avoid swimming anywhere near pipes and storm drains which can release polluted water from the stormwater system. This polluted runoff may contain bacteria from pet waste, chemicals from lawn fertilizer or pesticide or oil and grease from nearby streets and parking lots.
- Wait several days after a heavy rain event before swimming in natural waters. During heavy rains untreated wastewater, animal waste, and other pollutants can be washed into natural waters that are used for recreation.
- Do not leave pet waste, dirty diapers, or trash near waterways or beaches. Always find an appropriate receptacle for disposing of trash and litter at the beach.

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Chesapeake

Be a good steward while enjoying our waterways this summer! It's best for your health and the health of our waterways.

Blog submitted by askHRgreen expert Suzanne Dyba, Water Monitoring Coordinator for James City County.

Posted in: Don't litter!, Pets, Waterways

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Leave Comment Share Email

Comments are closed.

James City County Stormwater Public Information Plan

June 30, 2014

In July 2013, the James City County Communications Office began facilitating the development of a public education and outreach program to meet the requirements of the County's new stormwater permit. Participants in this effort included the Stormwater Division staff as well as representatives of the citizen Stormwater Program Advisory Committee. Subcommittees were established to review the needs of specific audiences and develop appropriate messages. Results were vetted through the full Stormwater Program Advisory Committee in order to ensure that the proposed program would meet citizen and program needs.

This document summarizes the development of the public information plan and identifies the actions the County will undertake through June 30, 2018 to meet the requirements of the MS4 Permit #VAR040037

The goal

"Join us in restoring and protecting our clean water heritage."

- Clean creeks, lakes and rivers for County residents and visitors to enjoy

This is your call to action!

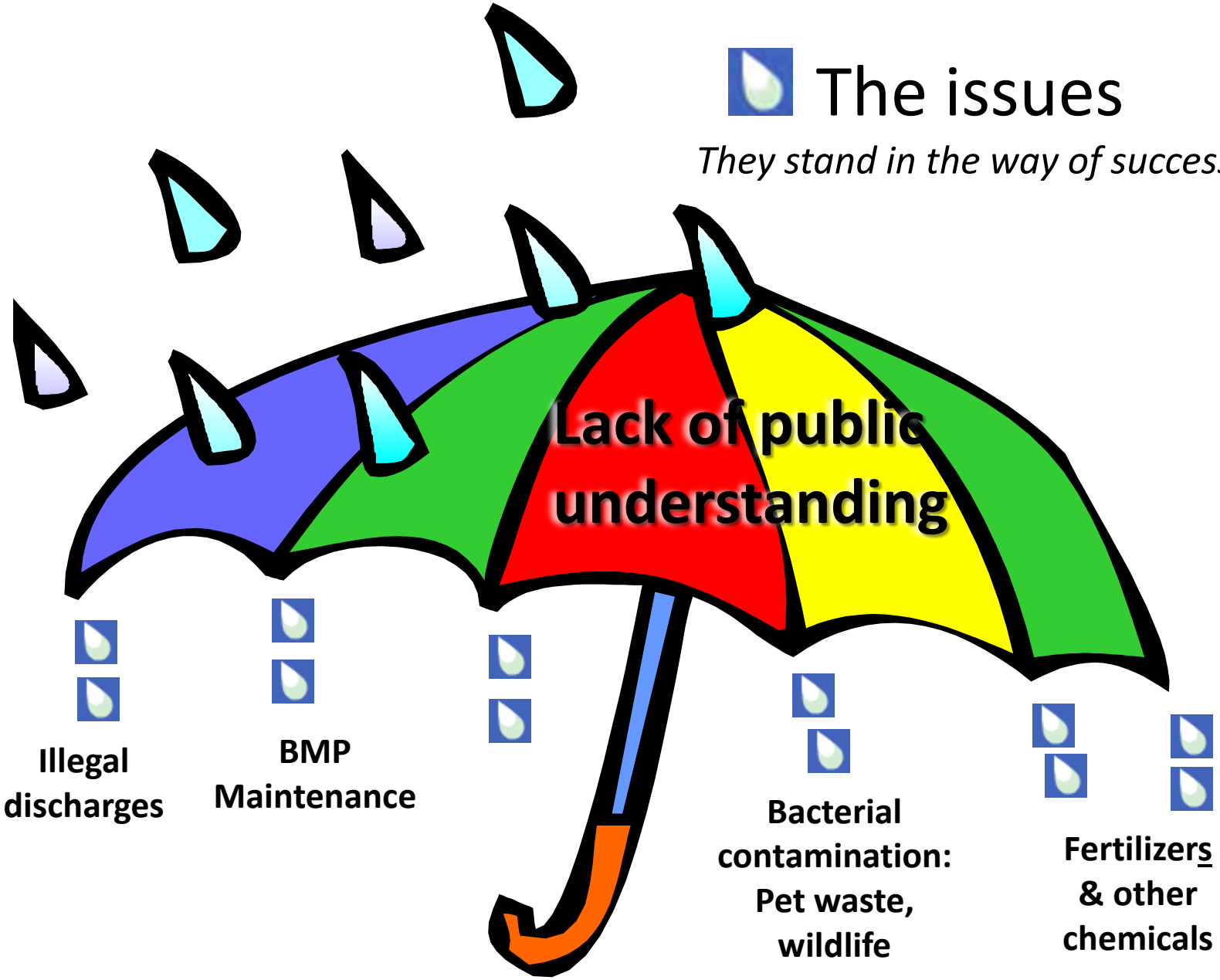
Clean Water Heritage Brand

The distinctive Chesapecten Jefferesonius scallop is the state fossil of Virginia and was the first fossil described in North America in 1687. It is commonly found in stream valleys and on river beaches along the James and York Rivers. According to the Virginia Museum of Natural History, during colonial times these shells would be piled up along stream banks and used as ladles to get a drink of water.

This scallop is a fitting reminder and symbol of James City County's Clean Water Heritage!

The issues

They stand in the way of success.



The audiences

They are the target.

- Pet owners/residents/septic system owners
- Managed turf properties (golf courses, homeowners, lawn care companies, HOAs, parks, athletic fields)
- Small businesses and contractors (carpet cleaners, power washers, painting contractors, etc)
- BMP/ SMF/stormwater pond owners including businesses

The messages

By these actions, the impact can be minimized or eliminated.

Issue: Bacterial contamination and pet waste

Who: pet owners and septic system owners

- Pick up after your pet
- Use pet waste station/throw in trash (yard and walks)
- Promote free pet waste stations
- Maintain your septic system
- Tell em why

Issue: BMP Maintenance

Who: BMP owners

- Prevent water fowl access to ponds & BMPs
- Don't feed wildlife
- Maintain BMP; how to maintain; cost & fund; offer clean water grants
- Tell em why; Explain how it works

The messages

By these actions, the impact can be minimized or eliminated.

Issue: Fertilizer & Other Chemicals

Who: HOAs, homeowners, businesses that manage turf

- Educate (Turf Love)
- Reduce amount of turf or lawn – go natural
- Encourage less use of fertilizer and right method and right time

Issue: Illegal Discharges

Who: carpet cleaners, power washers, painting contractors, etc

- Educate – Only rain in the drain, http://askhrgreen.org
- Advertise the convenience centers & HHW collections for disposal
- Maintain grease traps and recycle tanks
- Train employees on waste management

Message Delivery Opportunities

Issue: Bacterial Contamination

Who: Pet owners and septic system owners

Audience: 10,200 Dog Licenses; 4,438 Septic System Owners

- Community events (Bark in the Park, Drool in the Pool)
- Scoop the Poop premium items
- Partner with Heritage Humane Society, other community groups, pet stores, vet offices (ex: bring a card in to the office and get free baggies)
- Direct mail
- Give away pet waste stations
- Social media, JCC website, JCC TV
- Radio PSAs
- Movie theater ads
- Crawl on the Weather Channel
- Newspapers, wydaily
- HOA newsletters
- Williamsburg Farmers Market

Message Delivery Opportunities

Issue: Fertilizer
Who: HOAs, homeowners, managed turf
Audience: ~ 5,800 residential lots with irrigation systems

- Turf Love and Garden Love
- Master Gardeners, Virginia Native Plant Society
- Lawn care companies – future water heritage stewards
- Workshops
- Neighborhood leadership meetings, social media, website, JCC TV, e-FYI
- Local real estate agents for new residents to promote soil testing
- Coupon promotions reducing costs for soil testing
- Working with civic groups to give them the kits – coordinate with Turf Love
- Local Nurseries
- Collaboration with JCSA

Message Delivery Opportunities

Issue: Illegal Discharges
Who: Small cleaning business & restaurant employees
Audience: 265 businesses

- Website, social media, JCC TV, neighborhood group, e-FYI
- Collaborate with JCSA
- www.askHRGreen, best practices handouts
- Direct mail
- Site visits coordinated with citizen-reported hot-line complaints
- Kiosks County Parks, Recreation Center
- HOA newsletter

Message Delivery Opportunities

Issue: BMP
Who: BMP owners
Audience: 313 private and public owners

- Direct mail
- Inspection follow-up for systems needing repair
- Workshops for contractors, owners, property managers
- Website, social media, JCC TV, e-FYI, neighborhood leadership
- Printed materials, maps, guidance

Success

Measures (As described in Permit # VAR040037)

- List of educational outreach activities conducted for each high-priority water quality issue
- Estimated number of people reached
- Estimated percentage of the target audience or audiences that will be reached (goal = 20%)

Selected Message Delivery

Issue: Bacterial Contamination

Who: Pet owners and septic system owners

First Priority Actions – PY2 through PY5

- Williamsburg Farmers Market display, handouts and Scoop the Poop premium items
- Give away pet waste stations
- Direct mail to owners of septic system, pets (20% annually)
- HOA newsletters/Community Services
- Social media, JCC website, JCC TV
- Collaborate with askHRGreen.org

Follow-up Actions – to be added upon evaluation

- Community events (such as Bark in the Park, Drool in the Pool)
- Partner with Heritage Humane Society, other community groups, pet stores
- Movie theater ads, Radio PSAs
- Crawl on the Weather Channel
- VA Gazette, wydaily.com

Selected Message Delivery

Issue: Fertilizer

Who: HOAs, homeowners, managed turf

First Priority Actions - PY2 through PY5

- Fund Turf Love and Garden Love programs
- Collaborate with Master Gardeners, Virginia Native Plant Society
- Collaborate with JCSA to identify managed turf properties
- Direct mail (20% annually)
- Collaborate with askHRGreen.org
- Workshops – Lawn Care, Rain Gardens
- Neighborhood leadership meetings, social media, website, JCC TV, e-FYI

Follow-up Actions – to be added upon evaluation

- Promotions reducing costs for soil testing
- Collaborate with local nurseries and local real estate agents for new residents to promote soil testing and native plants
- Lawn care companies – future water heritage stewards certification

Selected Message Delivery

Issue: Illegal Discharges

Who: Small business employees (companies involved in carpet cleaning, power washing, painting and charity car washes)

First Priority Actions - PY2 through PY5

- Collaborate with www.askHRGreen, best practices handouts
- Direct mail (20% annually)
- Website, social media, JCC TV, neighborhood group, e-FYI
- HOA newsletters information for homeowners
- Collaborate with JCSA and HRPDC on Fats, Oils & Grease (FOG) program

Follow-up Actions – to be added upon evaluation

- Site visits to targeted businesses
- Kiosks County Parks, Recreation Center
- Car wash kit loan program

Selected Message Delivery

Issue: BMP
Who: BMP owners

First Priority Actions - PY2 through PY5

- Inspection follow-up for systems needing repair
- Website, social media, JCC TV, e-FYI, neighborhood leadership
- Printed materials, maps, guidance
- Direct mail (20% annually)

Actions under development for PY 3-5

- Workshops for contractors
- Planning workshops (operations & maintenance) for owners, property managers

Clean Water Heritage (CWH) FY 15 (PY2) Rollout Schedule

Due Date	Action
7/30/14	Coordination Meeting - Stormwater Division, Advisory Committee and Communications Office
8/1/14	Mailing inserts (rack cards) finalized and ready for printing
8/15/14	CWH Grant Program FY 15 Guidance & Criteria finalized
8/15/14	CWH Rain Garden signage and display finalized
8/29/14	Coordination Meeting (Stormwater Division and Communications Office - tentative
9/1/14	CWH Website on line
9/10/14	CWH Media Briefing
9/13/14	Display and handouts at the Williamsburg Farmers Market

Do Your Part
Scoop the Poop

Clean Water Heritage

James City County
VIRGINIA
Jamestown 1607
Stormwater

Restore & Protect

jamescitycountyva.gov/stormwater

Why should you pick up your pet's waste?
Pet waste contains nutrients that can cause weeds and algae to grow more rapidly which greatly impacts the health of our waterways. When plant material dies, it uses oxygen, reducing the availability of oxygen for fish and other aquatic life. Pet waste also contains parasitic worms, viruses, and bacteria that are harmful to humans and other pets. As a result, high levels of these environmental pests in our waterways lead to restrictions on swimming, fishing and shellfish harvesting.

Anything on the ground, no matter how far away from the stormwater drainage system, eventually ends up in a nearby waterway. Not only should you worry about waste directly accessing a body of water but storm drains, manholes, and grass ditches all convey runoff to the closest body of water.

When walking your pet, always carry plastic bags. Use a bag to pick up dog waste, tie the bag closed and throw it in the trash. Follow the same steps at home with indoor pet waste and kitty litter as well.

Do Your Part
With Your Yard

James City County
VIRGINIA
Jamestown 1607
Stormwater

Restore & Protect

jamescitycountyva.gov/stormwater

How Does Your Rain Garden Grow?

Rain gardens, when properly designed, constructed, and maintained, are striking landscape features that provide functionality as well as aesthetic pleasure. An effective rain garden should be constructed with a shallow swale in a low-lying area. A saucer-shaped depression between 12-18 inches deep is planted with water-tolerant plants. When properly planted, a rain garden will:

- Mimic nature
- Control stormwater runoff
- Improve groundwater recharge

The plants and soils within a rain garden:

- Absorb excess fertilizer and pesticides
- Absorb excess oils (hydrocarbons?)
- Absorb bacteria

The County in cooperation with the Turf Love Program can provide rebates to property owners in order to help offset the cost of a rain garden.

For more information on rain gardens, contact the Turf Love program at 757-564-2170. An enrollment fee of $30 is required for an initial Turf Love visit and soil sample.

Take a look at the James City County's "How to Build a Rain Garden" video at youtube.com/watch?v=h88RB0J_EqQ.

Do Your Part
Be Septic Smart

Clean Water Heritage

James City County
VIRGINIA
Jamestown 1607
Stormwater

Restore & Protect

jamescitycountyva.gov/stormwater

Protect your home investment and avoid costly replacement by doing your part and following these five important tips:

1. **Have It Inspected** – Have your septic tank inspected and pumped out at least once every five years.

2. **Don't Strain Your Drain** – Fix household leaks, run dishwasher and laundry with full loads and install high efficiency fixtures.

3. **Reduce FOG** – Don't pour fats, oils, and grease (FOG) or paints/solvents down your drains. They will clog and harm your septic system.

4. **Watch What You Flush** – Do not flush nonbiodegradable items down the toilet such as floss, feminine hygiene products, and diapers.

5. **Protect Your Field** – Do not drive or park a vehicle on your drain field. Take measures to reduce roof and surface runoff onto the drain field to increase its effectiveness.

Do Your Part
Fertilize Smart

Clean Water Heritage

James City County
VIRGINIA
Jamestown 1607
Stormwater

Restore & Protect

jamescitycountyva.gov/stormwater

Stormwater runoff can have negative effects on water quality in James City County. Excessive nutrients and sediment are two of the greatest pollutants impacting the Chesapeake Bay. To reduce those pollutants we must do our part:

1. **Get a Soil Test** – To improve your lawn's soil, understand what you have in order to apply the right soil amendments. The results from a soil test and an associated nutrient management plan provided by Turf Love will help determine the best application method to better your lawn.
2. **Plant More Native Plants** – Adding plants to your yard will help to reduce erosion, filter stormwater runoff, reduce yard maintence by minimizing the need for watering and fertilizing, make your yard more attractive and provide food and habitat for wildlife. Native plants are already accustomed to growing in our soils and are adapted to our weather.
3. **Leave the Clippings** – While mowing your lawn, allow the clippings to remain. As clippings break down, they act as a natural and FREE fertilizer for your lawn which means less work and more money for you!
4. **Compost Your Lawn** – Apply a quarter inch of compost during spring and fall to help build healthy top soil and to feed your lawn. Compost is a less expensive alternative to commercial fertilizer and better for the environment.
5. **Spread Fertilizer Carefully** – Use a drop spreader to keep fertilizer off hard surfaces such as roads, sidewalks, and driveways. Sweep any that reaches these hard surfaces onto grass or flower beds to prevent it from becoming runoff.

For more help to "Fertilize Smart," contact the Turf Love program at 757-564-2170 and request a home visit. A Lawn Ranger will visit you to help with any questions you may have. An enrollment fee of $30 is required for an initial Turf Love visit and soil sample.

Appendix C-2

Exhibits for Minimum Control Measure #2 – Public Participation

FY14 Pride Grants

Neighborhood	Project type	Project Summary	Project budget	Amount Granted	Maintenance Agreement	Objective
Brookside Haven	Drainage Improvements	Create new drainage areas to alleviate flooding issues in multiple homes. Project was applied for in FY13. Homeowners agreed to fund $3,900 but can't do any more.	$5,900.00	$2,000.00	N/A	Alleviate flooding in residences
Wellington	Stormwater Infrastructure Improvements	Excavate and repair, excavate principal spillway riser and install new low flow orifice, add #3 stone, excavate and remove silt buildup, pending approval of ERP	$13,800.00	$2,000.00	Yes	Upgrade and repair BMP to improve water quality
Holly Ridge	Non-Routine Stormwater Maintenance	Remove trees on embankment and within 10' of outfall structure	$2,850.00	$1,000.00	Maintenance plan on file, but no agreement	Address needs identified in latest JCC BMP inspection report
Midlands	Drainage Improvements	Regrade and replace drainage channel between townhomes	$1,245.00	$622.50	N/A	Control water runoff and reduce erosion
Longhill Station	Non-Routine Stormwater Maintenance	Repair faulty construction between storm drain pipe and drop inlet basin	$850.00	$232.50	N/A	Control water runoff and reduce erosion
Longhill Station	Stormwater Infrastructure Improvements	Replace BMP standpipe with new concrete standpipe, excavate and replace 120 lf of failed corrugated pipe with new concrete pipe	$11,500.00	$1,000.00	Yes	Upgrade and repair BMP to improve water quality

FY14 Pride Grants

Jamestown 1607	Drainage Improvements	Regrade drainage swale on east and west sides of community to reestablish optimal drainage	$4,500.00	$1,000.00	N/A	Alleviate flooding in residences
Powhatan Secondary	Non-Routine Stormwater Maintenance	Regrade main drainage channels for (2) BMPs. Replace rip rap liner and re-establish channel.	$9,000.00	$1,000.00	Yes	Address needs identified in latest JCC BMP inspection report
Longhill Gate	Drainage Improvements	Remove failed concrete drain pipe and reconnect joint connection under VDot roadway	$950.00	$422.50	No	Control water runoff and reduce erosion
Strawberry Cove	Non-Routine Stormwater Maintenance	Excavate and replace broken concrete pipe	$7,000.00	$1,000.00	No	Address needs identified in latest JCC BMP inspection report

James City County Pet Waste Station Giveaways		
County Watershed	***County Neighborhood***	***# Pet Waste Stations Given***
Powhatan	Jamestown Hundred	1
Powhatan	Monticello Woods	1
James River	Governors Land	3
Ware	Fenwick Hills	2
Powhatan	Mulberry Place	1
Powhatan	Seasons Trace	1
Mill	Midlands	2
Skiffes	Skiffes Creek Terrace	2
Powhatan	Powhatan Secondary	1
York River	Glenwood Acres	1
Yarmouth	Colonial Heritage	2

JCC ID	Stream Name	Location	Monitoring Type	Latitude	Longitude
PCUT07	Unnamed Tributary to Long Hill Swamp (Powhatan Creek)	Warhill Park Complex	benthic	37.32034995	-76.76451623
PCLS04	Powhatan Creek	Adams Hunt CBLAD site	benthic	37.32727351	-76.77250385
PCLT01	Powhatan Creek	Greensprings Trail	benthic	37.239118	-76.775122

Participate in Litter Prevention Month!

33rd Annual County-Wide Spring Cleanup

Sponsored by the James City Clean County Commission

WHAT: *Disposal fees are "waived" by all REGISTERED groups or organizations.

*No food waste or hazardous materials accepted

*All items must be delivered to Jolly Pond Transfer Station at 1204 Jolly Pond Road

WHEN: April 5, 2014

April 12, 2014

April 26, 2014

WHERE: You choose your own common area! However, if you don't have a site but have a group that would like to participate in the cleanup contact us for a list of locations!
(259-5375 or litter@jamescitycountyva.gov)

HOW: Registration forms are available at:

1. www.jamescitycountyva.gov/cleancounty
2. Call 757-565-3664
3. Pick one up at any JCC convenience center (i.e. Toano, Tewning Road or Jolly Pond)

Registrations must be submited by **March 21st, 2014** NO EXTENSIONS!

QUESTIONS? Call 757-565-3664

DATE	Event	Announcement Posted Publically	Written Agenda	Minutes Approved	Minutes Posted on Website
7/9/2013	SPAC Outreach Subcommittee	No	No	No	No
7/16/2013	SPAC regular meeting	yes	yes	yes	yes
7/21/2013	SPAC FY14 Pride Grant subcommittee	No	No	No	No
9/24/2013	SPAC regular meeting	yes	yes	yes	yes
11/19/2013	SPAC regular meeting	yes	yes	yes	yes
12/4/2013	SPAC Outreach Subcommittee	No	No	No	No
12/5/2013	SPAC Outreach Subcommittee	No	No	No	No
12/10/2013	SPAC Outreach Subcommittee	No	No	No	No
12/13/2013	SPAC Outreach Subcommittee	No	No	No	No
1/3/2014	SPAC Outreach Subcommittee	No	No	No	No
1/21/2014	SPAC regular meeting	yes	yes	yes	yes
2/5/2014	SPAC Outreach Subcommittee	No	No	No	No
2/26/2014	SPAC Outreach Subcommittee	No	No	No	No
3/18/2014	SPAC regular meeting	yes	yes	yes	Yes
5/20/2014	SPAC regular meeting	yes	yes	yes	Yes
6/17/2014	SPAC Outreach Subcommittee	No	No	No	No

Public Participation Program

James City County has traditionally offered residents and businesses many opportunities to participate in programs that benefit and shape the future of the County. Of these opportunities, three specifically support the stormwater program as delineated by the County's Municipal Separate Storm Sewer System (MS4) Permit Number VAR040037.

1. Stormwater Program Advisory Committee (SPAC)

The SPAC provides assistance and advice to the Board of Supervisors and county staff in the development, implementation and promotion of the County's stormwater program. As such, Committee members develop the annual stormwater program public engagement and outreach plan and make recommendations regarding needs and activities, review outreach and public engagement materials to ensure consistent and effective messages to County citizens, assist staff in outreach and engagement activities including speaking to community groups and manning displays at public events, identify needed infrastructure improvements and review biennial capital improvement programs and recommend priorities.

The SPAC oversees the Clean Water Heritage Public Information Program, including the Clean Water Heritage Grant Program which provides matching grants for residential rain garden installations and retrofits / upgrades to privately owned stormwater management facilities. The grant program provides opportunity for property owners to improve their stormwater management efforts.

The Committee members represent a broad range of interests and areas within the County and new members are solicited annually. The Committee holds public meetings at least six times per year with agenda topics posted in an annual calendar. Information on SPAC activities can be found at www.jamescitycountyva.gov/cleanwaterheritage .

2. Volunteer Water Quality Monitoring Program

Trained volunteers have been gathering data about County waterways since 2008. Most volunteers collect and count benthic macro-invertebrate samples at various locations throughout the County. The sampling occurs two times per year, during the fall and spring months, and provides insight into the overall quality of the County's watersheds. New volunteers are solicited annually and provided with equipment and training. Since a number of County waterways have bacterial pollution, volunteers and staff also gather monthly bacteria samples using a screening tool known as the Coliscan Easygel method. This data help track trends in bacteria levels in priority watersheds.

Results of the data gathered by the volunteers for both methods are incorporated into watershed summaries for each of the County's watershed. These are updated annually and posted on the Clean Water Heritage website, www.jamescitycountyva.gov/cleanwaterheritage .

3. Clean County Commission

Established in 1979, the James City Clean County Commission is a coalition of local volunteers appointed by the Board of Supervisors. They are dedicated to promoting recycling, litter control, providing environmental education, and helping to coordinate County beautification projects. Meetings are held monthly.

Clean County Commission's original program, Spring Cleanup, has been helping citizens create a cleaner community for over 30 years. In that time, local volunteers have removed over six million pounds of trash from

County roadsides and illegal dump sites. Each April, hundreds of volunteers give their time and energy to collect trash in areas where it would have otherwise polluted the environment. With help from residents across the County, Spring Clean-Up has been a continual success and allows the community to truly create a cleaner, more beautiful landscape.

The Clean County Commission also provides matching grants to neighborhood associations or committees through the Good Neighbor Environment Matching Grant Program. These grants enhance the sense of community and sustainability of County neighborhoods through the development and accomplishment of environmentally sustainable landscape beautification projects.

Information on the Clean County Commission and their many activities can be found at http://www.jamescitycountyva.gov/recycling/clean-county-commission.html .

Appendix C-3

Exhibits for Minimum Control Measure #3 – Illicit Discharge Detection and Elimination

ILLICIT DISCHARGE DETECTION & ELIMINATION PROGRAM ACTIVITIES

3.2 – *IDDE Implementation and Enforcement Actions*

There was one (1) reported illicit discharge in James City County from June 30, 2013 to July 1, 2014 – PY1. Upon investigation, it was discovered that no incorrect procedures were taking place. All violations are pursued until they meet compliance following the protocol described in Item 3.3. There were also 16 reported SSORS notifications from JCSA, which are also considered an illicit discharge.

3.3 – *Complaint IDDE Response:*

- Receive complaint by telephone, e-mail, or another source.
- Log complaint into DICE system (Stormwater Division's tracking system).
- Check inlet structure at complaint site for illicit discharge based of complaint
    - Document the following to help determine illicit discharge
        - Is there a discharge?
        - Is discharge permitted?
        - Color/odor of flow?
        - Evidence of pollutants (suds, deposits, etc)?
        - Follow up needed?
    - Follow storm sewer system upstream while visually inspecting at man hole locations
        - Visual inspection by confined space entry or pole camera
            - Photo documentation
    - If illicit discharge evidence is present or illicit discharge is found:
        - Alert property owner of illicit discharge and issue "Notice of Site Visit" or "Notice of Inspection" documenting illicit discharge and expected actions to be taken
        - Re-inspect location to check for corrective actions taken and determine no further illicit discharge is taking place
        - If actions have not been taken issue "Notice of Violation" and follow up as needed until cleanup actions have taken place
        - If the issuance of the Notices does not achieve compliance, violations are to be forwarded to County Attorneys' office for review.

James City County Stormwater Division

5320 Palmer Ln Suite 2A
Williamsburg, VA 23188
www.jamescitycountyva.gov

Phone: (757)259-1460
Fax: (757)259-5833
Email: stormwater@jamescitycountyva.gov

ILLICIT DISCHARGE INSPECTION REPORT

In accordance with Ordnance No. 208A-1, §18A-25, James City County staff performed a site inspection at the following location:

James City County staff observed the following condition(s) during the inspection:

These conditions constitute non-compliance with Ordinance No. 208A-1 of the Code of James City County:

> §18A-22 Prohibitions,*(a) It shall be a violation of this ordinance to:*
> *(1) Discharge, or cause or allow to be discharged, sewage, industrial wastes or other wastes into the storm sewer system, or any component thereof, or onto driveways, sidewalks, parking lots or other areas draining to the storm sewer system; or (2) Connect, or cause or allow to be connected, any sanitary sewer to the storm sewer system, including any sanitary sewer connected to the storm sewer system as of the date of adoption of this article. (3) Throw, place or deposit or cause to be thrown, placed or deposited into the storm sewer system anything that impedes or interferes with the free flow of stormwater therein.*

Required Corrective Action(s):

Required corrective action deadline date:

Re-Inspection Date:

> If listed condition(s) are not corrected by the deadline, a **NOTICE OF CORRECTIVE ACTION** and/or other enforcement actions may be issued to the person performing such discharges or to the property owner where such discharges are occurring.

Inspector: _____ **Site Visit Date:** _____

Acknowledgement of on-site receipt:

Print Name: _____ **Date:** _____

James City County Stormwater Division

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NOTICE OF SITE VISIT

On _____ James City County received the following complaint regarding a possible discharge of wastes to the storm sewer system:

Description:

Location:

James City County staff observed the following conditions at the above location:

These conditions currently constitute non-compliance with Ordinance No. 208A-1 of the Code of James City County:

§18A-22 Prohibitions,*(a) It shall be a violation of this ordinance to:*
(1) Discharge, or cause or allow to be discharged, sewage, industrial wastes or other wastes into the storm sewer system, or any component thereof, or onto driveways, sidewalks, parking lots or other areas draining to the storm sewer system; or (2) Connect, or cause or allow to be connected, any sanitary sewer to the storm sewer system, including any sanitary sewer connected to the storm sewer system as of the date of adoption of this article. (3) Throw, place or deposit or cause to be thrown, placed or deposited into the storm sewer system anything that impedes or interferes with the free flow of stormwater therein.

Recommended Corrective Action:

Recommended corrective action deadline date: _____

Re-inspection Date:_____

If listed condition(s) are not corrected by the deadline, a **Notice Of Corrective Action** and/or other enforcement actions may be issued to the person performing such discharges or to the property owner where such discharges are occurring.

Inspector:_____**Site Visit Date:_____**

Acknowledgement of on-site receipt (if available):

Print Name _____**Signature Date:_____**

Date	Location	Initial Complaint	Action Taken	Description/Result	Photos Taken
2/26/2014	5117 John Tyler Hwy	Strong solvent odor coming from area of Mega Auto Spa as well as tanker truck	Site visit made and found no incorrect procedures	Business owner stated that the solids tank was cleaned out during time of complaint and was a cause of smell. Solids were hauled off by tanker for proper disposal	No

Screening Year	Screening Point ID	Location	Lat	Long	Structure Number	Commerical	Industrial	Residential	Screening Date
2014	2014-00001	Clara Byrd Baker	37.2480729940754	-76.7648004450378	PCTMS002	Yes	No	Yes	05/30/2014
2014	2014-00002	Clara Byrd Baker	37.2483590967110	-76.7662381090698	PCTMS005	No	No	Yes	05/30/2014
2014	2014-00003	Clara Byrd Baker	37.2478381328910	-76.7658733286438	PCTMS004	No	No	Yes	05/30/2014
2014	2014-00004	Clara Byrd Baker	37.2498024038921	-76.7668818392334	PCTMS001	No	No	Yes	05/30/2014
2014	2014-00005	Clara Byrd Baker	37.2499390469263	-76.7678688921509	PCTMS003	No	No	Yes	05/30/2014

		REVISED DATE:
JAMES CITY COUNTY ADMINISTRATIVE REGULATION OPERATING PROCEDURES	**NUMBER:** COAD AR 28	**EFFECTIVE DATE:** September 4, 2014
	TITLE: Pollution Prevention Program	

PURPOSE: The purpose of the James City County Pollution Prevention Program is to provide guidelines for preventing pollution of storm runoff from County facilities in order to prevent pollution of County waterways.

APPLIES TO: All James City County, James City Service Authority and Williamsburg-James City County Public Schools employees working within James City County and contractors or vendors who manage these owned and/or operated facilities.

POLICY

I. Purpose

James City County is permitted by the Virginia Department of Environmental Quality, under the federal Clean Water Act, to discharge stormwater to waterways in the County. The permit, known as the Municipal Separate Storm Sewer System (MS4) Permit, requires James City County and its employees and agencies to take specific actions to reduce runoff pollution. These actions are described in this Administrative Regulation.

II. Scope

The implementation of this Program is the joint responsibility of all employees and contractors, and mirrors the County Values of Integrity, Collaboration, Excellence and Stewardship. The departments and agencies will incorporate pollution prevention and good housekeeping measures into all appropriate standard operating procedures. This joint effort to reduce stormwater pollution through pollution prevention activities will be practiced by all employees or agents through collaborative decision-making, partnerships and communications in all of James City County's government operations.

III. Objective

The objective is to reduce or prevent pollution in storm runoff from daily operations by:

A. Preventing illegal discharges of non-stormwater to the stormwater system
B. Properly disposing of all solid and liquid wastes.
C. Using best practices to fuel County vehicles to reduce spills and exposure to stormwater.
D. Using best practices to store materials and equipment to reduce contact with stormwater.
E. Implementing site specific Stormwater Pollution Prevention Plans (SWPPPs) and Spill Prevention, Control and Countermeasure (SPCC) plans as appropriate.
F. Implementing a County-wide training program to accomplish the above objectives.

IV. Organization

The County's Pollution Prevention Program will be administered through the Pollution Prevention Team, comprised of representatives from each County department or agency that undertakes vulnerable outside activities including, but not limited to, General Services Divisions, Fire and Emergency Management, Police, James City Service Authority, Parks and Recreation and Williamsburg-James City County Public Schools.

A. *Stormwater Director*
The Stormwater Director reports directly to the Director of General Services and shall have overall responsibility for overseeing and coordinating the Pollution Prevention Program.

B. *Pollution Prevention Team*
The Stormwater Director, or designee, will assemble a Pollution Prevention Team comprised of representatives from affected departments. The purpose of the Team is to advise the Stormwater Director on the operation of the Pollution Prevention Program and to provide assistance on specific tasks when needed. The Pollution Prevention Team will also share information about best practices for good housekeeping with their respective departments. They shall recommend and implement pollution prevention projects and practices and shall provide necessary information for reporting from their respective areas. The Pollution Prevention Team will meet at least twice during each fiscal year. Additional meetings may be called by the Stormwater Director as needed. This partnership is vital to successfully implementing the Pollution Prevention Program and complying with the County's MS4 permit obligations.

V. Implementation

A. The Department and Agency Directors will implement the Pollution Prevention Employee Training Program in accordance with the training tiers defined in Attachment A. Training activities will be incorporated into new employee orientation, in-service training and refresher courses offered by each department or agency. Documentation of training activities will be maintained for three years from the training date and will consist of a list of the training topics or agenda, an attendance sign-in sheet and any handouts provided during the training. For employees with State or federally regulated certifications, documentation of the certification will suffice for training purposes.

B. The Stormwater Division will assist the departments or agencies in the preparation of training goals such as those shown in Attachment B. The departmental training goals will reflect the identified training topics from Attachment A and be specific for the sites and facilities around which the employees work. The Division will track the training, topics, schedule, attendees, etc. and secure tools and resources to ensure that training is appropriate and high quality.

C. The Department and Agency Directors will work with their Pollution Prevention Team representative(s), General Services, and the Stormwater Director to make improvements to their department procedures. The General Services Department is responsible for installing pollution prevention measures; however the Department and Agency Directors are accountable for ensuring that employee behaviors are consistent with pollution prevention best practices.

D. The Stormwater Division will perform routine pollution prevention audits of facilities with SWPPPS and SPCC plans and will communicate the results to the appropriate personnel. The Stormwater Director will provide regular reports to the Pollution Prevention Team.

E. All actions undertaken as part of the Pollution Prevention Program will be reported on an annual basis to the Department of Environmental Quality as part of the County's MS4 reporting.

F. All employees, regardless of work location, will follow the following guidelines contained in Attachment C at all times.

VI. Reporting

The Stormwater Director shall prepare the MS4 annual report documenting all efforts to prevent pollution of storm runoff from County activities. In accordance with the MS4 permit, the report shall be posted on the County website to assure the public that the County is in compliance with State and federal law.

Attachment A

Pollution Prevention Program Training Tiers and Topics

Tier	Employee Group	Training Topics	Tools
1	All Employees	• Principles of stormwater pollution prevention • Elimination of illegal discharges • Good housekeeping and related best management practices, including vehicle fueling • Employees' obligation to stewardship in accordance with the County's Values • Training program requirements	Administrative Regulation (AR) (written policy and directive) and Attachment C handout
2	Employees working or managing County Facilities: Fire, Police, Parks, General Services, School Facilities	• Detecting and reporting Illegal discharges • Spill control and response • Vehicle and equipment maintenance • Vehicle and equipment washing • Materials management • Waste management • Facility maintenance • Parking lot maintenance • Storm drain system cleaning • Landscaping and grounds maintenance • Working over or near surface waters	• Standard Operating Procedures • Regional Stormwater Program Training Materials • Training videos • In-house training materials as needed
3	Employees working at sites with certified Nutrient Management Plans (NMPs)	• NMP basics • Special procedures for materials handling • Spill control and response – advanced • Facility-specific stormwater management measures and practices	• Site-specific NMPs • In-house training materials as needed
4	Employees working at sites with SWPPPs and/or SPCC plans	• SWPPP basics • SPCC plan basics • Special procedures for materials handling • Spill control and response – advanced • Facility-specific stormwater management measures and practices	• Site-specific SWPPPs • Site-specific SPCC plans • Regional Stormwater Program Training Materials as available • Training videos as available
5	Employees with State or federal regulated certifications (Grounds, Engineering & Resource Protection, Fire Department, Stormwater)	• Pesticide applicators • Hazmat certifications • ESC certifications • Stormwater certifications	• Agency provided training programs and certification exams

Attachment B

Sample JCSA Training Goals

Item	Required Knowledge	Adequate (yes or no)
1	Understands basics of Stormwater Pollution Prevention Plan, to include Background & Overview	
2	Knows the appropriate SWPPP Coordinator and Team	
3	Understands the Stormwater Drainage System at the Tewning Road complex	
4	Can identify potential stormwater contaminants & significant material inventory	
5	Knows vehicle and equipment washing and maintenance steps that will prevent pollution from entering the stormwater system	
6	Understands reasoning behind equipment staging and storage requirements	
7	Competent with operations in the fueling area, to include spill prevention and cleanup	
8	Knows pollution prevention requirements concerning outdoor material storage and dumpsters	
9	Understands the harm non-stormwater discharges can cause, and how to better control them	
10	Can explain good housekeeping and related best management practices	
11	Knows basics for management of stormwater runoff	
12	Can explain good spill prevention techniques to include the relayed response actions	

Attachment C

Individual Actions to be Followed by All Employees, Contractors and Vendors

1. **Know where the storm runoff goes:** Rain water gathers in ditches, drains and pipes and ultimately ends up in County waterways. Runoff does not go to a wastewater treatment plant. Anything rain water encounters on its way to a lake or river will be carried along with the water. Trash, leaves, cigarette butts and more end up in our streams. Citizens use waterways for swimming, fishing and boating. No one wants to fish or boat with trash.
2. **It's illegal to dump:** Chapter 18A of the James City County Code makes it illegal to put anything in a storm drain that isn't storm runoff. Use restrooms, trash bins or dumpsters to properly dispose of trash and leftover liquids. Remember - *Only Rain In The Drain*.
3. **Use best practices when fueling:** If you regularly drive a County vehicle, learn how to use the fuel pumps in order to avoid spills. Fueling instructions are placed in each vehicle when the state inspection is performed. Read them and use them.
4. **Act quickly to contain spills:** If you experience a spill at a County fuel site, open the spill kit and use the materials to contain the spill and keep it from migrating. Call the number at the site and help will come.
5. **Be a good steward:** Citizens expect County employees, contractors and vendors to treat public resources in a respectful manner. We have an obligation to be good stewards of the County's resources in accordance with the County values of integrity, collaboration, excellence and stewardship.

Suzanne Dyba

From: Lisa L. Polidori <LPolidori@vppsa.org>
Sent: Monday, September 29, 2014 12:46 PM
To: Suzanne Dyba
Subject: VPPSA Household Chemical Info for FY 14

Below is the list of events in FY 14, along with the number of vehicles attending. I've given you 2 numbers, one is the number of JCC vehicles that attended each event, and then the total number of vehicles which includes both JCC residents and residents from our member communities who are also allowed to attend.

Date of Event	# of Vehicles attending from JCC	Total # of Vehicles Attending
August 10, 2013	408	473
October 12, 2013	428	499
February 8, 2014	229	276
April 12, 2014	339	434
June 14, 2014	357	408

If you have any questions at all please let me know!

Lisa Polidori
Virginia Peninsulas Public Service Authority
475 McLaws Circle, Ste 3B
Williamsburg, VA 23185

(p)757-259-9850
(f) 757-259-9855

Home of America's 400th Anniversary
James City County 1607-2007 Jamestown

STORMWATER DIVISION

287 McLaws Circle, Suite 1, Williamsburg, Virginia 23185-5649
(757) 259-1460

E-mail: stormwater@james-city.va.us
Fax: (757) 259-5833

June 30, 2009

Mr. Todd Halacy
Residency Administrator
Virginia Department of Transportation
4451 Ironbound Road
Williamsburg, VA 23185

RE: Municipal Separate Storm Sewer Systems (MS4) Interconnectivity

Dear Mr. Halacy:

Pursuant to the Virginia General Permit for Discharges of Stormwater From Small Municipal Separate Storm Sewer Systems (4VAC50-60-1240 Sec. II.B.3.g), this letter serves as notification of our upstream physical interconnectivity to your stormwater system. Specifically, outfalls located in the James River watershed, and in the Diascund, Mill, Powhatan, Skiffes, Ware and Yarmouth Creek watersheds discharge into your system.

Should you have specific questions about outfall locations, MS4 or TMDL program activities within these watersheds, please contact me at 259-1442 for further information.

Sincerely,

Darryl E. Cook

Darryl E. Cook
County Engineer

IMAGETREND FIRE BRIDGE

Fire Incident By Street Address
From 07/01/13 To 06/30/14
Report Printed On: 08/04/2014

Incident Number	Incident Date	Alarm Time	Location	Primary Station	Incident Type
James-City County Fire					
Total					**0**

Search Criteria	
Dates	From 07/01/2013 To 06/30/2014 (mm/dd/yyyy)
Service	James-City County Fire
Incident Address	All
Staff	All
Apparatus	All
Station	All
Incident Type	Chemical spill or leak
Alarm Type	All
Zone/District	All

Report Description

IMAGETREND FIRE BRIDGE

Fire Incident By Street Address
From 07/01/13 To 06/30/14
Report Printed On: 08/04/2014

Incident Number	Incident Date	Alarm Time	Location	Primary Station	Incident Type
James-City County Fire					
1404399	06/21/2014	11:18	12501 HUMELSINE PKWY W	4	411 Gasoline or other flammable liquid spill
1404256	06/15/2014	18:30	8934 POCAHONTAS TRL	2	411 Gasoline or other flammable liquid spill
1404012	06/07/2014	09:41	4019 WINDSOR RDG	5	411 Gasoline or other flammable liquid spill
1403540	05/21/2014	07:29	3947 BOURNEMOUTH BEND	1	411 Gasoline or other flammable liquid spill
1403532	05/20/2014	18:48	13099 HUMELSINE PKWY W	4	411 Gasoline or other flammable liquid spill
1402095	03/27/2014	14:46	800 E ROCHAMBEAU DR	4	411 Gasoline or other flammable liquid spill
1400587	01/24/2014	08:52	1904 POCAHONTAS TRL	2	411 Gasoline or other flammable liquid spill
1308370	11/20/2013	20:22	4455 JOHN TYLER HWY	3	411 Gasoline or other flammable liquid spill
1307137	10/04/2013	13:06	9801 TURNING LEAF DR	1	411 Gasoline or other flammable liquid spill
1306763	09/19/2013	11:50	6450 RICHMOND RD	1	411 Gasoline or other flammable liquid spill
1300005807	08/14/2013	11:40	3 NEWMAN CT	4	411 Gasoline or other flammable liquid spill
1300004883	07/12/2013	10:37	7311 RICHMOND RD	1	411 Gasoline or other flammable liquid spill
1300004704	07/06/2013	03:36	8185 CROAKER RD	1	411 Gasoline or other flammable liquid spill
Total					**13**

Search Criteria	
Dates	From 07/01/2013 To 06/30/2014 (mm/dd/yyyy)
Service	James-City County Fire
Incident Address	All
Staff	All
Apparatus	All
Station	All
Incident Type	Gasoline or other flammable liquid spill
Alarm Type	All
Zone/District	All

Report Description

IMAGETREND FIRE BRIDGE

Incident Type Report (Summary)
From 07/01/13 To 06/30/14
Report Printed On: 08/04/2014

Incident Type	Count	% of Incidents	Est. Property Loss	Est. Content Loss	Total Est. Loss	% of Losses
1 Fire						
Building fire (111)	42	0.44%	$1,009,402.00	$431,585.00	$1,440,987.00	81.87%
Fires in structure other than in a building (112)	3	0.03%	$2,000.00	$351.00	$2,351.00	0.13%
Cooking fire, confined to container (113)	14	0.15%	$3,000.00	$1,850.00	$4,850.00	0.28%
Chimney or flue fire, confined to chimney or flue (114)	8	0.08%	$2,603.00	$2,603.00	$5,206.00	0.30%
Trash or rubbish fire, contained (118)	2	0.02%	$10.00	$5.00	$15.00	0.00%
Fire in mobile home used as fixed residence (121)	1	0.01%	$3,000.00	$3,500.00	$6,500.00	0.37%
Passenger vehicle fire (131)	20	0.21%	$53,250.00	$6,764.00	$60,014.00	3.41%
Road freight or transport vehicle fire (132)	4	0.04%	$300.00	$300.00	$600.00	0.03%
Rail vehicle fire (133)	1	0.01%	$50,000.00	$100.00	$50,100.00	2.85%
Water vehicle fire (134)	1	0.01%	$20,000.00	$20,000.00	$40,000.00	2.27%
Camper or recreational vehicle (RV) fire (137)	1	0.01%	$5,000.00	$5,000.00	$10,000.00	0.57%
Off-road vehicle or heavy equipment fire (138)	2	0.02%	$12,500.00	$101.00	$12,601.00	0.72%
Forest, woods or wildland fire (141)	5	0.05%	$2.00	$2.00	$4.00	0.00%
Brush or brush-and-grass mixture fire (142)	29	0.30%	$1,392.00	$1,138.00	$2,530.00	0.14%
Grass fire (143)	21	0.22%	$443.00	$443.00	$886.00	0.05%
Outside rubbish, trash or waste fire (151)	16	0.17%	$304.00	$354.00	$658.00	0.04%
Dumpster or other outside trash receptacle fire (154)	8	0.08%	$1,756.00	$543.00	$2,299.00	0.13%
Outside equipment fire (162)	4	0.04%	$13,900.00	$1,420.00	$15,320.00	0.87%
	182	**1.89%**	**$1,178,862.00**	**$476,059.00**	**$1,654,921.00**	**94.03%**
2 Overpressure Rupture, Explosion, Overheat(no fire)						
Overpressure rupture of air or gas pipe/pipeline (221)	2	0.02%	$0.00	$0.00	$0.00	0.00%
Excessive heat, scorch burns with no ignition (251)	8	0.08%	$1,000.00	$1,000.00	$2,000.00	0.11%
	10	**0.10%**	**$1,000.00**	**$1,000.00**	**$2,000.00**	**0.11%**
3 Rescue & Emergency Medical Service Incident						
Medical assist, assist EMS crew (311)	102	1.07%	$0.00	$0.00	$0.00	0.00%
EMS call, excluding vehicle accident with injury (321)	5757	60.50%	$0.00	$0.00	$0.00	0.00%
MVA Multi Vehicle (322A)	208	2.19%	$0.00	$0.00	$0.00	0.00%
MVA Single Vehicle (322B)	106	1.11%	$0.00	$0.00	$0.00	0.00%
MVA involving a School Bus (322C)	2	0.02%	$0.00	$0.00	$0.00	0.00%
MVA involving a Large Truck or Passenger Bus (322D)	1	0.01%	$0.00	$0.00	$0.00	0.00%
Motor vehicle/pedestrian accident (MV Ped) (323)	23	0.24%	$0.00	$0.00	$0.00	0.00%
Motor vehicle accident with no injuries. (324)	197	2.07%	$0.00	$0.00	$0.00	0.00%
Search for person on land (341)	1	0.01%	$0.00	$0.00	$0.00	0.00%
Search for person in water (342)	1	0.01%	$0.00	$0.00	$0.00	0.00%
Extrication of victim(s) from building/structure (351)	3	0.03%	$0.00	$0.00	$0.00	0.00%
Extrication of victim(s) from vehicle (352)	3	0.03%	$0.00	$0.00	$0.00	0.00%
Removal of victim(s) from stalled elevator (353)	3	0.03%	$0.00	$0.00	$0.00	0.00%
Swimming/recreational water areas rescue (361)	1	0.01%	$0.00	$0.00	$0.00	0.00%
Watercraft rescue (365)	3	0.03%	$0.00	$0.00	$0.00	0.00%
Rescue or EMS standby (381)	37	0.39%	$0.00	$0.00	$0.00	0.00%
	6448	**67.75%**	**$0.00**	**$0.00**	**$0.00**	**0.00%**
4 Hazardous Condition (No Fire)						
Gasoline or other flammable liquid spill (411)	13	0.14%	$0.00	$0.00	$0.00	0.00%
Gas leak (natural gas or LPG) (412)	56	0.59%	$0.00	$0.00	$0.00	0.00%
Oil or other combustible liquid spill (413)	3	0.03%	$0.00	$0.00	$0.00	0.00%
Carbon monoxide incident (424)	5	0.05%	$0.00	$0.00	$0.00	0.00%
Heat from short circuit (wiring), defective/worn (441)	9	0.09%	$0.00	$1,100.00	$1,100.00	0.06%
Overheated motor (442)	17	0.18%	$1,000.00	$15.00	$1,015.00	0.06%
Breakdown of light ballast (443)	1	0.01%	$0.00	$0.00	$0.00	0.00%
Power line down (444)	32	0.34%	$0.00	$0.00	$0.00	0.00%
Arcing, shorted electrical equipment (445)	33	0.35%	$600.00	$1,300.00	$1,900.00	0.11%
Building or structure weakened or collapsed (461)	17	0.18%	$86,500.00	$6,000.00	$92,500.00	5.26%
Aircraft standby (462)	11	0.12%	$0.00	$0.00	$0.00	0.00%
Vehicle accident, general cleanup (463)	10	0.11%	$0.00	$0.00	$0.00	0.00%
	207	**2.19%**	**$88,100.00**	**$8,415.00**	**$96,515.00**	**5.49%**
5 Service Call						
Lock-out (511)	2	0.02%	$0.00	$0.00	$0.00	0.00%
Ring or jewelry removal (512)	1	0.01%	$0.00	$0.00	$0.00	0.00%
Water evacuation (521)	1	0.01%	$0.00	$0.00	$0.00	0.00%
Water or steam leak (522)	21	0.22%	$1,000.00	$500.00	$1,500.00	0.09%
Smoke or odor removal (531)	17	0.18%	$0.00	$0.00	$0.00	0.00%
Animal rescue (542)	1	0.01%	$0.00	$0.00	$0.00	0.00%
Assist police or other governmental agency (551)	16	0.17%	$0.00	$0.00	$0.00	0.00%
Police matter (552)	29	0.30%	$0.00	$0.00	$0.00	0.00%
Public service (553)	247	2.60%	$0.00	$0.00	$0.00	0.00%
Smoke Detector Installation (553A)	22	0.23%	$0.00	$0.00	$0.00	0.00%
Replace Batteries in Smoke Detector (553B)	29	0.30%	$0.00	$0.00	$0.00	0.00%
Install Carbon Monoxide Detector (553C)	1	0.01%	$0.00	$0.00	$0.00	0.00%
Assist invalid (554)	210	2.21%	$0.00	$0.00	$0.00	0.00%
Defective elevator, no occupants (555)	5	0.05%	$0.00	$0.00	$0.00	0.00%
Unauthorized burning (561)	45	0.47%	$0.00	$0.00	$0.00	0.00%
Cover assignment, standby, moveup (571)	8	0.08%	$0.00	$0.00	$0.00	0.00%
	655	**6.87%**	**$1,000.00**	**$500.00**	**$1,500.00**	**0.09%**
6 Good Intent Call						

Dispatched and cancelled en route (611)	629	6.61%	$0.00	$0.00	$0.00	0.00%
No incident found on arrival at dispatch address (622)	184	1.93%	$0.00	$0.00	$0.00	0.00%
Authorized controlled burning (631)	10	0.11%	$0.00	$0.00	$0.00	0.00%
Steam, other gas mistaken for smoke, other (650)	2	0.02%	$0.00	$0.00	$0.00	0.00%
Smoke scare, odor of smoke (651)	66	0.69%	$0.00	$0.00	$0.00	0.00%
Steam, vapor, fog or dust thought to be smoke (652)	8	0.08%	$0.00	$0.00	$0.00	0.00%
Smoke from barbecue, tar kettle (653)	1	0.01%	$0.00	$0.00	$0.00	0.00%
EMS call, party transported by non-fire agency (661)	7	0.07%	$0.00	$0.00	$0.00	0.00%
HazMat release investigation w/no HazMat (671)	8	0.08%	$0.00	$0.00	$0.00	0.00%
	915	**9.60%**	**$0.00**	**$0.00**	**$0.00**	**0.00%**
7 False Alarm & False Call						
Municipal alarm system, malicious false alarm (711)	2	0.02%	$0.00	$0.00	$0.00	0.00%
Telephone, malicious false alarm (713)	1	0.01%	$0.00	$0.00	$0.00	0.00%
Central station, malicious false alarm (714)	2	0.02%	$0.00	$0.00	$0.00	0.00%
Local alarm system, malicious false alarm (715)	5	0.05%	$0.00	$0.00	$0.00	0.00%
Bomb scare - no bomb (721)	6	0.06%	$0.00	$0.00	$0.00	0.00%
Sprinkler activation due to malfunction (731)	13	0.14%	$0.00	$0.00	$0.00	0.00%
Extinguishing system activation due to malfunction (732)	3	0.03%	$0.00	$0.00	$0.00	0.00%
Smoke detector activation due to malfunction (733)	68	0.71%	$0.00	$0.00	$0.00	0.00%
Heat detector activation due to malfunction (734)	1	0.01%	$0.00	$0.00	$0.00	0.00%
Alarm system sounded due to malfunction (735)	131	1.38%	$0.00	$0.00	$0.00	0.00%
CO detector activation due to malfunction (736)	24	0.25%	$0.00	$0.00	$0.00	0.00%
Sprinkler activation, no fire - unintentional (741)	10	0.11%	$0.00	$0.00	$0.00	0.00%
Smoke detector activation, no fire - unintentional (743)	82	0.86%	$0.00	$0.00	$0.00	0.00%
Detector activation, no fire - unintentional (744)	37	0.39%	$0.00	$0.00	$0.00	0.00%
Alarm system activation, no fire - unintentional (745)	219	2.30%	$10.00	$5.00	$15.00	0.00%
Carbon monoxide detector activation, no CO (746)	13	0.14%	$0.00	$0.00	$0.00	0.00%
	617	**6.48%**	**$10.00**	**$5.00**	**$15.00**	**0.00%**
8 Severe Weather & Natural Disaster						
Wind storm, tornado/hurricane assessment (813)	2	0.02%	$0.00	$0.00	$0.00	0.00%
Lightning strike (no fire) (814)	6	0.06%	$5,000.00	$100.00	$5,100.00	0.29%
	8	**0.08%**	**$5,000.00**	**$100.00**	**$5,100.00**	**0.29%**
9 Special Incident Type						
Special type of incident, other (900)	9	0.09%	$0.00	$0.00	$0.00	0.00%
Recieved Mutual Aid - Automatic Alarm (900A)	2	0.02%	$0.00	$0.00	$0.00	0.00%
Recieved Mutual Aid - EMS Call (900E)	165	1.73%	$0.00	$0.00	$0.00	0.00%
Recieved Mutual Aid - Fire Call Unknown (900F)	12	0.13%	$0.00	$0.00	$0.00	0.00%
Missing Number From CAD (900G)	162	1.70%	$0.00	$0.00	$0.00	0.00%
Duplicate Incident (900I)	112	1.18%	$0.00	$0.00	$0.00	0.00%
CAD Training Incident Generation (900J)	10	0.11%	$0.00	$0.00	$0.00	0.00%
Citizen complaint (911)	1	0.01%	$0.00	$0.00	$0.00	0.00%
	473	**4.97%**	**$0.00**	**$0.00**	**$0.00**	**0.00%**
Total Incident Count:	**9515**			**Total Est. Loss:**	**$1,760,051.00**	

Search Criteria	
Dates	From 07/01/2013 To 06/30/2014 (mm/dd/yyyy)
Service	James-City County Fire
Staff	All
Apparatus	All
Station	All
Alarm Type	All
Zone/District	All

Report Description

IMAGETREND FIRE BRIDGE

Fire Incident By Street Address
From 07/01/13 To 06/30/14
Report Printed On: 08/04/2014

Incident Number	Incident Date	Alarm Time	Location	Primary Station	Incident Type
James-City County Fire					
1402198	03/31/2014	20:56	8013 POCAHONTAS TRL	2	413 Oil or other combustible liquid spill
1402077	03/26/2014	22:12	2260 I 64 E	1	413 Oil or other combustible liquid spill
1307676	10/25/2013	12:30	7770 CROAKER RD	1	413 Oil or other combustible liquid spill
Total					**3**

Search Criteria	
Dates	From 07/01/2013 To 06/30/2014 (mm/dd/yyyy)
Service	James-City County Fire
Incident Address	All
Staff	All
Apparatus	All
Station	All
Incident Type	Oil or other combustible liquid spill
Alarm Type	All
Zone/District	All

Report Description

SSORS#	Incident Date	Basin	Cause	Reported Date	Amount of Material (gal)	Amount Materials Recovered (gal)	Amount Materials to Water (gal)
103798	7/25/2013	LS 5-4	Rain - 2.5 inches Station flooded to bottom of PLC's	7/25/2013	-1/30,951 gal.WW	0	-1
103869	1/11/2014	LS 4-5	Rain and SCADA system down	1/13/2014	-1	0	-1
103877	1/21/2014	LS 1-5	Contractor for LS 1-5 Area 1 Flextran Rehab Project failed to adequately restore lateral connection and debris caught on rough opening to main.	1/21/2014	600	0	0
103893	2/11/2014	LS 1-2	Obstruction in main - 8" plug and 24" 2 x 4 left in system by contractor. Grease accumulation due to obstruction as well.	2/11/2014	500	0	0
103913	3/17/2014	LS 10-1	Rags and Grease	3/17/2014	64,507 from SCADA Monitoring	0	-1
103934	4/15/2014	LS 5-4	Heavy Rain 2-3 inches	4/17/2014	-1/64,978 gal.WW	0	-1
103935	4/15/2014	LS 6-1	Heavy Rain 2-3 inches	4/17/2014	-1/8,833 gal.WW	0	-1
103936	4/15/2014	LS 6-8	Heavy Rain 2-3 inches	4/17/2014	-1/17,500 gal.WW	0	-1
103937	4/15/2014	LS 4-5	Heavy Rain 2-3 inches	4/17/2014	-1	0	-1
103950	4/30/2014	LS 6-1	4-day Rain 3" total and 1.4" on day of spill	5/1/2014	-1/2,235 gal.WW	0	-1
103951	4/30/2014	LS 4-8	4-day Rain 3" total and 1.4" on day of spill	5/1/2014	-1/5,738 gal.WW	0	-1
103952	4/30/2014	LS 4-1	4-day Rain 3" total and 1.4" on day of spill	5/1/2014	-1/295gal.WW	0	-1
103953	4/30/2014	LS 3-3	4-day Rain 3" total and 1.4" on day of spill	5/1/2014	-1/7,820 gal.WW	0	-1
103954	4/30/2014	LS 4-5	4-day Rain 3" total and 1.4" on day of spill	5/1/2014	-1	0	-1
103956	5/4/2014	LS 1-5	Blockage - Wing Nut Plug found	5/5/2014	1,000	0	1,000
103982	5/28/2014	LS 6-6	3" forcemain Wye failed	5/28/2014	200	100	0

Sanitary Sewer Overflow Consent Order Accomplishments
for July 1, 2013 to June 30, 2014 – MS4 PY1

Activities in Entire James City Service Authority Sewer System

- Consent Order with DEQ signed September, 2007.
- Completed all tasks required under the terms of the Consent Order to date.
- HRSD received approval from the Localities, EPA and DEQ to implement what is known as the Hybrid Consolidation Agreement. Under this agreement HRSD will develop a Regional Wet Weather Management Plan (RWWMP) that will include rehabilitation and capacity enhancements in the Localities and HRSD's wastewater systems to ensure elimination of wet weather related Sanitary Sewer Overflows (SSOs) for an agreed upon level of service (i.e., 2-, 5-, or 10-year level of service to be established by EPA and HRSD at a later date). The Localities will still own, operate and maintain their individual wastewater collection and conveyance systems but HRSD will fund and administer the improvements within the Localities systems in accordance with the approved RWWMP. Under the terms of the Hybrid Consolidation Agreement, HRSD will take responsibility for wet weather related SSOs. Localities will be responsible for making repairs within their systems when significant defects are discovered such as excessive inflow and infiltration, root and grease blockage, and/or damage from directionally drilled borings of other utilities through pipes and manholes. HRSD must submit the RWWMP to EPA by November 2016 for review and approval.
- HRSD designed and initiated construction of a temporary Pressure Reducing Pumping System near the Route 199 and Kingsmill Road intersection. The system is designed to automatically operate when upstream pressures in the force main exceed predetermined limits typically experienced during heavy rain events. The introduction of the pump system will reduce pressures in the HRSD Interceptor Force Main and allow 90 % of JCSA's connected pump stations to operate more efficiently. It is expected that this temporary interim solution will significantly reduce wet weather related SSOs until the RWWMP is implemented. Construction is expected to be completed by December of 2014.

Activities in Waterways Impaired for Bacteria

- Powhatan Creek
    - Construction is almost complete for a $1.35 million cured-in-place pipe lining project for 11,450 LF of 15-18 inch gravity sewer pipe along Chisel Run (tributary to Powhatan Creek). The project is expected to significantly reduce I/I and add structural integrity to the old fiberglass pipe.
    - JCSA conducted an evaluation of about 20,000 linear feet of gravity sewer mains in the First Colony neighborhood using the state of the art Electro Scan technology. This particular collection system experiences significant increases in flow during wet weather indicating that inflow and infiltration is prevalent. The Electro Scan inspection uses a probe that travels through the pipes while emitting and electrical signal. The signal is

picked up by a ground rod if it escapes the pipe wall thus indicating a defect. The strength of the signal is an indication of the severity of the defect. JCSA will supply the results of the study to HRSD for use in developing the RWWMP.

  - JCSA continued inspecting manholes in its gravity sewer system. Manholes determined to be significantly degraded are rehabilitated using grout injection to eliminate sources of inflow and infiltration where necessary, and then relined using an epoxy coating system.
  - Pipe repairs that eliminated significant sources of I/I were completed.
- Mill Creek
  - JCSA continued inspecting manholes in its gravity sewer system. Manholes determined to be significantly degraded are rehabilitated using grout injection to eliminate sources of inflow and infiltration where necessary, and then relined using an epoxy coating system.
  - Pipe repairs that eliminated significant sources of I/I were completed.
- Skiffes Creek
  - JCSA continued inspecting manholes in its gravity sewer system. Manholes determined to be significantly degraded are rehabilitated using grout injection to eliminate sources of inflow and infiltration where necessary, and then relined using an epoxy coating system.
  - Pipe repairs that eliminated significant sources of I/I were completed.

Illicit Discharge Detection and Elimination

IDDE

Complaint IDDE Response:

- Receive complaint by telephone, e-mail, or another source.
- Log complaint into DICE system (Stormwater Division's tracking system).
- Check inlet structure at complaint site for illicit discharge based of complaint
    - Document the following to help determine illicit discharge
        - Is there a discharge?
        - Is discharge permitted?
        - Color/odor of flow?
        - Evidence of pollutants (suds, deposits, etc)?
        - Follow up needed?
    - Follow storm sewer system upstream while visually inspecting at man hole locations
        - Visual inspection by confined space entry or pole camera
            - Photo documentation
    - If illicit discharge evidence is present or illicit discharge is found:
        - Alert property owner of illicit discharge and issue "Notice of Site Visit" or "Notice of Inspection" documenting illicit discharge and expected actions to be taken
        - Re-inspect location to check for corrective actions taken and determine no further illicit discharge is taking place
        - If actions have not been taken issue "Notice of Violation" and follow up as needed until cleanup actions have taken place
        - If the issuance of the Notices does not achieve compliance, violations are to be forwarded to County Attorneys' office for review.

Dry Weather Screening

IDDE Dry Weather

Within MS4 system:

- Inventory/map all outfalls within MS4
  - Using Trimble GPS unit, outfalls are marked and uploaded by GIS technician into outfall layer
  - As Built plans are surveyed and all outfalls are added to GIS by technician
  - All outfalls verified by staff to confirm location and structural condition
  - Site data including closest rain gauge, watershed, site description, conveyance type and size,
- "Dry Weather" is a period 72 hours after last rainfall event that produces runoff
- Screening minimum of 50 outfalls per calendar year
  - Site prioritized by land use
    - 1. Parks/ Recreation Center
    - 2. Public Works Buildings
    - 3. Fire Stations
    - 4. Schools
    - 5. Transfer Stations/ Marina/Office Buildings
  - Check for flow at outfall
    - Document time since last rain
    - Document the following to help determine illicit discharge
      - Is there a discharge?
      - Is discharge permitted?
      - Color/odor of flow?
      - Evidence of pollutants (suds, deposits, etc)?
      - Follow up needed? Coliscan test?
      - Water temp/pH/chlorine/flow rate

- Reporting
    - S: Drive
        - All data is upload to dry weather screening database and maintained by GIS technician
- If an illicit discharge is suspected:
    - Look into upstream land use of storm sewer system for possible causes
        - Follow storm sewer system upstream while visually inspecting at man hole locations
            - Visual inspection by confined space entry or pole camera
                - Photo documentation
        - Report to building supervisor to have repaired or further investigated by staff for future repair
        - All follow ups and repairs will be made within the next calendar year with priority given to suspected sanitary sewer discharges while discharges contained under VPDES permit will not require further investigation

MS-4 Dry Weather Inspections
Watershed/Area/Facility

Watershed M/H I.D. Number											
Date											
Type of Structure											
Structual Damage (Y/N)											
Type of Pipe (In/Out)											
Size of Pipe (In/Out)											
Shape of Pipe											
Outfall Submerged (N/P/F)											
Photos Taken (Y/N)											
Flow (T/M/S)											
Sediment (N/P/F)											
Inspector											
Commments											

Appendix C-4

Exhibits for Minimum Control Measure #4 – Construction Site Stormwater Runoff Control

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 1105, Richmond, Virginia 23218
Fax: 804-698-4019 - TDD (804) 698-4021
www.deq.virginia.gov

Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4020
1-800-592-5482

March 29, 2014

Sanford B. Wanner, County Administrator
James City County
101 Mounts Bay Rd.
Williamsburg VA 23187Address

Dear Mr. Wanner:

In accordance with §62.1-44.15:27 G of the Virginia Stormwater Management Act (Act), Department of Environmental Quality (DEQ) has completed the review of James City County's Virginia Stormwater Management Program (VSMP) application package submitted on January 14, 2014. Based on this review, DEQ has determined that the County's VSMP is consistent with the Act, the VSMP regulation and the General VPDES Permit for Discharges of Stormwater from Construction Activities.

In light of this determination, DEQ approves James City County's VSMP; and the County is authorized to operate a VSMP beginning on July 1, 2014. Please note that this approval is based on the content of the application package. Any changes made to the documents in the package after the approval date, including changes to the adopted ordinance, may necessitate DEQ evaluation as part of its compliance review of your approved VSMP.

Thank you for your cooperation in developing a VSMP. We look forward to continuing to assist the County with the implementation of its VSMP.

Sincerely,

David K. Paylor

cc: Melanie Davenport, Director, Water Division
Frederick Cunningham, Director, Office of Water Permits
Joan Salvati, Manager, Local Government Stormwater Programs

MS4 FY14 (PY1)

Engineering & Resource Protection Division - Director's Worksheet

Measure	FY03	FY04	FY05	FY06	FY07	FY 08	FY09	FY10	FY11	FY12	FY13	FY14
E&S, Drainage & Stormwater plans reviewed	171	185	195	209	216	261	189	167	195	170	147	**191**
Land Disturbing Permits issued	75	96	93	100	78	77	63	49	57	49	37	**63**
Project E&S compliance inspections	3,586	2,665	3,074	2,586	4,138	4,037	2,730	3,992	2,580	2,379	1,616	**1,790**
Single-Family E&S plans reviewed	801	889	889	727	577	254	195	273	307	292	354	**361**
Single Family E&S compliance inspections	2,695	2,576	2,920	2,738	2,052	776	1,188	843	1,317	1,056	1,493	**1,567**
Wetland Board cases heard	13	14	9	10	9	7	13	8	7	6	12	**7**
Wetlands JPA Reviews - no case	Not tracked				36	25	28	10	22	22	18	**18**
Chesapeake Bay Board cases hearc		0	13	27	44	39	21	26	29	27	25	**33**
CBPA Program administrative cases (CBE's)	35	46	69	102	69	113	125	129	112	170	135	**123**
Perennial Stream Determinations (PFDs)		47	133	84	138	123	98	104	66	189	220	**135**
Septic System Pumpouts documented	250	95	400	495	492	1,239	676	656	299	686	918	**1,068**
Streetlight Requests handled	Not tracked								7	5	7	**11**
Special Stormwater Criteria applied	Not tracked						14	36	49	32	37	**82**
Percentage of Erosion & Sediment, Drainage and Stormwater Plans Reviewed within 30 Days of Receipt	97.0%	88%	83%	76%	82%	79.7%	96.3%	97.6%	97.5%	99.4%	98.7%	**96.3%**
Percentage of Erosion & Sediment, Drainage and Stormwater Plans Reviewed within 21 Days of Receipt			60%	64%	71%	58.5%	82.5%	88.0%	92.9%	94.7%	89.8%	**92.7%**
Total Number of Plans processed by the Division (all plans of development, not single-family)	389	436	522	582	610	661	429	383	391	343	328	**441**
Percentage of total plans approved by the Division within 3 submittals (all plans of development, not single-family)	Not tracked					90.7%	92.2%	91.1%	84.9%	87.1%	83.2%	**88.7%**
Total Land Area Serviced - Plan Review (acres)	Not tracked									150.1	150.7	**249.16**

E & S Data
James City
Jul 2013 to Jun 2014

Approved E&S Plans

TOTAL: 63

HUC Codes

	JL26	JL27	JL28	JL29	JL30	JL31	JL33	JL34	JL35	YO62	YO63	YO65	YO67	YO68	Total
July, 2013			1			4									5
August, 2013						4	1	1		1					7
September, 2013						3				1					4
October, 2013						2		1							3
November, 2013			1	1		2		3	1						8
December, 2013							1	2	1			1			5
January, 2014						1			1						2
February, 2014			1						2						3
March, 2014		1		1		3			2	1					8
April, 2014						2	1		2						5
May, 2014			1			2		1							4
June, 2014		2	2	1		1	1		1	1					9
HUC Totals:		3	6	3		24	4	8	10	4		1			63

Disturbed Acres on Approved E&S Plans

TOTAL: 218.55

HUC Codes

	JL26	JL27	JL28	JL29	JL30	JL31	JL33	JL34	JL35	YO62	YO63	YO65	YO67	YO68	Total
July, 2013			53.35			4.47									57.82
August, 2013						19.7	0.93	0.3		10.96					31.89
September, 2013						2.57				0.58					3.15
October, 2013						0.31		0.33							0.64
November, 2013			0.76	17.23		3.18		1.83	0.21						23.21
December, 2013							0.31	3.56	0.1			0.55			4.52
January, 2014						0.41			1.32						1.73
February, 2014			0.4						3.56						3.96
March, 2014		0.19		0.18		26.78			5.29	2.15					34.59
April, 2014						8.24	1.6		0.49						10.33
May, 2014			34.44			3.52		0.97							38.93
June, 2014		1.47	0.56	0.79		1.32	0.22		0.66	2.76					7.78
HUC Totals:		1.66	89.51	18.2		70.5	3.06	6.99	11.63	16.45		0.55			218.55

E&S Inspections

TOTAL: 1673

HUC Codes

	JL26	JL27	JL28	JL29	JL30	JL31	JL33	JL34	JL35	YO62	YO63	YO65	YO67	YO68 Total
July, 2013			25	14	2	79	10	6	8	14				158
August, 2013			18	13	3	59	9	5	4	13	1	1		126
September, 2013			26	13	4	68	10	3	5	10	1	1		141
October, 2013			20	17	4	109	5	5	5	25	1	1		192
November, 2013			22	12		81	13	5	5	13	3	1		155
December, 2013			9	10	3	72	5	5	7	1	1	1		114
January, 2014	0	0	18	17	0	71	8	14	4	12	0	1		145
February, 2014	1	0	15	17	0	58	6	10	10	21	2	0		140
March, 2014			18	12	0	53	8	14	12	29	0	1		147
April, 2014			17	22	1	73	5	13	8	29				168
May, 2014			24	21		92	8	8	4	30				187
June, 2014														
HUC Totals:	1	0	212	168	17	815	87	88	72	197	9	7		1673

E&S Enforcement Actions

TOTAL: 17

HUC Codes

	JL26	JL27	JL28	JL29	JL30	JL31	JL33	JL34	JL35	YO62	YO63	YO65	YO67	YO68 Total
July, 2013			1	0	2	2	0	0	0	1				6
August, 2013			0	0	0	1	2	0	0	0	0	0		3
September, 2013			0	0	0	0	0	0	1	0	0	0		1
October, 2013			0	0	0	0	0	0	0	0	0	0		0
November, 2013			0	0		0	0	0	0	0	0	0		0
December, 2013			0	0	0	0	0	0	0	0	0	0		0
January, 2014	0	0	0	0	0	0	0	0	0	0	0	0		0
February, 2014	0	0	1	0	0	0	0	0	0	0	0	0		1
March, 2014						1								1
April, 2014			1	1										2
May, 2014			1			1			1					3
June, 2014														
HUC Totals:	0	0	4	1	2	5	2	0	2	1	0	0		17

Douglas W. Domenech
Secretary of Natural Resources

David A. Johnson
Director

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION
203 Governor Street
Richmond, Virginia 23219-2010
(804) 786-1712

April 4, 2012

Environmental Division
APR 13 2012
RECEIVED

Robert C. Middaugh
County Administrator
James City County
101 Mounts Bay Road
Williamsburg, VA 23185

Re: James City County Erosion and Sediment Control Program

Dear Mr. Middaugh:

In response to information presented to the Virginia Soil and Water Conservation Board by the Department of Conservation and Rectreation Staff, The Board approved the following motion:

> "The Virginia Soil and Water Conservation Board commends James City County for successfully improving the County's Erosion and Sediment Control Program to become fully consistent with the requirements of the Virginia Erosion and Sediment Control Law and Regulations, thereby providing better protection for Virginia's soil and water resources."

We congratulate James City County on this substantial accomplishment and recognize the County's efforts to proactively protect Virginia's soil and water resources through implementation of effective erosion and sediment control.

Sincerely,

A. Reese Peck

A. Reese Peck, Director,
Division of Stormwater Management

cc: Wayne Davis, Tappahannock Regional Office Manager, DCR
Scott Thomas, ESC Program Administrator, James City County
Mike Vanlandingham, Stormwater Compliance Specialist, DCR
Kenneth Harper, Local Program Compliance Coordinator, DCR

LD PERMIT REPORT

PERMIT NUMBER	WATRSHED CODE	HUC	ISSUE DATE	PLAN #	NAME	ACRES DISTURBED	COMMENTS
14-01	PC-611	JL31	7/11/2013	SP-047-13	CAROLINA FURNITURE - 2013 (5431 & 5425 Richmond Rd)	0.23	Own/Dev: Joseph H Steele, II RECORDS BOX 5698
14-02	YC-179	JL28	7/17/2013	S-041-12	COLONIAL HERITAGE - PHASE V - SECTION 1 (499 Jolly Pond Rd)	53.35	Z-03-02/Z-04-02 Plan in rack OS-12 10/25/2012 $11,550 E&S paid 8/2/13 $490 E&S paid 3/31/14 Amendment S-46-13 Approved
14-03	PC-102	JL31	7/19/2013	SP-054-12	POWHATAN RESORT SIDEWALK AND PARKING SP-0038-2012 (3601 Ironbound Rd)	3.00	Rack # 74 Plan Approved 10/10/12 This plan is also assigned SP-038-12 referenced in surety and permits SP-030-13 Entrance Revisions also in this file
14-04	PC-103	JL31	7/22/2013	SP-001-13	NEW TOWN - SECTION 9 - SETTLERS MARKET MAJOR B RETAIL BUILDINGS & PetCo (5225 Settler's Market Blvd)	0.64	See MP-13-05/Z-16-05 Plan approved 4/25/13 SJT Amended to include SP-108-13 PETCO Box 5697
14-05	PC-070	JL31	7/25/2013	SP-023-13	JCC - REC CENTER FORCE MAIN(5301 Longhill Rd)	0.60	County project all fee waived 6/5/13-Plan Approved SJT RECORDS BOX 5698
14-06	WC-100	YO62	8/6/2013	S-005-13	WHITE HALL - SECTION 3 (3401 Rochambeau)	10.96	C-041-12 Proffers assoc with Z-11-05/SUP-18-05 ERP approved plan 5/2/13; Plat approved 8/7/13 S-057-13 Trail Amend apprvd SJT 12/22/13
14-07	PC-106	JL31	8/8/2013	SP-025-13	FORD'S COLONY - SECTION III - DRAINAGE IMPROVEMENTS FOR LOTS 16-18, ST ANDREWS DRIVE	0.14	E&S fee paid- rec 2270
14-08	PC-105	JL31	8/8/2013	SP-069-12	FORD'S COLONY - SECTION 6 DRAINAGE IMPROVEMENTS (Lots 129-132 & 139-142) Bumham & Berrow Rd	0.25	E&S fee not paid on Rec 2270
14-09	PC-104	JL31	8/8/2013	SP-024-13	FORD'S COLONY - SECTION VI - DRAINAGE IMPROVEMENTS FOR LOTS 152 & 153, BERROW & BURNHAM ROW	0.13	8/5/13 E&S PD-Rec #2279
14-10	MC-150	JL33	8/20/2013	SP-015-13	COURTHOUSE COMMONS - Parcel 2 (Monarch Bank)	0.93	Box 5697
14-11	MC-149	JL34	8/20/2013	SP-019-13	COURTHOUSE COMMONS - PARCEL 3 - Retail Bldgs (5239 Monticello)	0.30	ERP approved 5/1/13 Box 5697
14-12	PC-107	JL31	8/26/2013	SP-093-12	NEW TOWN - SECTION 12 - OXFORD APARTMENTS (FOUNDERS VILLAGE) (3950 Windsormeade Way)	19.18	SP&AM in Rack OS-18; MP-01-12/ Z-03-12 Proffer 7 - Water Conservation 11/21/13 Retaining Wall Am SP-0107-13 approv. 4/24/14 SP-015-14 Am #2 approv.
14-13	PC-108	JL31	9/11/2013	SP-004-13	SEVENTH DAY ADVENTIST CHURCH EXPANSION (3989 John Tyler Hwy)	0.99	Z-01-12/SUP-01-12 1/15/13 $450 E&S pd DM 9/9/13 additional $144 E&S pd
14-14	WC-208	YO62	9/17/2013	SP-039-12	WJCC - STONEHOUSE ELEMENTARY SCHOOL STORMWATER FACILITY REPAIR/RETROFIT; 3651 ROCHAMBEAU DRIVE	0.58	Submitted by JCC SW Div-Fee waiver Plan in Rack #59 IFB13-6000 Plan reads SP-0032-2012
14-15	PC-069	JL31	9/27/2013	S-026-13	BERNFELD FAMILY SUBDIVISION (6120 CENTERVILLE RD)	0.29	7/23/13 E&S Plan for gravel drive approved
14-16	PC-068	JL31	9/27/2013	SP-066-13	NEW TOWN - SECTION 6 - BLOCK 20 PARCEL B DISCOVERY PARK PLACE (5416 DISCOVERY PARK BLVD)	1.29	MP 5-04/Z 5-04; 2/14/14 AMENDED SP 09-14 SJT
14-17	PC-067	JL31	10/1/2013	SP-060-13	FORD'S COLONY - SECTION 7 (7-A) - LOTS 98 & 99 DRAINAGE IMPROV (112/117 Seminole)	0.10	10/01/13 SP-060-13 - PD $64.40 FEE
14-18	CC-102	JL34	10/16/2013	E&S-12-13	110A ARCHERS HOPE - CAVINESS DRIVEWAY PLAN	0.33	9/18/13 E&S Fee pd rec #2296, RECORDS BOX 5698
14-19	PC-066	JL31	10/16/2013	E&S-20-13	5162 ROLLISON DRIVE (Lot 46, New Town, Section 7 Phase 10)	0.21	E&S Rec #2315
14-20	PC-065	JL31	11/5/2013	SP-026-13	JCC - FIRE STATION NO. 4 (5312/5316 OLDE TOWNE RD)	3.03	fee waived - County project Plan in Rack #40
14-21	PC-064	JL31	11/7/2013	SP-006-13	NTELOS COMMUNICATIONS FACILITY (NR-6422) - FORD'S COLONY	0.15	RECORDS BOX 5698

PERMIT NUMBER	WATRSHED CODE	HUC	ISSUE DATE	PLAN #	NAME	ACRES DISTURBED	COMMENTS
14-22	CC-103	JL34	11/7/2013	SP-055-13	JCSA / HRSD INTERIM PRESSURE REDUCING STATION (6735 Humelsine - 199)	0.08	SP Subj to Master Plan & SUP-03-13 conditions
14-23	GC-026	JL29	11/7/2013	S-117-05	LIBERTY RIDGE SUBDIVISION - SECTION 2 ONLY (5365 Centerville)	17.23	E&S fee for 139 lots on Section 1 Record In LIBERTY RIDGE SUBDIVISION FILE SECTION 1 ON SEPARATE RECORD (Same Plan #) #OS-03 Plans in Rack
14-24	CC-104	JL34	11/18/2013	E&S-19-13	WILLIAMSBURG LANDING GROUNDS MAINTENANCE BUILDING - HYBRID PHASE PLAN- 5560 WILLIAMSBURG LANDING DRIVE	1.55	SP-77-06 Amended SP-62-09 SP-37-10 Woodhaven Ph 2 10/31/13 E&S pd Rec #2330
14-25	JR-266	JL35	11/22/2013	SP-054-13	BUSCH GARDENS FLOATING BRIDGE REPLACEMENT	0.21	11/13 E&S fee rec #2336 E&S Plan approved 7/23/13 Also see E&S-09-013 Box 5697
14-26	CC-105	JL34	11/26/2013	SP-093-13	WILLIAMSBURG LANDING - THE COTTAGES - 5610 BOATWRIGHT CIRCLE - 5550 WILLIAMSBURG LANDING DRIVE	0.20	SUP-02-13
14-27	CR-013	JL28	11/27/2013	E&S-14-13	RIVERS BEND AT UNCLES NECK LOT 29 and 31 - EROSION CONTROL AND CLEARING (7592, 7616 & 7624 Uncles Neck)	0.76	E&S FEE PD Rec#2248 E&S Approved 8/26/13 11/14/13 Final E&S approved Lot 22 removed from plan
14-28	YR-061	Y065	12/9/2013	SP-103-13	DRINKWATER HORSE BARN (255 Peach St)	0.55	11/19/13 PLAN APPROVED 12/5/13 E&S pd Rec #2348
14-29	CC-106	JL34	12/10/2013	SP-113-11	CHAMBREL MEMORY CARE FACILITY - 3800 TREYBURN DRIVE	1.86	SP Rack # 21
14-30	MC-208	JL33	12/17/2013	E&S-25-13	BORROW PIT RECLAMATION (3000 IRONBOUND RD)	0.31	E&S FEE Rec #2349
14-31	JR-267	JL35	12/23/2013	SP-098-13	BUSCH GARDENS - NEW TRAPPER RESTROOM	0.10	E&S fee Pd - Rec #2355 Amends SP-058-13 for demo Box 5697
14-32	MC-136	JL34	12/23/2013	S-039-13	3893 STRAWBERRY PLAINS ROAD	1.70	11/18/13 PLAN APPROVED
14-33	JR-268	JL35	1/9/2014	E&S-09-13	BUSCH GARDENS DREDGE EROSION CONTROL PLAN - 7841 Pocahontas Tr	1.32	Also see SP-054-13 Floating Bridge Repl. E&S fee Rec 2336 Box 5697
14-34	PC-109	JL31	1/23/2014	SP-081-13	NEW TOWN - SECTION 9 -SETTLERS MARKET OUTPARCEL D - ZOES RESTAURANT - (4540 CASEY BLVD)	0.41	SUBJECT TO PROFFERS & MASTER PLAN UNDER Z-0016-2005/MP-0013-2005 11/12/13 PLAN APPROVED. 1/14/14 AMEND APPROV
14-35	JR-101	JL35	2/12/2014	SP-127-07	KINGSMILL - VERIZON WIRELESS TOWER (listed as: Verizon Wireless Frances Thacker Rd in CaseTrak)	1.78	PLAN RACK 24 Final SP apprvl 1/23/13 E&S fee includes SP-131-07
14-35	JR-101	JL35	2/12/2014	SP-131-07	KINGSMILL - AT&T WIRELESS TOWER (listed as: New Cingular Wireless Frances Thacker Rd in CaseTrak)	1.78	PLAN RACK 35 - all other docs in file with SP-127-07 Final SP apprvl 1/23/13 2/10/14 - E&S fee on SP-127-07
14-36	YC-080	JL28	2/13/2014	SP-079-07	THE CANDY STORE TAPER AND BMP UPGRADE (6623 Richmond Rd - Sears)	0.40	SP in Rack 83 SUP-20-96 Plan Revised 2/22/12 Final SP 5/4/12
14-37	WC-010	YO62	3/4/2014	SP-033-13	JACOB'S INDUSTRIAL CENTER - PARCEL 6 (256 Industrial Blvd - Signature Stone Corp)	2.15	Fees waived SW & E&S - Enterprise Zone Plan in Rack #33 Final Plan rec'd 10/3/13
14-38	PC	JL31	3/5/2014	SP-037-12	THE SETTLEMENT AT POWHATAN CREEK - PHASE 3 (4101 MONTICELLO)	15.32	SWM-005-12 E&S Fee $3780 on S + $1260 on SP. SP-Rack 125
14-39	JR-200	JL35	3/5/2014	SP-008-14	BUSCH GARDENS - BUS STOP SHELTER & ACCESS RTE (7851 POCAHONTAS TR)	0.09	1/28/14 APPRVD SJT AM SP-044-99 E&Spd on #2387 Box 5697
14-40	JR-102	JL35	3/13/2014	E&S-21-13	KINGSMILLPLANTATION GOLF COURSE HOLE 18 RECONSTRUCTION (1000 KINGSMILL ROAD)	5.20	11/22/13 E&S plan approved E&S fee paid Rec #2389
14-41	DC-033	JL27	3/14/2014	E&S-07-14	3006 FORGE ROAD - JOSS RESIDENCE - SWIMMING POOL	0.19	E&S rec #2388 Box 5697

LD PERMIT REPORT

PERMIT NUMBER	WATRSHED CODE	HUC	ISSUE DATE	PLAN #	NAME	ACRES DISTURBED	COMMENTS
14-42	PC-063	JL31	3/25/2014	SP-097-13	NEW TOWN - SECT 9 - SETTLERS MARKET EAGLE RESIDENTIAL -TOWNHOMES - (4509, 4520 CASEY BLVD)	9.70	10/24/13 pd $7,644 3/20/14 pd $504 Z-016-05/Z-3-11/MP-013-05/MP-2-11/C-040-13 S-014-14 PLAT VILLAGE WALK AT NEW TOWN PH1, LOTS 1-47, COS#1&#2; 3/24/14 approv SJT
14-43	GC-027	JL29	3/28/2014	SP-67-13	JAMES RIVER BAPTIST CHURCH REC IMP (4931 Centerville Road)	0.18	AMENDMENT TO SP-44-06 E&S Approved SJT 10/23/13
14-44	PC-062	JL31	3/31/2014	SP-011-14	NEW TOWN - SECTION 3 & 6 - BLOCK 21 - PARCEL B (5425 DISCOVERY PARK BOULEVARD)	1.76	2/18/14 plan approv SJT 3/28/14 BLA S-05-14 to create this lot
14-45	MC-130	JL33	4/1/2014	SP-077-13	CONWAY GARDEN DRAINAGE IMPROVEMENTS (750 CONWAY DRIVE)	1.60	11/21/13 SP APPROV
14-46	PC-111	JL31	4/1/2014	SP-119-13	WJCC - LAFAYETTE HIGH SCHOOL - FOOTBALL PRACTICE FIELD REPAIR - (4460 LONGHILL ROAD)	1.69	NO E&S OR SW FEE-CO PROJECT; IFB #14-6296
14-47	JR-220	JL35	4/7/2014	SP-001-14	KINGSMILL - WOOD COURSE - DRNG IMPRVMNT PLN - PH II - (8581 POCAHONTAS TRAIL) (HOLE 10, AREA 1 & 2)	0.42	PLAN APPROV SJT 3/14/14
14-48	JR-103	JL35	4/7/2014	SP-075-11	WJCC - JAMES RIVER ELEMENTARY SAFE ROUTES TO SCHOOL INTERSECTION IMPROVEMENTS (8901 Pocahontas)	0.07	Approved Site Plan 9/20/11
14-49	PC-060	JL31	4/14/2014	SP-090-13	NEW TOWN - SECTION 7 - PARCEL C - (Lots 1-75) (5455 Center Street)	6.55	C-014-13; Z-5-06/MP-7-06 Plans in Rack #17 3/13/14 Plan aprvd 5/5/14 S-25-14 Phase A 30 lots aprvd
14-50	PC-112	JL31	5/9/2014	SP-013-14	NEW TOWN - PIER 1 AT SETTLERS MARKET (S-9) (4540 CASEY BLVD)	0.89	Z-16-05/MP-13-05 #80 PLANS IN RACK PLAN APPROV 4/14/14 SJT SP-046-14 AMDMT
14-51	CC-107	JL34	5/16/2014	SP-110-13	ANHEUSER-BUSCH BREWERY - FAB TOTE HANDLING BREWERY (7801 POCAHONTAS TRAIL)	0.97	PROP IN ENTERPRISE ZONE PLAN APPROV 4/14/14 SJT Plans in Rack #15
14-52	YC-180	JL28	5/16/2014	SP-087-12	VILLAGE AT CANDLE STATION (The) - (7551 & 7567 Richmond Rd.)	34.44	*S-47-12 142 Twnhs 33 SFD Rack #OS-36 MP-3-8; Z-3-8; SWM-01-13; BLA S-29-13 E&S fee ok per SJT 4/23/14 plan approv
14-53	PC-059	JL31	5/21/2014	SP-109-13	KING OF GLORY LUTHERAN CHURCH ADDITION -- PHASE 1 (4897 LONGHILL ROAD)	2.63	SWM-02-12 SUP-13-12 4/28/14 E&S appoved SJT PLAN IN RACK #57
14-54	PC-061	JL31	6/5/2014	SP-095-13	NEW TOWN - SECTION 7 - PARCEL B - (LOTS 107-124) (5400 CENTER ST) (18 TOWNHOMES)	1.32	Subdivided from SP-095-13 by S-48-13 2/18/14 PLAN APPROV SJT
14-55	DC-034	JL27	6/5/2014	E&S-15-14	CHRIST COMMUNITY CHURCH RECREATION FIELD (9001 RICHMOND ROAD WEST)	1.15	SP-0021-2014 in Planning E&S Receipt #2435
14-56	JR-269	JL35	6/9/2014	E&S-20-14	BUSCH GARDENS - AMPITHEATRE EARTHWORK OPERATIONS (7851 Pocahontas)	0.66	E&S pd on rec #2438; plan approv 6/9/14
14-57	DC-035	JL27	6/10/2014	E&S-17-14	1724 CENTENNIAL DRIVE - ERMATINGER RESIDENCE - TENNIS COURT	0.32	E&S fee Rec #2440 6/10/14 Approv SJT
14-58	YC-181	JL28	6/17/2014	E&S-22-14	TOANO MIDDLE SCHOOL RUNNING TRAIL (SHIP) (7817 RICHMOND ROAD)	0.24	E&S FEE, SILTATION &SURETY ARE WAIVED 6/11/14 PLAN APPROV SJT
14-59	WC-101	YO62	6/18/2014	SP-035-13	WHITE HALL EAST OFF-SITE SEWER (3611 Rochambeau, 101 School House & 8290 Richmond)	2.76	Previously submitted as SP-007-11 E&S fee collected 1/14/11 & 7/12/12 5/27/14 Plan approv
14-60	CR-014	JL28	6/30/2014	E&S-10-14	RIVERS BEND AT UNCLES NECK - LOT 22 DRIVEWAY CLEARING PLAN (7588 UNCLES NECK)	0.32	E&S fee Rec 2437 & 2458 6/23/14 plan approved
14-61	GC-028	JL29	6/30/2014	E&S-09-14	WJCC - MATOAKA ELEMENTARY SCHOOL - DRAINAGE IMPROVEMENTS - (4001 BRICK BAT ROAD)	0.79	E&S FEE WAIVED COUNTY PROJECT IFB #14-6503 5/16/14, revis.plan sheets & slip sheets.
14-62	MC-209	JL33	6/30/2014	SP-033-14	WJCC - RAWLS BYRD ELEMENTARY - SECURITY WALL (112 LAUREL LANE)	0.22	NO E&S FEE, COUNTY PROJECT IFB #14-6504 SUP-034-06 / AMEND OF SP-045-07 5/16/2014 PLAN APPROV SJT

Beginning Date: 7/1/2013
Ending Date: 6/30/2014

PERMIT NUMBER	WATRSHED CODE	HUC	ISSUE DATE	PLAN #	NAME	ACRES DISTURBED	COMMENTS

Total acres disturbed:	218.5423
Total Projects Listed:	63

Engineering and Resource Protection Division
101-A Mounts Bay Road
Williamsburg, VA 23187-8784
757-253-6670
jamescitycountyva.gov

JAMES CITY COUNTY, VIRGINIA

ATTACHMENT # 6

SUPPORTING PROGRAM MATERIALS (JAMES CITY COUNTY, VA)

Note: All materials subject to change based on further program development

LIST

- VESCP/VSMP ORDINANCE SUMMARY
- VESCP/VSMP AUTHORITY - LOCAL PERMIT APPLICATION
- COUNTY STANDARD SWPPP NOTES
- DESIGN PLAN CHECKLIST (SWPPP)
- COUNTY DRAINAGE STANDARDS
- DECLARATION OF COVENANTS – INSPECTION/MAINTENANCE AGREEMENT
- VESCP – E&S INSPECTION REPORT
- VSMP – INSPECTION CHECKLIST
- ASBUILT/CONSTRUCTION CERTIFICATION CHECKLIST
- SWPPP – PPP TEMPLATE
- SWPPP – SINGLE FAMILY TEMPLATE
- VSMP – CGP CONSTRUCTION INSPECTION CHECKLIST (DEQ)

Erosion and Sediment Control and Virginia Stormwater Management Program Ordinance Requirements

Before you clear, grade, excavate, transport, and fill land in James City County, you may need to prepare a stormwater pollution prevention control plan (SWPPP) which includes, as applicable, an erosion and sediment control (E&SC) plan, a stormwater management (SWM) plan, and a pollution prevention plan (PPP)and obtain a Land-Disturbing or VSMP Permit and/or receive coverage under the General VPDES Permit for the Discharge of Stormwater from Construction Activities (VAR10) in accordance with Virginia Stormwater Management Program (VSMP) and Chapter 8 ordinance requirements. The County is designated as Virginia Erosion and Sediment Control Program (VESCP) and Virginia Stormwater Management Program (VSMP) authorities and because the County is a locality situated in Tidewater Virginia, it is subject to the Chesapeake Bay Act and Regulations. In general, if you plan to disturb an area in excess of 2,500 square feet (an area 50 feet by 50 feet) and it is for other than agricultural or forestry related purposes, preparation of a SWPPP and registration and coverage for a construction general permit (CGP) and/or a local VESCP and/or VSMP permit is required. In order to obtain proper exemptions for agricultural and forestry related activities, you must be properly registered and follow the requirements of those programs in accordance with Chesapeake Bay Preservation Area (CBPA) requirements.

To determine if you will need to obtain coverage for your Land-Disturbing Activity (LDA), contact:

Department of Development Management
Engineering and Resource Protection Division
101-E Mounts Bay Road
P.O. Box 8784
Williamsburg, VA 23187
Phone: (757) 253-6670
Fax: (757) 259-4032

Also, visit the Engineering and Resource Protection Division website at www.jamescitycountyva.gov/resourceprotection where additional information and application forms are available.

In the case of construction of single-family residences, a Land-Disturbing Permit is not required. However, a Building Permit must be applied for and Zoning and Engineering and Resource Protection approval must be obtained before a lot can be cleared. This also includes completing an Agreement in Lieu of a Plan for erosion and sediment control and stormwater management purposes. For information about the Building Permit process, call Building Safety and Permits at (757) 253-6626.

If a local land disturbing or stormwater discharge authorization permit or VSMP coverage is required for your project, the following items must be prepared, submitted or obtained:

1. The project must obtain **Preliminary Approval**, if applicable.

2. An approved **Erosion and Sediment Control (E&SC) Plan,** as part of a Stormwater Pollution Prevention Plan (SWPPP), is required**.** This plan details, in narrative and plan format, the measures, methods and techniques to be implemented to control erosion and sedimentation prior to, during, and after land-disturbing activities. This plan must be prepared in accordance with the provisions of the Virginia Erosion and Sediment Control Handbook (VESCH) and Chapter 8 of the Code of James City County. The plan also must include the James City County, Engineering and Resource Protection Division, Erosion and Sediment Control and Stormwater Management Design Plan Checklist and Standard Erosion and Sediment Control Notes.

3. An approved **Stormwater Management (SWM) Plan,** as part of a Stormwater Pollution Prevention Plan (SWPPP), or an agreement in lieu of a stormwater management plan (as applicable), is required.

4. An approved **Pollution Prevention Plan (PPP) ,** as part of a Stormwater Pollution Prevention Plan (SWPPP) is required (as applicable).

5. Evidence of registration for coverage for a General VPDES Permit for the Discharge of Stormwater from Construction Activities (VAR10) and VSMP is required.

6. A completed **Land Disturbing Permit Application** is required**.** Following approval of the plan, this application must be completed by the landowner, not the contractor, or other third party. Dates for expiration of the plan and completion of the project will be supplied by the Engineering and Resource Protection Division.

Please note that before accepting this application, County staff will verify that all real estate taxes owed for the subject properties have been paid in full in accordance with Section 24-24. If you are unsure if your payments are up-to-date, please contact the County Treasurer at 757-253-6705.

7. Responsible Land-Disturber Notification is required. The applicant must provide the name of an individual holding a valid Responsible Land Disturber (RLD) certificate of competence who will be responsible for the land-disturbing activity prior to engaging in the land-disturbing activity. This will be necessary prior to issuance of a land-disturbing permit for the project, not during the erosion and sediment control plan approval process. It is required that the designated RLD attend the preconstruction conference for the project. Visit the Virginia Department of Environmental Quality website at www.deq.virginia.gov for additional information about the Responsible Land Disturber program.

8. A Siltation Agreement completed by the landowner and/or contractor (whichever is applicable) with the required performance surety is required. If a bond or letter of credit is utilized for the surety, complete the appropriate attached form. If cash surety is to be provided, it must be either a certified or cashier's check made payable to Treasurer, James City County. The surety amount is computed by the County after plan approval and is based on the specific approved erosion control measures required for the project. The Agreement and surety document must be approved as to form by the County Attorney's Office prior to scheduling the onsite preconstruction meeting.

9. Payment of the Erosion and Sediment Control Plan Review and Inspection Fee, in accordance with Article I of the County's Chapter 8 ordinance is required. The permit fee is based on the amount of disturbed area for a site plan and/or the number of lots within a subdivision. For a non-residential site plan, the fee is $600 per acre of disturbance for the first 15 acres plus $400 per acre for each additional acre over 15. For a residential site plan, the fee is $840 per acre of disturbance for the first 15 acres plus $560 per acre for each additional acre over 15. The fee is prorated for disturbed acreages less than an acre. If it is a residential subdivision, the fee is $70 per lot. Fees are due at time of submission of the Erosion and Sediment Control plan. There is no maximum fee.

10. Payment of stormwater facility inspection fees, in accordance with the County's Subdivision and Zoning ordinances apply.

11. Payment of VSMP fees for registration/coverage, modification or transfer, or annual permit maintenance (as applicable) apply in accordance with Article II of the County's Chapter 8 ordinance apply.

12. An executed Declaration of Covenants - Inspection/Maintenance of Drainage System is required for any runoff control facility and conveyance system including any Best Management Practice (BMP) or drainage facilities that control or convey stormwater runoff. This document is must be approved as to form by the County Attorney's Office and recorded in the County Land Records.

13. Completion of a Stormwater Facilities Data Sheet, if applicable to the project, is required. Contact the James City County, Stormwater Division at (757) 259-1460.

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For more information about the entire VESCP, VSMP or VPDES construction general permit programs visit the County and Virginia Department of Environmental Quality (DEQ) websites at http://www.jamescitycountyva.gov/resourceprotection/ and http://www.deq.state.va.us/

Before Construction Can Begin

No local land disturbing (VESCP), stormwater discharge (VSMP), or a combined permit can be issued until evidence of registration (as applicable), evidence of general permit coverage (as applicable), and the above related items are completed. No VSMP authority permit can be issued and land disturbing activities cannot commence until evidence of VPDES construction general permit coverage is obtained. This can be done prior to or during the preconstruction meeting. Following successful demonstration of the above items, an onsite preconstruction meeting must be held. The purpose and content of the meeting are fully described in the County Engineering and Resource Protection and Stormwater Divisions **Policies for Preconstruction Meetings.** Prior to the meeting, the contractor must submit any proposed changes or deviations from the approved plan **Sequence of Construction** to the Division for approval**.**

After this meeting and following proper notifications to the Engineering and Resource Protection Division, the VESCP and/or the VSMP authority permit will be released and construction activities can begin.

At completion of the project and prior to release of surety, the following items must be provided:

1. Record Drawings and Construction Certifications are required for all stormwater facilities including stormwater management/BMP facilities and storm drainage conveyance systems. Record drawings and construction certifications must meet established program requirements of the County Engineering and Resource Protection and Stormwater Divisions, including provisions for an internal closed circuit television (CCTV) post installation inspection performed by the operator. For additional information, refer to Engineering and Resource Protection Division requirements in the ***Stormwater Management/BMP Facilities, Record Drawing and Construction Certification, Standard Forms and Instructions*** and County Stormwater Division requirements in the ***Stormwater Facilities Inspection Fee Program.***

2. Siltation surety will be released at the completion of the land-disturbing activity, upon approval of record drawings and construction certifications, and in accordance with applicable ordinance requirements. This includes adequate vegetative stabilization of all disturbed sitework areas, the removal of all temporary erosion and sediment control measures, and the stabilization of areas disturbed by BMP conversions, demobilization and temporary erosion and sediment control measure removal operations.

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Application for Local VESCP and VSMP Authority Permit
Land Disturbing and Stormwater Discharge Authorization

This authorization is for: ☐ Land Disturbing only ☐ Stormwater Discharge only ☐ Combined
Date: _____

Landowner: _____ Phone: _____ Fax: _____
Mailing Address: _____
(Street) (City) (State) (Zip)

Contact: _____ Phone: _____ Fax: _____
Email: _____

Project Name: _____
Project Street Address: _____
County Plan No.: _____ Parcel ID(s): _____

Total Size of Tract or Lot (acres): _____ Total Area to Be Disturbed (acres): _____
Description of Land Disturbing Activity (LDA): _____
_____
_____

Owner's Certification and Right of Entry

The undersigned owner hereby grants employees of James City County, Virginia and its agents, as VESCP or VSMP authority, the right to enter the above referenced property for the purpose of inspection or monitoring for compliance with the approved erosion and sedimentation control plan ("Plan") for the above-referenced project and further certifies that he/she understands the provisions of the Erosion and Sediment Control and VSMP ordinances and agrees to carry out the approved Plan for above-referenced project. Further, the permittee understands that the approved Plan becomes null and void one year after issuance of the permit and no further work, subject to Chapter 8 of the County Code, shall be allowed unless and until annual permit maintenance fees and an additional or updated Plan, if necessary, has been submitted and approved in accordance with Chapter 8 of the County Code or unless all requirements of the approved Plan have been completed within one year after issuance of this permit in accordance with such Plan and verified by on-site inspection by the Administrator or his designee.

_____ _____
(Print Name and Title of Landowner) **(Signature of Landowner)**

Evidence of registration and general permit coverage under the General VPDES Permit for Discharges of Stormwater from Construction Activities (VAR10), as applicable, is also required. Land Disturbing and/or VSMP authorization does not authorize the installation of water and sewer utilities or stormwater facilities. The Certificate to Construct for stormwater facilities is issued separately and the Certificate to Construct for water and sewer utilities is issued by the James City Service Authority, 757-253-6805.

(For Office Use Only) Reviewed by: _____ Date: _____
Permit No.: _____ Bond Amount: $_____
Permit Conditions: _____
_____
_____
_____

Approved by: _____ Date: _____ Expiration Date: _____
(Administrator – VESCP and VSMP Authority)

Project Code: _____ HUC: _____ Planner: _____ Proffer: _____ Treasurer: _____

VSMP: _____ DOC: _____ CC: _____

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Standard County Stormwater Pollution Prevention Plan Notes (Revised: May 15, 2014)

The following standard County notes shall become part of any approved stormwater pollution prevention plan, including a site erosion and sediment control (E&SC) plan, stormwater management (SWM) plan, and pollution prevention plan (PPP), as applicable, for all plans of development projects in James City County, Virginia. The James City County, Division of Engineering and Resource Protection, is designated by Chapter 8 of the County Code, as the local VESCP and VSMP authorities.

1. All the provisions of Virginia Erosion and Sediment Control (E&SC) and Virginia Stormwater Management Program (VSMP), Law and Regulations, Minimum Standards, Virginia BMP Clearinghouse Website, State Handbooks, and Technical Bulletins as published by the State Water Control Board, the Virginia Department of Environmental Quality (DEQ) and James City County shall apply to the project.

2. Minimum Standards No. 1 through No. 19 of the Virginia Erosion and Sediment Control Regulations shall apply to the project.

3. The Owner or Applicant shall be responsible to register for general permit coverage, as applicable, in accordance with Chapter 880, General VPDES Permit for Discharge of Stormwater from Construction Activities (VAR10) and Chapter 870, Virginia Stormwater Management Program Regulations and in accordance with current requirements of the Virginia Stormwater Management Program (VSMP), the State Water Control Board, the Virginia Department of Environmental Quality and the local VESCP/VSMP authority (James City County).

4. The Owner or Applicant shall provide the name of an individual holding a valid Responsible Land Disturber (RLD) certificate of competence who will be responsible for the land-disturbing activity prior to engaging in the land-disturbing activity. This will be necessary prior to issuance of a land-disturbing, stormwater discharge, or combined permit for the project. The RLD is required to attend the preconstruction conference for the project.

5. The Contractor is responsible to contact Miss Utility (Dial 811 in VA or 1-800-552-7001) prior to any utility or site work excavations.

6. All erosion and sediment control measures shall be planned, designed, implemented, installed and maintained in accordance with the provisions of the latest edition of the Virginia Erosion and Sediment Control Handbook (VESCH). The Contractor shall maintain, inspect and repair all erosion and sediment control measures as needed throughout the life of the project to ensure continued acceptable performance.

7. A preconstruction conference (meeting) shall be held on site between the VESCP/VSMP authority, the Owner-Applicant-Permittee, the Responsible Land-Disturber (RLD), the Contractor, Engineer, and other responsible agencies, as applicable, prior to authorization of land-disturbing or VSMP activity. The Owner or Applicant is required to coordinate scheduling of the preconstruction conference between all applicable parties. The Contractor shall submit a Sequence of Construction to the local VESCP/VSMP authority for review and approval prior to the preconstruction meeting.

8. The owner/applicant is responsible for all operator self-inspections as required under Stormwater Pollution Prevention Plan (SWPPP) requirements. These inspections shall be made available, upon request, by the local VESCP/VSMP authority.

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9. A pollution prevention plan (PPP), as required, shall be developed, implemented and updated as necessary and must detail the design, implementation, and maintenance of effective pollution prevention measures to minimize the discharge of pollutants. This plan shall be available onsite for review at reasonable times by the local VESCP/VSMP authority when requested.

10. All perimeter erosion and sediment control measures shall be constructed as a first step in any land-disturbing activity and shall be made functional before upslope land disturbance activity takes place.

11. Additional safety fence or dust control measures, in accordance with the provisions of Minimum Standards & Specs. 3.01 and 3.39 of the Virginia Erosion and Sediment Control Handbook (VESCH), may be required to be implemented on the site, in addition to that shown on the approved plan and specifications, in order to ensure adequate protection of the health, safety and welfare of the public or if site conditions change, become apparent or alter significantly following the date of plan approval.

12. Erosion and sediment control measures may require minor field adjustments at or following time of construction to ensure their intended purpose is accomplished, to ensure adequate protection of the health, safety, and welfare of the public, or if site conditions change, become apparent or alter significantly following the date of plan approval. Local VESCP/VSMP authority approval shall be required for any deviation of erosion and sediment control measures from the approved plan.

13. Off-site waste or borrow areas shall be approved by the local VESCP/VSMP authority prior to the import of any borrow or export of any waste to or from the project site.

14. Culvert and storm drain inlet protections, in accordance with the provisions of Minimum Standards & Specs. 3.07 and 3.08 of the Virginia Erosion and Sediment Control Handbook (VESCH), may be removed at the discretion of the assigned local VESCP/VSMP authority compliance inspector should placement of the measure result in excessive road flooding or traffic hazard or result in the redirection of drainage onto or toward existing lots, driveways or structures. Decisions shall be made on a case-by-case basis based on field situations encountered.

15. Drainage facilities shall be installed and functional within 30 days following completion of rough grading at any point within the project.

16. No more than 300 feet of trench may be open at one time for underground utility lines, including storm water conveyances. All other provisions of Minimum Standard No. 16 of the Virginia Erosion and Sediment Control regulations apply.

17. If disturbed area stabilization is to be accomplished during the months of December, January or February, stabilization shall consist of Mulching in accordance with Minimum Standard & Spec. 3.35 of the Virginia Erosion and Sediment Control Handbook (VESCH). Seeding will then take place as soon as the season permits.

18. The term seeding, final vegetative cover or stabilization on the approved plan shall mean the successful germination and establishment of a stable grass cover from a properly prepared seedbed, in accordance with Minimum Standard No. 3 from the Virginia Erosion and Sediment Control Regulations, Minimum Standards & Specs. 3.29 through 3.37 of the Virginia Erosion and Sediment Control Handbook (VESCH), and any technical bulletins issued by the Virginia DEQ, as applicable. Irrigation, if necessary, shall comply with all applicable seasonal outdoor water use restrictions of the James City Service Authority.

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19. Temporary erosion and sediment control measures shall not be removed until all disturbed areas are stabilized. Removal shall not occur without authorization by the local VESCP/VSMP authority. Disturbances associated with the removal of temporary erosion and sediment control measures shall be properly stabilized.

20. No sediment trap or sediment basin shall be removed until a) at least 75 percent of the single-family lots within the drainage area to the trap or basin have been sold to a third party for the construction of homes (unrelated to the developer); and/or, b) 60 percent of the single-family lots within the drainage area to the trap or basin are completed and stabilized. A bulk sale of the lots to another builder does not satisfy this provision. Sediment traps and sediment basins shall not be removed without authorization of the local VESCP/VSMP authority.

21. Design and construction of private-type storm drainage systems, outside VDOT right-of-way, shall be performed in accordance with the current version of the James City County Engineering and Resource Protection Division, Stormwater Drainage Conveyance Systems (Non-BMP related), General Design and Construction Guidelines (ie. County Drainage Standards).

22. Record Drawings (Asbuilts) and Construction Certifications are required for all stormwater facilities including stormwater management/BMP facilities and storm drainage conveyance systems. The certification process shall include an internal closed-circuit television camera (CCTV) post installation inspection performed by the owner in accordance with standards and specifications developed by the VSMP authority. Record drawings and construction certifications must meet established program requirements of the County's Chapter 8 Erosion and Sediment Control and VSMP Ordinance and the local VESCP/VSMP authority.

23. All stormwater facilities including BMPs, storm drainage pipes, stormwater conveyances, inlets, manholes, outfalls and roadside and other open channels shall be inspected by the local VESCP/VSMP authority and designated geotechnical engineer for the permittee for the project in accordance with established County stormwater facility inspection program requirements.

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Stormwater Pollution Prevention Plan (SWPPP)
Erosion and Sediment Control Design Plan Checklist

I. ***GENERAL:***

Yes No N/A

❒ ❒ ❒ *FAMILIARITY* with current versions of Chapter 8, Erosion and Sedimentation Control and Virginia Stormwater Management Program, and Chapter 23, Chesapeake Bay Preservation ordinances of the Code of James City County, Virginia and the Virginia Erosion and Sediment Control Handbook (VESCH).

❒ ❒ ❒ *LAND DISTURBING PERMIT AND SILTATION AGREEMENT* with surety is required for the project.

❒ ❒ ❒ Registration for Coverage under the General VPDES Permit for Discharge of Stormwater from Construction Activities and the Virginia Stormwater Management Program (VSMP) Regulations is required for the project.

❒ ❒ ❒ *VARIANCE* if necessary, requested in writing, for the plan approving authority to waive or modify any of the minimum standards and specifications of the VESCH or VESCP/VSMP deemed inappropriate based on site conditions specific to this review case only. Variances which are approved shall be properly documented in the plan and become part of the approved erosion and sediment control plan for the site.

II. ***NARRATIVE:***

Yes No N/A

❒ ❒ ❒ *PROJECT DESCRIPTION* briefly describing the nature and purpose of the land disturbing activity (LDA) and the acreage to be disturbed.

❒ ❒ ❒ *EXISTING SITE CONDITIONS* description of existing topography, land use, cover and drainage patterns at the site.

❒ ❒ ❒ *ADJACENT AREA* descriptions of neighboring onsite or offsite areas such as streams, lakes, property, roads, etc. and potential impacts due to concentrated flow or runoff from the land disturbing activity.

❒ ❒ ❒ *OFFSITE DISTURBED AREA* descriptions of proposed borrow sites, waste or surplus areas, utility extensions and erosion and sediment controls to be implemented.

❒ ❒ ❒ *SOILS DESCRIPTION* briefly summarizing site, disturbed area and drainage basin soils including name, unit, hydrologic soil group (HSG) classification, surface runoff potential, erodibility, permeability, depth, texture, structure, erosion hazards, shrink-swell potential, limitations for use and anticipated depths to bedrock and the seasonal water table, as applicable.

❒ ❒ ❒ *CRITICAL AREAS* on the site which many have potentially serious erosion and sediment control problems and special considerations required (ie. steep slopes, hydric soils, channels, springs, sinkholes, water supply reservoirs, groundwater recharge areas, etc.).

❒ ❒ ❒ *PROPOSED EROSION & SEDIMENT CONTROL MEASURES* inclusive to the specific erosion and sediment control plan as proposed for the land disturbing activity. Measures should be consistent with those proposed on the site drawings. Address general use, installation, limitations, sequencing and maintenance requirements for each control measure.

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Yes No N/A

❒ ❒ ❒ *STABILIZATION MEASURES* required for the site, either temporary or permanent, and during and following construction including temporary and permanent seeding and mulching, paving, stone, soil stabilization blankets and matting, sodding, landscaping or special stabilization techniques to be utilized.

❒ ❒ ❒ *STORMWATER MANAGEMENT CONSIDERATIONS* for the site, either of temporary or permanent nature, and strategies, sequences and measures required for control. May reference the stormwater management plan for the site, if prepared, for permanent stormwater management facilities and control of drainage once the site is stabilized.

II. ***SITE PLAN:***

Yes No N/A

❒ ❒ ❒ *VICINITY MAP* locating the site in relation to the surrounding area. Include any major landmarks which might assist in physically locating the site.

❒ ❒ ❒ *INDICATE NORTH* direction in relation to the site.

❒ ❒ ❒ *LIMITS OF CLEARING AND GRADING* for the site including that required for implementation of erosion and sediment controls, stockpile areas and utilities.

❒ ❒ ❒ *DISTURBED AREA ESTIMATES* in acres or square feet for the project.

❒ ❒ ❒ *HUC Code* for the project.

❒ ❒ ❒ *EXISTING TOPOGRAPHY* or contours for the site at no more than five foot contour interval.

❒ ❒ ❒ *FINAL TOPOGRAPHY* contours or proposed site grading in accordance with the design plan which indicates changes to existing topography and drainage patterns at no more than two foot contour interval (or one foot contours where required).

❒ ❒ ❒ *EXISTING AND PROPOSED SPOT ELEVATIONS* to supplement existing and proposed contours, topography or site grading information. Spot elevations may replace final contours in some instances, especially if terrain is in a low lying area or relatively flat.

❒ ❒ ❒ *EXISTING VEGETATION* including existing tree lines, grassed or unique vegetation areas.

❒ ❒ ❒ *EXISTING SITE FEATURES* including roads, buildings, homes, utilities, streams, fences, structures and other important surface features of the site.

❒ ❒ ❒ *SOILS MAP* with soil symbols, boundaries and legend in accordance with the current Soil Survey of James City and York Counties and the City of Williamsburg, Virginia.

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Yes No N/A

❒ ❒ ❒ *ENVIRONMENTAL INVENTORY* in accordance with Section 23-10(2) of the Chesapeake Bay Preservation Ordinance of James City County. Inventory generally includes tidal shores and wetlands, non-tidal wetlands, resource protection area, hydric soils and slopes steeper than 25 percent. For wetlands, provide a copy of issued permits or satisfactory evidence that appropriate permits are being pursued for the entire project.

❒ ❒ ❒ *100-YEAR FLOODPLAIN LIMITS* or any special flood hazard areas or flood zones based on appropriate Federal Management Agency Flood Insurance Rate Maps (FIRMs) or Flood Hazard Boundary Maps (FHBMs) of James City County, Virginia.

❒ ❒ ❒ *DRAINAGE AREAS* for offsite and onsite areas, existing or proposed as applicable. Include drainage divides and directional labels for all subareas at points of interest and size (in acres), weighted runoff coefficient or curve number and times of concentration for each subarea.

❒ ❒ ❒ *CRITICAL EROSION OR HIGHLY ERODIBLE SOIL AREAS* which require special consideration or unique erosion and sediment control measures. Refer to the VESCH, Chapter 6 for criteria.

❒ ❒ ❒ *DEVELOPMENT PLAN* for the site showing all improvements such as buildings, structures, parking areas, access roadways, above and below ground utilities, stormwater management and drainage facilities, trails or sidewalks, proposed vegetation and landscaping, amenities, etc.

❒ ❒ ❒ *LOCATION OF PRACTICES* proposed for erosion and sediment control, tree protection and temporary stormwater management due to land disturbance activities at the site. Use standard abbreviations, labels and symbols consistent for plan views based on minimum standards and specifications in Chapter 3 of the VESCH.

❒ ❒ ❒ *TEMPORARY STOCKPILE AREAS* or staging and equipment storage areas as required for onsite or offsite construction activities or indicate that none are anticipated for this project.

❒ ❒ ❒ *OFFSITE LAND DISTURBING AREAS* including borrow sites, waste areas, utility extensions, etc. and required erosion and sediment controls. If none are anticipated for the project, then indicate on the plans by general or erosion and sediment control notes.

❒ ❒ ❒ *DETAILS* or alternately, appropriate reference to current minimum standards and specifications of the VESCH for each measure proposed for the project. Non-modified, standard duplicated details (silt fence, diversion dikes, etc.) may be referenced to the current version of the VESCH. Specific dimensional or modified standards (basins, traps, outlet protections, check dams, etc.) require presentation on detail sheets. Schedules or tables may be used for multiple site measures such as sediment traps, basins, channels, slope drains, etc. Any modification to standard details should be clearly defined, explained and illustrated.

❒ ❒ ❒ *MAINTENANCE PLAN* or alternately, appropriate reference to current minimum standards and specifications of the VESCH, outlining the inspection frequency and maintenance requirements for all erosion and sediment control measures proposed for the project.

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❒ ❒ ❒ *TRENCH DEWATERING* methods and erosion and sediment (filtering) controls, if anticipated for the project.

❒ ❒ ❒ *CONSTRUCTION SEQUENCE* outlining the anticipated sequence for installation of erosion and sediment controls and site, grading and utility work to be performed for the project by the site contractor.

❒ ❒ ❒ *PHASING PLAN* if required for larger project sites that are to be developed in stages or phases.

❒ ❒ ❒ *SOIL STOCKPILE AND OPERATION PLAN* if required in accordance with Section 24-46 of the Zoning Ordinance.

❒ ❒ ❒ *STANDARD COUNTY NOTES* are required to be placed on the erosion and sediment control plan. Refer to the standard James City County standard SWPPP Notes, latest version.

❒ ❒ ❒ *PROFESSIONAL SEAL AND SIGNATURE* required on final and complete approved plans, drawings, technical reports and specifications.

IV. ***CALCULATIONS:***

Yes No N/A

❒ ❒ ❒ *CALCULATIONS AND COMPUTATIONS* associated with hydrology, hydraulics and design of proposed temporary and permanent erosion and sediment control measures including sediment traps and basins, diversions, stormwater conveyance channels, culverts, slope drains, outlet protections, etc. Computations are not required on the construction plan and may be attached in a supplemental erosion and sediment control plan design report, if presented in a clear and organized format.

❒ ❒ ❒ *TEMPORARY SEDIMENT BASIN DESIGN DATA SHEET* submitted for each basin along with schematic or sketch cross-section showing applicable design and construction data, storage volumes (wet-dry), dimensions and elevations. Peak design runoff to be based on the 2- or 25-year design storm event based on maximum disturbed site conditions (existing, interim or proposed conditions) in accordance with Minimum Standard 3.14 of the VESCH.

(Reserved)

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Stormwater Pollution Prevention Plan (SWPPP)
Stormwater Management Design Plan Checklist

I. ***GENERAL:***

Yes No N/A

❒ ❒ ❒ *FAMILIARITY* with current versions of the Chapter 8, Erosion and Sediment Control and Virginia Stormwater Management Program, and Chapter 23, Chesapeake Bay Preservation ordinances of the Code of James City County, Virginia; the Virginia Erosion and Sediment Control Handbook (VESCH); and the Virginia Stormwater Management Handbook (VSMH).

❒ ❒ ❒ *FAMILIARITY* with Section 8-25, Stormwater Management Plan – Contents of Plan, requirements which outlines required elements of complete stormwater management plans.

❒ ❒ ❒ *FAMILIARITY* with standards and specficiations for BMP design within the Virginia BMP Clearinghouse website

❒ ❒ ❒ *WAIVER OR EXCEPTION* if necessary, requested in writing, for the plan approving authority to waive or except the requirements of Chapter 23, Chesapeake Bay Preservation ordinance in accordance with procedure established in Sections 23-14 through 23-17 of the ordinance. Applies to this review case only.

❒ ❒ ❒ *VARIANCE REQUEST* if necessary, requested in writing for the plan approving authority to waive or modify any of the minimum standards and specifications of the VESCH; or applicable provisions of Chapter 8, Erosion and Sediment Control and Virginia Stormwater Management Program, deemed inappropriate based on site conditions specific to this review case only. Variances which are approved shall be properly documented in the plan and become part of the approved erosion and sediment control plan for the site.

❒ ❒ ❒ *PROFESSIONAL SEAL AND SIGNATURE* required on final and complete approved stormwater management plans, drawings, technical reports and specifications.

❒ ❒ ❒ *WORKSHEET* to ensure the stormwater management plan for the project complies with the Virginia Runoff Reduction Method for new development or redevelopment.

❒ ❒ ❒ *PROPOSED CONSERVATION EASEMENT AREAS* for any natural open space points claimed in the BMP worksheet.

❒ ❒ ❒ *INSPECTION/MAINTENANCE AGREEMENT* is required to be prepared and executed with the County for the project.

❒ ❒ ❒ *FEMA FIRM PANEL* reference with designated special flood hazard areas or zone designations associated with the site, as applicable.

❒ ❒ ❒ *DRAINAGE AREA MAP* at a maximum scale of 1"=200' scale showing drainage area boundaries for pre- and post- development conditions and associated time of concentration flow paths. Labels to include drainage area size, runoff coefficient or curve number and time of concentration for each subarea shown on the map.

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Yes No N/A

❒ ❒ ❒ *SOILS MAP* with soil symbols, boundaries and legend in accordance with the current Soil Survey of James City and York Counties and the City of Williamsburg, Virginia with approximate locations of the project site, BMPs and applicable drainage basins.

❒ ❒ ❒ *STORMWATER MANAGEMENT NARRATIVE* in a brief and simple format which describes the project; location; site and drainage basin soil characteristics; receiving water or drainage facility; existing site and drainage basin conditions (topography, land use, cover, slopes, etc.); proposed site development; proposed stormwater management and drainage plan including BMP type selected; summary of hydrology and hydraulics; maintenance program; and any special assumptions utilized for development of the stormwater management and drainage design plan or computations.

❒ ❒ ❒ *TEMPORARY STORMWATER MANAGEMENT* (if applicable) for control of stormwater runoff encountered during construction activities in addition to measures provided in the erosion and sediment control plan or stormwater management/drainage plan for the site. Adequate protection measures or sequencing provided.

❒ ❒ ❒ *BMP MODIFICATION PLAN* clearly defined for temporary sediment control structures which will be converted to permanent SWM/BMP structures. Includes appropriate hydrologic and hydraulic computations, conversions, sequencing and cleanout information or details. Normally related to primary control structures associated with dry detention or wet retention ponds. Normally not permitted for filtering or infiltration type facilities, unless adequately protected with structural erosion and sediment control measures.

❒ ❒ ❒ *STORMWATER MANAGEMENT and DRAINAGE DESIGN REPORT* in a bound 8-1/2 x 11 inch size format. Report shall generally include a title sheet, date, project identification, owner and preparer information, table of contents, narrative, summaries and computations as required. Computations may include: backwater, closed conduit, headwater, hydraulic, hydraulic grade line, hydrology, inlet, open channel, storm sewer, water quality, extended detention or stream channel protection and muti-stage storm routing calculations, as applicable, for the project. Computation data may include hand or computer generated computations, maps or schematics. All information should be presented in a clear, easy to follow format and should closely match construction plan information.

❒ ❒ ❒ *PLAN VIEW* at 1 inch = 50 ft. scale or less (1" = 40’, 1" = 30', etc.)

❒ ❒ ❒ North arrow and plan legend.
❒ ❒ ❒ Property lines.
❒ ❒ ❒ Adjacent property information.
❒ ❒ ❒ Existing site features and existing impervious cover areas.
❒ ❒ ❒ Impervious cover tabulations.
❒ ❒ ❒ Existing drainage facilities (natural or manmade).
❒ ❒ ❒ Existing environmentally sensitive areas (RPA, wetlands, floodplain, steep slopes, critical soils, buffers, etc.).
❒ ❒ ❒ Existing and proposed contours (1' or 2' contour interval) and spot elevations as necessary to define high and low topography.
❒ ❒ ❒ Existing and proposed easement locations.
❒ ❒ ❒ Proposed site improvements and proposed impervious cover areas.

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Yes No N/A

❒ ❒ ❒ Proposed stormwater conveyance, drainage and management facilities with appropriate labeled construction data and information.
❒ ❒ ❒ Proposed landscaping and seeding plans (disturbed areas, pond interior, etc.).
❒ ❒ ❒ Proposed slope stabilization areas (riprap, blankets, mattings, walls, etc.).
❒ ❒ ❒ Delineation of permanent pools and the 1-, 2-, 10- and 100-year Design Water Surface Elevations.
❒ ❒ ❒ Delineation of ponding, headwater, surcharge or backwater areas which may affect adjacent existing or proposed buildings, structures or upstream adjacent properties.
❒ ❒ ❒ Test boring locations with reference surface elevations (if known).
❒ ❒ ❒ Risers, barrels, underdrains, overflows and outlet protections.
❒ ❒ ❒ Emergency spillway level section and outlet channel.
❒ ❒ ❒ Existing and proposed site utilities and protection measures.
❒ ❒ ❒ Erosion and sediment control measures (for site or BMP).
❒ ❒ ❒ Maintenance or access corridors to permanent stormwater management, BMP or drainage facilities.

II. ***STORMWATER CONVEYANCE SYSTEMS:***

Yes No N/A

❒ ❒ ❒ *PLAN VIEWS*

❒ ❒ ❒ Storm drain lengths, sizes, types, classes and slopes for all segments. Label directly on plan or use structure/pipe schedule.
❒ ❒ ❒ Access structure (inlets, manholes, junctions, etc.) rim elevations, inverts, type and required grate or top unit and lengths labeled.
❒ ❒ ❒ All structure numbers labeled.
❒ ❒ ❒ Adequate horizontal clearance from other site utilities or structures.

❒ ❒ ❒ PROFILES generally are not required but are encouraged to expedite review. If not provided, ensure all pipe segments have adequate minimum cover, do not exceed maximum depths of cover for the type/class of pipe specified and do not conflict with other site utilities or excavation areas.

❒ ❒ ❒ *DETAILS*

❒ ❒ ❒ Typical storm drain bedding details or references to industry or association standards (ASTM, etc.).
❒ ❒ ❒ Standard details or reference note for all proposed access structure types (inlets, manholes, etc.).
❒ ❒ ❒ Inlet shaping detail or applicable reference note.
❒ ❒ ❒ Step detail or applicable reference note (if depth 4 ft. or more).
❒ ❒ ❒ Typical open channel details with designation, location, shape, type, bottom width, top width, lining, slope, length, side slope, and installation depth required for construction. Channel design data as necessary may also be included.
❒ ❒ ❒ Outlet protections at all pipe outfalls.

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Yes No N/A

❒ ❒ ❒ *STORMWATER CONVEYANCE SYSTEM COMPUTATIONS*

❒ ❒ ❒ Storm Sewer Design computations based on 10-year design event.
❒ ❒ ❒ Hydraulic Grade Line computations based on 10-year design event.
❒ ❒ ❒ Inlet computations based on current VDOT procedure for spread, ponding depth and grate size required.
❒ ❒ ❒ Culvert Headwater computations. Design based on 10-year design storm event and check only for 100-year storm event.
❒ ❒ ❒ Open Channel computations based on 2-year design event for velocity and 10-year design event for capacity.
❒ ❒ ❒ Standard outlet protection or special energy dissipators.
❒ ❒ ❒ Pipe thickness design computations, as required, for selected pipe type (live load, minimum cover, maximum height of cover, etc.).
❒ ❒ ❒ Adequate channel computations for receiving channels (based on field measured channel section data).

I. ***STORMWATER MANAGEMENT/BMP FACILITIES:***

Yes No N/A

❒ ❒ ❒ HYDROLOGY - An SCS based methodology is required for the design of stormwater management/BMP facilities with watersheds exceeding 20 acres. Under 20 acres, other generally accepted methodologies such as the modified rational, critical storm are allowable. Refer to Chapter 5 of the VESCH or Chapter 5 of the VSMH.
❒ ❒ ❒ Runoff Curve Number or Coefficient determinations: pre-developed and ultimate development land use scenarios.
❒ ❒ ❒ Time of concentration: pre-developed and ultimate development indicating overland, shallow concentrated, and channel flow components (200 ft. maximum length for overland flow).
❒ ❒ ❒ Hydrograph generation (tabular or graphical): pre- and post- development conditions for the 1-, 2-, 10-, and 100-year design storm events.

❒ ❒ ❒ *FACILITY CONFIGURATION and MINIMUM SEPARATIONS*

❒ ❒ ❒ Screening and layout consistent with Section 24-98(d) of the Chapter 24 Zoning ordinance (landscaping, screening, visibility, etc.).
❒ ❒ ❒ Basic considerations for safety and unauthorized entry.
❒ ❒ ❒ Proper length to width ratio (Typically 2H:1V).
❒ ❒ ❒ Facilities with deep pools (4 feet or more in depth) provided with two benches. Fifteen (15) ft. safety bench outward from normal pool at maximum 6 percent slope and aquatic bench inward from normal shoreline below normal pool. Narrower widths may be considered on a case-by-case basis.
❒ ❒ ❒ Pond buffer minimum 25 feet outward from maximum design WSEL. Additional setbacks may be required to permanent structures.
❒ ❒ ❒ No trees, shrubs or woody plants within 15 feet of embankment toe or 25 feet from principal spillway structure.
❒ ❒ ❒ Infiltration and filtering system facilities generally located at least 100 feet horizontally from any water supply well; 100 feet from any downslope building; and 25 feet from any upslope buildings, unless site specific investigation allows for reduced separation.

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Yes No N/A

❒ ❒ ❒ *HYDRAULIC COMPUTATIONS*

❒ ❒ ❒ Elevation- or Stage- Storage curve and/or tabular data.
❒ ❒ ❒ Weir/Orifice Control - Extended Detention.
❒ ❒ ❒ Weir/Orifice Control - riser 1-year control for channel protection.
❒ ❒ ❒ Weir/Orifice Control - riser 2-year control for quantity (if required).
❒ ❒ ❒ Weir/Orifice Control - riser 10-year control for quantity (if required).
❒ ❒ ❒ Inlet/Outlet (barrel) control - (All Storms).
❒ ❒ ❒ Check for barrel control prior to riser orifice flow to prevent slug flow-water hammer conditions.
❒ ❒ ❒ Emergency spillway capacity and depth of flow.
❒ ❒ ❒ Elevation - Discharge (Outlet Rating) curve and/or table. Provide all supporting calculations and/or design assumptions.
❒ ❒ ❒ Adequate channel computations for receiving channel. May be waived if facility is designed based on current Stream Channel Protection criteria.

❒ ❒ ❒ *POND or RESERVOIR ROUTING*
❒ ❒ ❒ Storage-Indication Routing of post-developed inflow hydrographs for the 1-, 2-, 10-, and 100-year design storms. Preference is for structure to discharge up to the 10-year storm through the principal spillway and pass the 100-year storm with a minimum 1 foot of freeboard through a combination principal and emergency spillways. If no emergency spillway is provided, riser must be large enough to pass the design high water flow and trash without overtopping the facility, have 3 square feet or more of cross-sectional area, contain a hood type inlet and have a minimum freeboard of 2 feet. Token spillways with minimum 8 ft. width are also recommended at or above the design 100-year storm elevation.
❒ ❒ ❒ Downstream hydrographs at established study points, if conditions warrant (ie. facility discharge combined with uncontrolled bypass).

❒ ❒ ❒ *MISCELLANEOUS COMPUTATIONS*

❒ ❒ ❒ Water quality volume for permanent pool based on selected BMP treatment volume (WQv).
❒ ❒ ❒ Water quality volume for extended detention based on selected BMP treatment volume (WQv) with drawdown computations.
❒ ❒ ❒ Drawdown computations for the 1-year, 24 hour detention for stream channel protection criteria.
❒ ❒ ❒ Pond drain computations (within 24 hours).
❒ ❒ ❒ Anti-seep collar design (concrete preferred) or match material type.
❒ ❒ ❒ Filter diaphragm design (or alternative method of controlling seepage).
❒ ❒ ❒ Riser / base structure flotation analyses. FS = 1.25 minimum.
❒ ❒ ❒ Downstream danger reach study and/or emergency action plan (if conditions warrant).
❒ ❒ ❒ Upstream backwater analyses onto offsite adjacent property (if conditions warrant).
❒ ❒ ❒ 100 year floodplain impacts (if conditions warrant).

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Yes No N/A

❒ ❒ ❒ *GEOTECHNICAL REQUIREMENTS*

❒ ❒ ❒ Geotechnical Report with recommendations specific to BMP facility type selected. Report prepared by a registered professional engineer. Requires submission, review and approval prior to issuance of Land Disturbance Permit.
❒ ❒ ❒ Initial Feasibility Testing requirements satisfied as per stormwater management handbook guidelines.
❒ ❒ ❒ Concept Design. Testing requirements satisfied per stormwater management handbook guidelines.
❒ ❒ ❒ Minimum Boring locations: borrow area, pool area, principal control structure, top of facility near one abutment and emergency spillway if provided.
❒ ❒ ❒ Boring logs with Unified Soil Classification (ASTM D2487), soils descriptions and depths to bedrock and the seasonal water table indicated.
❒ ❒ ❒ Standard County Record Drawing/Construction Certification note provided on plan. Note: It is understood that preparation of record drawings and construction certifications as required for project facilities may not necessarily be performed by the plan preparer. These components may be performed by others.

❒ ❒ ❒ *PRINCIPAL SPILLWAY PROFILE AND ASSOCIATED DETAILS*

❒ ❒ ❒ *EXISTING GROUND AND PROPOSED GRADE*
❒ ❒ ❒ Embankment or excavation side slopes labeled (3H:1V maximum).
❒ ❒ ❒ Minimum top width labeled (per VESCH or VSMH requirements).
❒ ❒ ❒ Removal of unsuitable material under proposed facility (per Geotechnical Report requirements).

❒ ❒ ❒ *CORE TRENCH*
❒ ❒ ❒ Material (per plan or Geotechnical Report).
❒ ❒ ❒ Bottom width (4' minimum or greater as dictated by Geotechnical Report recommendations).
❒ ❒ ❒ Side slopes (1:1 maximum steepness)
❒ ❒ ❒ Depth (4' minimum or greater as dictated by Geotechnical Report).

❒ ❒ ❒ *PRINCIPAL CONTROL STRUCTURE. RISER OR SIMILAR STRUCTURE (DETAILS REQUIRED FOR ALL ITEMS)*

❒ ❒ ❒ Durable, watertight, resistant material (concrete preferred).
❒ ❒ ❒ Riser diameter is at least 1.25 times larger than barrel diameter.
❒ ❒ ❒ All pertinent dimensions and elevations shown.
❒ ❒ ❒ Control orifice or weir dimensions and elevations shown.
❒ ❒ ❒ Trash rack - removable - for each release.
❒ ❒ ❒ Anti-vortex device, baffle or plate.
❒ ❒ ❒ Riser base structure with dimensions and embedment specifications (concrete preferred).
❒ ❒ ❒ Interior access (steps, ladders, etc.) for maintenance for structures over 4 feet in height. Excessively high risers may need some form of exterior access on top portion.
❒ ❒ ❒ Low flow orifice with trash rack device.

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Yes No N/A

❒ ❒ ❒ *PRINCIPAL CONTROL STRUCTURE OUTLET BARREL*

❒ ❒ ❒ Material (ASTM C-361 reinforced concrete pipe) with watertight joints. Prior approval required for all other pipe material (other RCP types, CMP, CPP, PVC, etc.).
❒ ❒ ❒ Support and bedding requirements for barrel - concrete cradles, etc. or as recommended by the Geotechnical Report.
❒ ❒ ❒ Pipe inverts, length, size, class and slope shown.
❒ ❒ ❒ Flared end section or endwall provided on barrel outlet.

❒ ❒ ❒ *SEEPAGE CONTROL*

❒ ❒ ❒ Phreatic line shown (4:1 slope measured from the intersection of the embankment and the principal spillway design high water).

❒ ❒ ❒ *ANTI-SEEP COLLARS*

❒ ❒ ❒ Anti-seep collar, concrete preferred.
❒ ❒ ❒ Size - 15 percent increase in length of saturation using outside pipe diameter.
❒ ❒ ❒ Spacing and location on barrel (located at least 2 feet from a pipe joint).

❒ ❒ ❒ *FILTER DIAPHRAGMS*
❒ ❒ ❒ Design based on latest NRCS design methods and certified by a professional engineer.

❒ ❒ ❒ *ELEVATION AND DIMENSIONAL DESIGN DATA*

❒ ❒ ❒ Top of facility - construction height and settled height (10 percent settlement).
❒ ❒ ❒ Crest of principal control structure spillway at least one (1) foot below crest of emergency spillway, if provided.
❒ ❒ ❒ Minimum freeboard of one (1) foot above the 100-year design high water elevation for facilities with an emergency spillway.
❒ ❒ ❒ Minimum freeboard of two (2) feet above the 100-year design high water elevation for facilities without an emergency spillway or in accordance with the SCS National Engineering Handbook (prior approval required).
❒ ❒ ❒ Basin Sediment Clean-Out elevation (permanent mode). Typically 10 to 25 percent of water quality volume.

❒ ❒ ❒ *CROSS SECTION THROUGH FACILITY*
❒ ❒ ❒ Existing Ground.
❒ ❒ ❒ Proposed grade.
❒ ❒ ❒ Top of facility - constructed and settled.
❒ ❒ ❒ Location of emergency spillway with side slopes labeled (emergency spillway in cut).
❒ ❒ ❒ Bottom of core trench (4' minimum).
❒ ❒ ❒ Location of each soil boring.
❒ ❒ ❒ Barrel location.
❒ ❒ ❒ Existing and proposed utility location/protection.

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Yes No N/A

❒ ❒ ❒ *EMERGENCY SPILLWAY PROFILE*

❒ ❒ ❒ Existing ground.
❒ ❒ ❒ Inlet, level (control) and outlet sections per SCS.
❒ ❒ ❒ Spillway and crest elevations.

❒ ❒ ❒ PRETREATMENT DEVICES of adequate depth and properly designed using required pretreatment volumes for the selected BMP facility type. Including, but not limited to: sediment forebays, sediment basins, sumps, grass channels, gravel diaphragms, plunge pools, chamber separators, manufactured systems or other acceptable methods.

❒ ❒ ❒ *CONSTRUCTION SPECIFICATIONS and NOTES*

❒ ❒ ❒ Anticipated sequence of construction for BMP (consistent with erosion and sediment control plan).
❒ ❒ ❒ Provisions to control base stream or storm flow conditions encountered during construction.
❒ ❒ ❒ Site and subgrade preparation requirements.
❒ ❒ ❒ Embankment, fill and backfill material soil and placement (lift) thickness requirements.
❒ ❒ ❒ Compaction and soil moisture content requirements.
❒ ❒ ❒ Geosynthetics for drainage, filtration, moisture barrier, separation, and reinforcement purposes.
❒ ❒ ❒ Clay or synthetic (PVC or HDPE) pond liners.
❒ ❒ ❒ Storm drain, underdrain and pipe conduit requirements.
❒ ❒ ❒ Minimum depth of pipe cover for temporary (construction) and final cover conditions.
❒ ❒ ❒ Permanent shutoff valve and pond drain.
❒ ❒ ❒ Concrete requirements for structural components.
❒ ❒ ❒ Riprap and slope protection.
❒ ❒ ❒ Access or maintenance road surface, base, subbase.
❒ ❒ ❒ Temporary and permanent stabilization measures.
❒ ❒ ❒ Temporary or permanent safety fencing.
❒ ❒ ❒ BMP Landscaping (deep, shallow, fringe, perimeter, etc.)
❒ ❒ ❒ Dust and traffic control (if warranted).
❒ ❒ ❒ Construction monitoring and certification by professional.
❒ ❒ ❒ Other: _____
❒ ❒ ❒ Other: _____

❒ ❒ ❒ MAINTENANCE PROVISIONS

❒ ❒ ❒ Entity responsible for maintenance identified.
❒ ❒ ❒ Maintenance Plan which outlines the long-term schedule for inspection/maintenance of the facility and forebays (included in plan set).
❒ ❒ ❒ Maintenance access from public right-of-way or publicly traveled road.
❒ ❒ ❒ Maintenance easement provided encompassing high water pool and buffer, principal and emergency spillways, outlet structures, forebays, embankment area and possible sediment-removal stockpile areas.
❒ ❒ ❒ Minimum six foot wide public safety shelf (landing) or alternative fencing.

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II. ***OUTLET PROTECTIONS:***

Yes	No	N/A	
❒	❒	❒	Sized for maximum design release (generally 10-year storm).
❒	❒	❒	Flared end section or endwall.
❒	❒	❒	Dimensions.
❒	❒	❒	Rock or riprap size, quantity and placement thickness.
❒	❒	❒	Slope at 0 percent (Level Grade).
❒	❒	❒	Geotextiles (nonwoven).
❒	❒	❒	Special energy dissipators are required for design discharge velocities that exceed eighteen (18) feet per second; or if use of standard outlet protection would result in velocities exceeding permissible channel velocities; or if space restricts or limits their use.

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Stormwater Pollution Prevention Plan (SWPPP)
Pollution Prevention Design Plan Checklist

I. ***GENERAL:***

Yes No N/A

❒ ❒ ❒ *FAMILIARITY* with current versions of Chapter 8, Erosion and Sedimentation Control, Chapter 8, Erosion and Sediment Control and Virginia Stormwater Management Program, and Chapter 23, Chesapeake Bay Preservation ordinances of the Code of James City County, Virginia and the Virginia Erosion and Sediment Control and Stormwater Mangement Handbooks (VESCH).

❒ ❒ ❒ *FAMILIARITY* with EPA Stormwater Pollution Prevention Plan and Pollution Prevention plan guidelines, pollution prevention plan requirements of 9VAC25-870-56 of the VSMP regulations, and Section 8-26 of the County's VSMP ordinance.

❒ ❒ ❒ *VARIANCE* if necessary, requested in writing, for the plan approving authority to waive or modify any of pollution prevention plan requirements. Variances which are approved shall be properly documented in the plan and become part of the approved erosion and sediment control plan for the site.

❒ ❒ ❒ A pollution prevention plan (PPP), required by 9VAC25-870-56 of the regulations, shall be developed, implemented, and updated as necessary and must detail the design, installation, implementation, and maintenance of effective pollution prevention measures to minimize the discharge of pollutants.

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

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

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

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

❒ ❒ ❒ The pollution prevention plan (PPP) shall include effective best management practices to prohibit the following discharges: Wastewater from washout of concrete, unless managed by an appropriate control; wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials; fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance; and soaps or solvents used in vehicle and equipment washing.

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Yes No N/A

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

V. *ADDITIONAL COMMENTS OR INFORMATION SPECIFIC TO THE PLAN*:

DRAFT

Plan Preparer (please print): _____

Plan Preparer (signature): _____

Date: _____

James City County, Virginia
Engineering and Resource Protection Division

Stormwater Drainage Conveyance Systems (Non-BMP related)
General Design and Construction Guidelines

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Issue Date: March 1, 2001
Revision Date: July 1, 2014

(Note: Chapter 19 Subdivisions, Section 19 - 27(e) and Chapter 24 Zoning, Article III Site Plans, Section 24 - 145(14) of the Code of James City County require the adequate control of stormwater drainage and erosion and sedimentation, whether temporary or permanent, and the submission of a drainage plan showing the proposed drainage system including all open channels, closed storm drain pipes and stormwater management facilities proposed to convey drainage, including the size of all pipes and channels, types of pipes and linings, drainage calculations and related construction details. In addition, Minimum Standard #19 of the Virginia Erosion and Sediment Control Regulations requires adequate man-made channels, pipes and storm sewer systems by analyses using the 10-year storm. The conditions of County VSMP Ordinance, Chapter 8 Article II of the County Code also apply.)

1.0 Introduction and Purpose

The following are basic guidelines and principles for the design and construction of private stormwater conveyance systems within James City County (JCC) which are not located within Virginia Department of Transportation (VDOT) Right-of-Way and are not interior to a stormwater management/best management practice (BMP) facility. Storm drainage systems are typically provided for urban land development projects to collect and convey onsite stormwater runoff or divert upstream (offsite) stormwater runoff through or to a site to an acceptable downstream stormwater management facility. Systems may include overland sheet flow, concentrated flow, paved street flow, curb and gutter flow, inlets, storm drains (sewers), open channels, culverts or enclosures and special structures such as diverters, manholes, junction boxes and energy dissipators.

The purpose of these guidelines is to provide the owner, applicant or its designated representative with general design and construction guidance for preparing drainage plans as required for subdivision and/or site development plan submissions and to subsequently assist the James City County Engineering and Resource Protection Division in the formal review of such plans. The goal of the guidelines is to establish minimum design and construction standards for stormwater drainage conveyance systems to minimize potential adverse effects of such systems on the environment, upstream/downstream properties or structures or downstream stormwater management facilities in accordance with strategies presented in the applicable state laws and regulations, County Code, the Virginia BMP Clearinghouse website, the Virginia Stormwater Management Handbook (manual) and to attempt to expedite the review process by requiring consistent plan information.

The James City County Division of Engineering and Resource Protection is designated as the local VESCP/VSMP authority. This document was revised administratively by the VESCP/VSMP authority due to implementation of the Virginia Stormwater Management Program.

2.0 General Design Criteria

2.1. These guidelines pertain to site drainage systems defined as **"private"** type gravity systems or elements which are located **outside Virginia Department of Transportation (VDOT) road rights-of-way**. All stormwater drainage systems located within VDOT road rights-of-way or included for maintenance under the state Secondary Road System shall be designed in accordance with current VDOT standards, specifications and drainage manual requirements.

VDOT is responsible for the review and approval of design plans for these systems; however, the County will review and comment on design plans where function of the road drainage system may impact a downstream site, site drainage system or an approved stormwater management/ BMP structure.

2.2. Drainage improvements, outside VDOT road rights-of-way, shall be designed and constructed to conform with current VDOT standards and specifications, if criteria are not otherwise established within these design and construction guidelines.

2.3. If provisions of these guidelines conflict with current versions of the Code of the County of James City, Virginia or other state or federal regulations; then provisions or requirements of the ordinances or regulations shall supersede these guidelines.

2.4. Proposed drainage methods such as use of natural streams or swales or constructed channels, storm drain systems, etc. shall be consistent with any previously approved comprehensive, concept, master, rezoning, preliminary or final site plans, as applicable, within James City County or other related local or state jurisdictions.

2.5. Concentrated stormwater runoff leaving a development site via a site drainage system shall be conveyed and discharged to a well-defined, adequate natural or man-made receiving channel, drainage system or stormwater management/BMP facility. Adequacy computations and design of downstream channels and pipe improvements for uncontrolled (bypass) areas shall be performed in accordance with Virginia Erosion and Sediment Control Regulations and Minimum Standard # 19 of the Virginia Erosion and Sediment Control Handbook (VESCH) and/or in accordance with quantity and flood control requirements of the Chapter 8, Erosion and Sediment Control and Virginia Stormwater Management Program ordinance of James City County.

2.6. Drainage systems shall be designed in a manner to not create an adverse or increased impounding effect on upslope adjacent property or structures; or an adverse or erosion, sediment or flooding impact on adjacent downstream property or structures. Drainage easements may be necessary.

2.7. Drainage systems shall be designed to minimize impacts to environmentally sensitive areas to the greatest extent possible. Environmentally sensitive areas include, but are not limited to: wetlands, hydric soils, floodplains, resource protection areas (RPA's), resource management areas (RMA's), steep slope areas, highly erodible or permeable soils, potentially significant archaeological or historical areas, wildlife habitats, shoreline or tidal influence areas, conservation open spaces or densely vegetated, mature forested or prime agricultural farmland.

2.8. All drainage systems shall be designed and sized based on anticipated ultimate development conditions for the project, including future upstream connecting phases and offsite tributary areas, if applicable.

2.9. Drainage systems shall be designed to convey stormwater runoff from onsite, offsite or a combination of these sources.

2.10. Normal depths of existing waterways, design water surface elevations (pools) of downstream impoundments or stormwater management/BMP facilities or other existing or pending drainage systems shall be considered in the hydraulic design of onsite storm drainage systems (ie. tailwater conditions).

2.11. Proposed site and lot grading and drainage pattern changes shall be considered when planning or configuring the proposed drainage system for the development site.

2.12. An adequate or safe overflow path shall be provided should the drainage system become blocked, non-functional or if the system's design storm is exceeded. Overflow paths should not directly impact or create unsafe conditions at any existing or proposed structure, road, travelway or walkway. Ponding depths, headwater/backwater effects or water surface elevations may be required to be shown on the plans to properly assess impacts on upslope adjacent areas, whether onsite or offsite, and existing or proposed structures.

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2.13. Drainage systems shall be designed to honor existing drainage divides to the greatest extent possible. Concentrated surface flow shall not be "diverted" to adjoining properties unless the receiving offsite natural channel or man-made system is adequate for capacity and velocity and proper notification and permission is obtained from the adjoining owner.

2.14. Temporary erosion and sediment controls (E&SC) shall be installed prior to construction of the proposed stormwater drainage conveyance system. Temporary stormwater management or erosion and sediment control measures may be required to manage higher discharges rates and volumes that may be associated with runoff from mass-disturbed construction sites than that which may be anticipated during pre-developed or final post-developed, stabilized and landscaped conditions.

2.15. Hydrology and Hydraulics. All hydrologic and hydraulic computation methods as outlined in the current edition of the VDOT Drainage Manual or any other standard accepted reference for the design of stormwater drainage systems for urban or transportation facilities are acceptable for use.

2.16. Hydrology. In general, use of the Rational Method will be limited to drainage system designs (non-BMP related) where the total contributing drainage area is less than 20 acres for typical commercial, business, office or similar site development activities and 50 acres for larger typical residential or mixed-use type projects. For projects greater than 50 acres or "non-typical" type development projects, the Engineering and Resource Protection Division should be notified in advance if the rational method is to be utilized for site drainage system design. Standard engineering references are acceptable for selection of runoff coefficients and methods to compute times of concentration. Use of traditionally accepted local (James City County or equivalent) rainfall-intensity-frequency data (I, inches per hour) based on the determined time of concentration is required.

2.17. Hydrology. In general, Soil Conservation Service (SCS) based hydrologic methods are encouraged for all project types and sizes and shall be used for drainage systems greater than 20 acres for typical commercial, business, office or similar site developments and 50 acres for larger typical residential or mixed-use type projects. SCS hydrology methods generally consist of any soil-cover-complex based methodology which utilizes hydrologic soils group classifications (A, B, C, or D) and runoff curve numbers (CN's) based on land use. Acceptable methods may include Technical Release Number 20 (TR-20), Technical Release Number 55 (TR-55), the U.S. Army Corp. of Engineers HEC-1 Flood Hydrograph Package and/or any other commercially available similar developed program which is based on SCS methodology. Use of traditionally accepted local (James City County or equivalent) 24-hour rainfall values (P, inches) are required.

2.18. Computer Program Assistance. Use of standard accepted and commercially available computer software or programs are strongly encouraged to assist with performing hydrologic and hydraulic computations associated with the design of stormwater drainage conveyance systems. Various computer programs are widely available and simplify the process to analyze, design and perform multiple computations associated with design such as weighted runoff coefficients or curve numbers, times of concentration, peak design discharges, storm drain (sewer) and inlet computations, culvert headwater or backwater, flow depth, hydraulic grade line computations and open channel analyses. Software or program documentation may be requested.

2.19. Presentation. In addition to the preparation of construction plans, proper and clear presentation of input, output and graphical data associated with the use of computer programs is essential for expeditious review and approval of drainage plans. In order to not clutter construction plans with computational data associated with hydrology and hydraulics, results can be presented by use of a supplemental drainage design report in a bound 8-1/2 x 11 inch size format. The design report shall generally include, but is not limited to a cover sheet with title and date; project name, owner and preparer information; a brief narrative summarizing the types of drainage facilities to be utilized for the project; methodology and programs used; a summary of results; and individual computations, as needed. Construction data and details necessary for installation of the systems shall be provided on the

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construction plans; however, all computational data in the design report should closely match construction plan information.

2.20. Maintenance Agreement. Depending on the project type and drainage facilities proposed, a standard Inspection / Maintenance agreement, executed between the Owner and the County may be required for onsite drainage systems. The agreement provides for future right-of-entry and defines maintenance responsibilities. The agreement does not pertain to any elements located within any VDOT rights-of-way.

2.21 Asbuilts and construction certifications, including an internal closed-circuit camera television (CCTV) inspection performed by the operator, are required for all stormwater conveyance channel systems, in accordance with Chapter 8 ordinance and standards and specifications developed by the VESCP/VSMP authority.

2.22 At the discretion of the VESCP/VSMP authority administrator, stormwater pipe drainage systems less than 12-inch diameter in size are considered yard-type systems, not primary drainage infrastructure systems, and are not subject to the County's stormwater facility pipe inspection fee program.

2.23. At the discretion of the VESCP/VSMP authority administrator, stormwater pipe drainage systems less than 15-inch diameter in size are considered yard-type systems, not primary drainage infrastructure systems, and are not subject to the County's internal closed-circuit television (CCTV) requirements as part of the asbuilt/construction certification program.

2.24. The VESCP/VSMP authority reserves the right to formally request or comment on any information relative to the design or construction of stormwater drainage conveyance systems in addition to that shown within these guidelines. Additional information may include, but is not limited to field investigations, mapping; surveying; plans, profiles or details; soil or water pH testing; soil borings and testing; compaction test reports; hydraulic or structural designs or computations; shop drawings; specifications and product material literature.

2.25. These guidelines typically apply to stormwater drainage conveyance systems which are non-BMP related such as inlets, storm drains, culverts and open channels. For stormwater management / best management practice (BMP) design and construction guidance, refer to current versions of the Virginia BMP clearinghouse website, the revised *Virginia Stormwater Management Handbook* (manual); Chapter 8 (Erosion and Sediment Control and Virginia Stormwater Management Program) and Chapter 23, Chesapeake Bay Preservation ordinances of the Code of James City County, Virginia; and the Virginia Erosion and Sediment Control Handbook (VESCH).

3.0 Open Channel Design

3.1. Stormwater conveyance channels, not intended for use as a dry swale BMP, shall be designed to convey the peak discharge from a 10-year design storm event without overtopping the channel's normal banks. Larger permanent conveyance channels in easily accessible or high-use locations such as residential areas, parking lots, recreational parks, etc. may be required to have freeboard of at least 0.5 feet.

3.2. Stormwater conveyance channels, not intended for use as a dry swale BMP, shall be designed so that the velocity from peak discharges associated with a 2-year design storm shall not exceed the permissible velocity for the type of channel lining used.

3.3. Mannings equation shall be used to analyze, design or size the channel. Refer to standard engineering references such as the Virginia Erosion and Sediment Control Manual or HEC-15 for use of the Mannings equation and selection of a Mannings "n" value for channel linings or bare earth conditions. Although "n" values typically vary with flow depth, values for typical, local projects will generally range around 0.020 to 0.025 for sparsely

vegetated channels; 0.030 to 0.040 for grass or natural channels, 0.05 for erosion control matted channels, 0.015 for paved linings and around 0.050 to 0.070 for riprap linings.

3.4. Channel linings shall be analyzed, designed and selected using procedures in the current edition of the Virginia Erosion and Sediment Control Handbook.

3.5. Design of riprap channels shall be analyzed and designed in accordance with the current edition of the Virginia Erosion and Sediment Control Handbook.

3.6. A cross-section or detail with channel design and construction data shall be provided on the construction plan for each open channel or segment, as applicable, for the drainage system. At a minimum, channel data shall include label, general location, shape or type, bottom width, top width, geotextile fabric, lining type and depth, slope, length, side slope and constructed depth. Pertinent design data should also be provided including the selected Mannings "n" value, drainage area, time of concentration, runoff coefficient or curve number, intensity, peak discharge, velocity and normal water depths for the 2-and 10-year design storm events, as applicable. The channel label shall match between the plan view and the channel detail.

3.7. Channel side slopes shall be 3H:1V or flatter. Slopes steeper than 3H:1V are required to use erosion control blankets to aid in the establishment of vegetative cover. No channel side slopes should be steeper than 2H:1V, unless specific and adequate designs are presented.

3.8. Low flow sections are recommended in the design of channels with large cross-section.

3.9. Use of rock or timber check dams similar to that required for Open Channel BMP Systems or other enhanced, pervious-type erosion resistant lining systems such as turf reinforcement mats (TRM's) are encouraged in non-critical areas to promote water quality and if ponding will not create a nuisance, hazard or undesirable condition.

4.0 Storm Drain and Inlet Design

4.1. All storm drains (sewers) shall be designed to convey the peak discharge from a 10-year design storm event. Design for larger storm events may be necessary if buildings or structures may be impacted.

4.2. Storm drains shall generally be designed as gravity flow, non-pressurized systems such that flow depth is less than the height of the conduit. Pressure flow systems, where pressure head is above the top of the conduit but less than inlet rim (top) elevations, are generally acceptable. Pressure flow systems, which may surcharge above inlet rim (top) elevations are generally not acceptable; however, may be allowed on a case-by-case basis depending on intended uses at the site and with proper coordination with the VESCP/VSMP authority. For all cases, hydraulic grade line computations are required.

4.3. Storm drain pipe shall be circular shaped. Use of galvanized Corrugated Metal Pipe (CMP) is not allowed without special permission. Allowable material types for new storm drains shall include: Reinforced Concrete Pipe; Corrugated Steel Fully Asphalt Coated and Fully Paved; Corrugated Steel Fully Asphalt Coated and Fully Concrete Lined; Steel or Aluminum Smooth Wall Spiral Rib Pipe; High Density Corrugated Polyethylene Smooth Interior Pipe; and Polyvinyl Chloride Ribbed or Corrugated Smooth Interior Pipe. These materials are subject to current applicable standards and specifications of VDOT for material, manufacture, transportation and handling.

4.4. Use of smooth interior, corrugated high density polyethylene pipe HDPE pipe is allowed but must follow proper manufacturer and pipe industry standards for flexible pipe design and installation including bedding, backfill, load and soil design. Appropriate reference to VDOT Road and Bridge Standards or specifications for pipe type and installation must be provided as intended use. If VDOT standards are not referenced, provide a typical bedding

and installation detail, indicate type of pipe and minimum cover requirements during construction and allowable maximum height of final and temporary cover for the type of pipe selected. Use of corrugated smooth interior high density polyethylene pipe for private-drainage systems should have proper reference on the construction plan for pipe type (AASHTO M252, AASHTO M294, ASTM F667, etc.), bedding and installation in accordance with association standards (ASTM D2321, etc.) and for connection type to concrete manholes structures or inlets (ASTM C923, etc.)

4.5. Other material types and shapes not specifically mentioned herein and not subject to VDOT jurisdiction may be allowable subject to advance notification and approval by the VESCP/VSMP authority. Alternate pipe materials shall have durability, structural and hydraulic properties comparable to reinforced concrete pipe. Sufficient manufacturer documentation may be required for design review as well as sufficient notes, specifications and details on the construction plans to ensure proper installation and construction. Pipe applicability shall be subject to manufacturer recommendations for height of cover, permissible velocity, corrosive resistance, pH of soil, pH of water and any historical records for corrosive resistance of similar pipe materials used in the service area.

4.6. Storm drain sizes shall be determined by use of Mannings Equation. Refer to standard references such as the VDOT Drainage Manual and/or the Virginia Erosion and Sediment Control Manual for use of the Mannings equation and selection of a Mannings "n" value for storm drain design. Typical Mannings "n" values for new, allowable pipe types include 0.013 for Reinforced Concrete Pipe; 0.013 for Corrugated Steel Fully Asphalt Coated and Fully Paved; 0.013 for Corrugated Steel Fully Asphalt Coated and Fully Concrete Lined; 0.014 for Steel or Aluminum Smooth Wall Spiral Rib Pipe; 0.012 for High Density Corrugated Polyethylene Smooth Interior Pipe; and 0.011 for Polyvinyl Chloride Ribbed or Corrugated Smooth Interior Pipe.

4.7. Hydrologic or hydraulic analyses of existing, old storm drainage pipes shall use Mannings "n" values of 0.013 for reinforced concrete pipe and 0.024 for any corrugated metal pipe regardless of lining or corrugation type.

4.8. Storm drain pipe, bedding, backfill and compaction requirements shall be provided on the plans or referenced to appropriate VDOT Road and Bridge specifications.

4.9. A profile view of the storm drain system(s) is strongly encouraged, but not required. Profiles shall show proper design and construction information, cover, potential utility conflicts and existing, interim (if applicable) and proposed grades. If storm drain (sewer) profiles are not to be provided within the project plan set, it is the design professional's responsibility to ensure that minimum cover is maintained, pipe wall thicknesses are adequate for anticipated maximum heights of cover for each storm drain segment, and no apparent conflicts with other site utilities are present. Clearly indicate all pipe types, thickness class, size, lengths and slope on the plan drawings, if no profiles are provided.

4.9. Minimum cover over storm drains shall not be less than one (1) foot, except at outfall locations. Maximum heights of cover shall not exceed VDOT or manufacturers recommendations for strength, class, thickness or size selected. Adequate temporary protection or cover shall be provided during construction operations to prevent wall crushing and non-uniform deflection.

4.10. Use of a structure and storm drain pipe schedule can be used on the construction plan set to show important storm drain and inlet construction information and to expedite the review process.

4.11. Storm drain hydraulic grade line computations (HGL) shall be provided for all gravity and pressure flow systems. The HGL shall be computed and presented using methods set forth in the VDOT Drainage Manual or other standard accepted computational spreadsheet, table or form. HGL computations and results should be attached in the supplemental drainage design report for the project and presented in a clear and easy to follow format. HGL presentation in graphical format on storm drain profiles, if provided, is acceptable.

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4.12. Minimum storm drain pipe diameter is 15 inches. Twelve (12) inch diameter may be accepted if pipe segment(s) are hydraulically adequate and will function properly. Generally, distances between 12 inch storm drain segments are limited to 50 feet or less.

4.13. Velocity of storm drains shall not be less than around 2.0 feet per second based on design full or partial flow conditions. Maximum culvert velocity shall be limited by the permissible velocity of the pipe material and outfall conditions. In general, storm drain interior velocities should not exceed 10 to 15 feet per second to prevent scour or loss of lining.

4.14. No reductions in pipe size are allowed in the downstream direction of flow.4.15. A minimum of one (1) foot vertical and five (5) feet horizontal clearance shall be provided between storm drains and underground utilities except for public water mains. For water mains or service lines, the minimum horizontal separation is ten (10) feet or as required by the governing jurisdiction (JCSA, etc.).

4.15. Storm drain slopes exceeding twenty (20) percent shall require anchors to prevent sliding of the pipe and a trench cut-off wall near the outfall to prevent piping of bedding material.

4.16. The ends, entry or exit of a storm drain system shall be provided with standard headwalls, endwalls, curb inlets, yard inlets, flared end sections or other appurtenances suitable for the intended storm drain system. Materials shall be consistent with the host storm pipe material and shall include any boots, grouting, collars, connections, etc. to ensure water tightness.

4.17. For maintenance purposes inlets, access structures (inlets, manholes, etc.) are required where two or more storm drains converge; where pipes change size; where a change in horizontal alignment occurs; and where a change in design grade occurs. The maximum length between access structures is 300 feet for pipes 24 inch or less; 400 feet for pipes between 24 and 36 inch; and 800 feet for pipes 36 inch and larger. Allowable spacing between access structures may be adjusted due to unusual site conditions or constraints with advance notification to the Engineering and Resource Protection Division. Curved alignments may be considered on a case-by-case basis with proper notification to the VESCP/VSMP authority and if based on sound pipe material manufacturer Association design standards and the joint deflections do not exceed established allowables.

4.18. Stormwater inlets shall be designed in accordance with hydraulic methods and procedures in the VDOT Drainage Manual or other standard accepted computational spreadsheet, table or form. Inlet sizing computations should be attached in the supplemental drainage design report for the project and presented in clear and easy to follow format.

4.19 Design plans shall specify the intended inlet and grate type, bar spacings (if applicable), top or rim elevation and invert elevation(s) as applicable. In urban, pedestrian accessible areas, grate type and bar spacing shall be selected based on safety considerations and specified on the construction plans and associated drainage report computations.

4.20. Yard inlets shall be designed for the 10-year design storm event and evaluated for the 100-year (check) storm. Adjacent properties or existing or proposed structures, buildings, walkways, etc. shall not be subject to water ponding. In general, siting and elevations of existing or proposed commercial or residential structures or lot grading shall be such that no flooding shall result from inlet ponding, backwater or overflow of inlet or pipe systems during the design or check storm event.

4.21. A minimum drop of 0.10 feet (1.2 inches) in invert is suggested at access structures.

4.22. Inlet shaping in accordance with VDOT Standard IS-1 is required within all access structures.

4.23. Steps in accordance with VDOT Standard ST-1 are required in all access structures exceeding four (4) feet in depth. Intermediate safety landings in accordance with VDOT Standard SL-1 may be required for excessively deep access structures.

4.24. Any modification or variance from standard VDOT drainage structures shall include sufficient notes, details, specifications and certification by the design professional on the plan to ensure proper construction.

5.0 ***Culvert Design***

5.1. Culverts for private roads, not to be included in the VDOT Secondary Road System, shall be designed for the 10-year storm event. Designs for higher frequency storm events (ie. 25-year, 50-year, 100-year) may be required, if formally requested by the County, for certain circumstances which involve protection of the public's health, safety or welfare or for areas with special flooding or drainage concerns.

5.2 In general, culverts lengths are limited to 100 feet or less of total length from the toe of fill to toe of fill. For construction purposes, designs should attempt to match proposed pipe length to standard available even pipe material lengths or nearest one-foot increments, to the greatest extent possible.

5.3. Culverts shall be designed for the 10-year design storm and evaluated for the check 100-year design storm events under inlet and outlet control conditions. Headwater (HW) elevation shall be determined using methods in the current edition of the Federal Highway Administration, Hydraulic Design Series No. 5, Hydraulic Design of Highway Culverts and the VDOT Drainage Manual, as applicable.

5.4. Culverts shall be sized so the HW elevation for the 10-year design storm event shall not exceed an elevation eighteen (18) inches below the edge of shoulder of the roadway.

5.5. Culverts shall be designed so the HW is within a range of 1.0 to 1.5 times the inside vertical dimension of the pipe (ie. HW/D between 1.0 and 1.5 with 1.2 ideal). Adequate consideration will be given to minimum pipe size and velocity requirements, which may affect these criteria.

5.6 Minimum culvert velocity is two (2) feet per second based on design flow conditions. Maximum culvert velocity shall be limited by the permissible velocity of the pipe material and outfall conditions. In general, pipe interior velocities should not exceed 10 to 15 feet per second to prevent scour or loss of lining.

5.7. A profile view of each culvert is strongly encouraged, but not required. The profile view shall show critical design information such peak design discharge, drainage area, time of concentration, runoff coefficient or curve number, water surface elevations and related construction data such as structure number, pipe size, slope, length, invert elevations, existing and proposed grade, end sections or headwalls, incidental channel grading and outlet protection requirements. However, standard headwater charts, data sheets and design computations are still required in the drainage report.

5.8. The headwater elevation for the 100-year design storm event shall not result in any upstream flooding building structures. Generally, the 100-year (check) storm return period must be checked to ensure conveyance without causing significant damage to the roadway, stream or adjacent property and to ascertain the effects of the culvert on any base flood elevations and to permit adequate passage of emergency vehicles if required during a flooding condition.

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5.9. Culvert bedding, backfill and compaction requirements shall be provided on the plans or referenced to appropriate VDOT Road and Bridge specifications and manufacturers or industry standard recommendations.

5.10. Standard headwalls, endwalls or flared end sections shall be provided on culverts in accordance with VDOT requirements and standards; or otherwise in accordance with the following: Standard endwalls or end sections, matching the host pipe material, shall be provided on all culverts except 12 inch and 15 inch diameter pipe culverts under driveways. For culverts 12 to 24 inch diameter, a flared end section shall be used unless the height of fill and side slope exceeds 10 feet or 2H:1V, respectively, in which case a standard headwall should be used. For culverts 24 to 36 inch diameter, either a flared end section or headwall shall be used. A flared end section is acceptable if fills are 10 feet or less, HW/D is less than 1.5, inflow is less than 50 c.f.s. and installation of a headwall would constitute a safety hazard. For culverts exceeding 36 inch diameter, a standard headwall shall be provided unless a safety hazard is present, in which case a flared end section should be considered.

5.11. Culverts shall be arch, box, circular, elliptical or oval-shaped. Use of reinforced concrete pipe is fully encouraged for standard culvert applications. Other culvert materials will be considered subject to advance notification and approval by the Engineering and Resource Protection Division. Alternate pipe materials shall have durability, structural and hydraulic properties compared to reinforced concrete pipe. Sufficient manufacturer documentation may be required for review as well as sufficient notes, specifications and details on the construction plans to ensure proper installation and construction. Alternate material may include, but are not limited to Corrugated Steel Fully Asphalt Coated and Fully Paved; Corrugated Steel Fully Asphalt Coated and Fully Concrete Lined; Steel or Aluminum Smooth Wall Spiral Rib Pipe; High Density Corrugated Polyethylene Smooth Interior Pipe; and Polyvinyl Chloride Ribbed or Corrugated Smooth Interior Pipe. Use of these materials is also subject to current applicable standards and specifications of VDOT and the manufacturer for material, manufacture, transportation and handling. Pipe applicability shall be subject to established VDOT and manufacturer design criteria for height of cover, permissible velocity, corrosive resistance, pH of soil, pH of water and any historical records for corrosive resistance of similar pipe materials used in the service area.

5.12. Use of smooth interior, corrugated high density polyethylene pipe HDPE pipe is allowed for culverts but must follow proper manufacturer and pipe industry standards for flexible pipe design and installation including bedding, backfill, load and soil design. Appropriate reference to VDOT Road and Bridge Standards or specifications for pipe type and installation must be provided as intended use. If VDOT standards are not referenced, provide a typical bedding and installation detail, indicate type of pipe and minimum cover requirements during construction and allowable maximum height of final and temporary cover for the type of pipe selected. Use of corrugated smooth interior high density polyethylene pipe for private-drainage systems should have proper reference on the construction plan for pipe type (AASHTO M252, AASHTO M294, ASTM F667, etc.), bedding and installation in accordance with association standards (ASTM D2321, etc.) and for connection type to concrete manholes structures or inlets (ASTM C923, etc.)

5.13. Typical Mannings “n” values for culvert pipe types include 0.013 for Reinforced Concrete Pipe; 0.013 for Corrugated Steel Fully Asphalt Coated and Fully Paved; 0.013 for Corrugated Steel Fully Asphalt Coated and Fully Concrete Lined; 0.014 for Steel or Aluminum Smooth Wall Spiral Rib Pipe; 0.012 for High Density Corrugated Polyethylene Smooth Interior Pipe; and 0.011 for Polyvinyl Chloride Ribbed or Corrugated Smooth Interior Pipe.

5.14. Minimum and maximum heights of cover shall meet VDOT and manufacturer recommendations for the pipe type, strength, class, thickness or size. Adequate temporary protection or cover shall be provided during construction operations to prevent wall crushing and non-uniform deflection.

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5.15. If required, improved inlets for culverts are acceptable if designed in accordance with current versions of the Federal Highway Administration, Hydraulic Engineering Circular No. 13, Hydraulic Design of Improved Inlets for Culverts and the VDOT Drainage Manual, as applicable. This includes beveled edged inlets, side tapered inlets and slope tapered inlets.

5.16. Minimum culvert size is 15 inch. Minimum culvert size across driveways, outside VDOT right-of-way is 12 inch.

6.0 Outlet Protection or Energy Dissipator Design

6.1. Erosion protection at storm drainage conveyance system outlets shall be provided in accordance with the Virginia Erosion and Sediment Control Handbook, Minimum Standard 3.18 and 3.19, for Outlet Protection and Riprap and current versions of the VDOT Drainage Manual and Road and Bridge Standards, as applicable. Outlet protection dimensions and depth, class and quantity of riprap and geotextile requirements shall be shown on the construction plans and details and design (sizing) computations shall be provided in the drainage report.

6.2. Outlet velocities in excess of eighteen (18) feet per second shall require use of special design energy dissipators, stilling or impact basins or if the receiving channel permissible velocities or space limitations are exceeded by use of standard riprap outlet protections. Designs shall include standard VDOT paved channels, paved flumes and EG-1 or 1A energy dissipators or other structures designed in accordance with FHWA, Hydraulic Engineering Circular (HEC) 14 for Hydraulic Design of Energy Dissipators for Culverts and Channels or other standard accepted references.

7.0 Storm Drainage Easements

7.1 Storm drainage easements, if required to be provided, shall be of sufficient width to provide the Owner with easy access to inspect, install, construct, reconstruct, operate, maintain or repair, any and all components of the drainage system.

7.2 Storm drainage easements, if required to be provided, shall be shown on the record plat and the stormwater management or drainage plan for the project.

7.3 In general, and at the discretion of the VESCP/VSMP administrator, no buildings or permanent structures shall be constructed within storm drainage easements. No trees, shrubs or woody vegetation or landscaping or permanently anchored structures, fences or obstacles shall be placed within a drainage easement which would render the easement inaccessible by vehicles, equipment or personnel.

7.4 In general, all facilities shall be located in the middle portion of the easement. Stormwater conveyance channel easements shall allow for sufficient width along one of the channel sides for vehicular access along the channel.

7.5 Consideration shall be given in selection of easement widths for potential upgrades or improvements that may be necessary in the future.

7.6 Storm drainage easements shall be provided in accordance with the following minimum width recommendations. Modification or adjustment to minimum required widths can be made on a case-by-case basis, depending on storm drain pipe size or channel geometry; however, in no case shall drainage easements be less than ten (10) feet in width.

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7.6.A. Stormwater Conveyance Channels (Open Channels)

Top Width of Channel	Minimum Easement Width
Less than 2 feet	15 feet
2 to 5 feet	20 feet
5 to 10 feet	25 feet
Greater than 10 feet	15 feet greater than top width of channel.

7.6.B. Storm Drains

Pipe Size	Minimum Easement Width
18 inch or smaller	15 feet
21 - 33 inch	20 feet
36 - 48 inch	25 feet
54 - 72 inch	30 feet
Greater than 72 inch	Advance notification and approval necessary.

7.6.C. Deeper Installations. Consideration shall be given to easement widths provided for deeper storm drain installations. The minimum easement widths as outlined above may be inadequate for deeper excavation and burial situations unless shoring and bracing is utilized. In general, beginning at ten (10) feet in depth, an additional five (5) feet of easement width is recommended for each five (5) foot increment of additional depth.

8.0 Post Installation Camera Inspection

8.1. As part of the asbuilt/construction certification process for stormwater conveyance systems, post installation camera inspections shall be peformed in accordance with the Chapter 8, Erosion and Sediment Control and Virginia Stormwater Management Program (VSMP) ordinance of the County Code and in accordance with standards and specifications developed by the VESCP/VSMP authority administrator. Camera inspections shall not be required for pipe systems that are in their entirety less than 15-inch in diameter.

8.2 (Additional work is needed on this section to develop specifications and guidelines per Section 8-25 and 8-27 of Article II of the Chapter 8 ordinance).

9.0 Construction and Installation

9.1. The Contractor shall keep the VESCP/VSMP authority notified of progress at all milestone stages of construction and/or if any unusual site or soil conditions are encountered during construction of storm drainage conveyance systems.

9.2. The Contractor is required to contact Miss Utility at 1-800-552-7001 and have existing utilities located prior to undertaking any excavations. This action does not relieve the Contractor of independent verification of existing utilities by hand excavation, test holes or other methods by their own forces.

9.3. The Contractor shall complete drainage facilities within thirty (30) days following the completion of rough grading at any point during the project. The installation of drainage facilities shall take precedence over all other underground utilities.

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9.4. The Contractor shall not open or expose more than three hundred (300) linear feet of underground storm drain trench at any one time. Excavated material associated with these operations shall be placed on the uphill side of trenches. Following installation, all disturbed areas are to be stabilized immediately.

9.5. The Contractor shall attempt to schedule installation of storm drainage conveyance system during dry or periods of low flow to the greatest extent possible. Natural stream or base flow may require temporary diversion or pumping to adequate sediment control facilities.

9.6. The Contractor shall use laser technology to establish and set grade for stormwater drainage conveyance facilities on excessively flat slopes (generally less than 0.5 percent).

9.7. All soil stabilization blankets and matting shall be inspected periodically by the Contractor to check for erosion and undermining. Any dislocation or failure should be repaired immediately. If washouts or breakage occurs, reinstall material after repairing damage to the slope or channel and reseed. Installation of blankets and matting shall follow the requirements of the VESCH and applicable manufacturer recommendations.

9.8. For EC-3 or TRM stormwater conveyance channel linings, the Contractor shall apply and work lime into the soil prior to placement of soil stabilization fabric. Following fabric installation, lining voids shall be filled with topsoil and seeded and fertilized by permanent seed methods specified.

9.9. The Contractor shall immediately replace channel stabilization blankets and erosion control matting if site work or associated utility operations such as cable, electric, gas, phone, sewer, water, etc. damage their functional intent.

9.10. The Contractor shall provide temporary liners, such as polyethylene sheets, for all paved channels until permanent concrete liners are installed.

9.11. The Contractor shall install paved channels where design channel linings are inadequate and channel erosion is clearly evident, particularly in areas where slopes exceed three percent.

9.12. The Contractor shall provide inlet shaping for any access structures so designated on the plan in accordance with VDOT Standard IS-1. Inlet shaping shall consist of smooth flow transitions with accurately shaped arcs connecting the inlet and outlet pipes to prevent obstructions to flow. Changes in size and grade shall be made gradually and evenly.

9.13. The Contractor shall provide inlet protections in accordance with VESCH, Minimum Standard 3.07, as soon as practical following construction of the same.

9.14. The Contractor shall provide steps for access structures greater than 4 feet in depth in accordance with VDOT Standard ST-1. Steps shall consist of forged aluminum or steel encased in corrosion resistant, non-sparking, non-conductive material of acceptable design and durability. Steps shall be cast integrally with precast drainage structures and shall be constructed into and securely anchored to the walls of the structure, if cast-in-place. Steps shall be uniformly spaced 12 to 16 inches on center vertically and shall project evenly unless otherwise directed.

9.15 The Contractor shall provide intermediate safety landings in accordance with VDOT Standard SL-1, as specified for select and excessively deep access structures.

9.16. The Contractor shall be responsible for replacing with matching material any existing or proposed drains, pipes, culverts and drainage structures damaged due to handling, installation or lack of adequate temporary protection or cover during construction.

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9.17. The Contractor shall be responsible for replacing with matching materials any existing pavement, driveways, walkways, curbs, etc. that must be cut or are in any way damaged during construction.

9.18. The Contractor shall clean storm drains and inlets of accumulated trash, debris and sediment at the last stage of construction.

9.19. The Contractor shall be responsible for implementing traffic and job site safety measures during construction activities; furnishing materials and workmanship that will result in drainage structures with suitable character and function; and recording details of construction necessary for inclusion into record drawing (as-built) or construction certifications as required by the Owner for the project.

DRAFT

Engineering and Resource Protection Division
101-E Mounts Bay Road
Williamsburg, VA 23185
757-253-6670
jamescitycountyva.gov

COUNTY OF JAMES CITY, VIRGINIA

DECLARATION OF COVENANTS
INSPECTION/MAINTENANCE OF DRAINAGE SYSTEM

Please type or print legibly in black ink. Covenantor(s) should submit this form to the JCC Engineering and Resource Protection Division, 101-E Mounts Bay Road, Williamsburg, VA 23185.

THIS DECLARATION OF COVENANTS, made this _____ day of _____, 20_____, between _____, and all successors in interest, ("COVENANTOR(S)"), owner(s) of the following property:

Parcel Identification Number(s): _____
Legal Description(s):_____
_____
Project or Subdivision Name: _____
Document/Instrument No(s): _____
or Deed Book _____, Page No. _____,
and the County of James City, Virginia ("COUNTY.")

WITNESSETH:

I (We), the COVENANTOR(S), with full authority to execute deeds, mortgages, other covenants, and all rights, titles and interests in the property described above, do hereby covenant with the COUNTY as follows:

1. The COVENANTOR(S) shall provide maintenance for the drainage system including any runoff control facilities, conveyance systems and associated easements, hereinafter referred to as the "SYSTEM," located on and serving the above-described property to ensure that the SYSTEM is and remains in proper working condition in accordance with approved design standards, and with the law and applicable executive regulations. The SYSTEM shall not include any elements located within any Virginia Department of Transportation rights-of-way.

2. If necessary, the COVENANTOR(S) shall levy regular or special assessments against all present or subsequent owners of property served by the SYSTEM to ensure that the SYSTEM is properly maintained.

3. The COVENANTOR(S) shall provide and maintain perpetual access from public right-of-ways to the SYSTEM for the COUNTY, its agent and its contractor.

4. The COVENANTOR(S) shall grant the COUNTY, its agent and its contractor a right of entry to the SYSTEM for the purpose of inspecting, monitoring, operating, installing, constructing, reconstructing, maintaining or repairing the SYSTEM.

5. If, after reasonable notice by the COUNTY, the COVENANTOR(S) shall fail to maintain the SYSTEM in accordance with the approved design standards and with the law and applicable executive regulations, the COUNTY may perform all necessary repair or maintenance work, and the COUNTY may assess the COVENANTOR(S) and/or all property served by the SYSTEM for the cost of the work and any applicable penalties.

Prepared by (Name, Address & Phone):
_____
_____
_____
_____

Return to:
JCC Attorney's Office
101-D Mount's Bay Road
Williamsburg, VA 23185
(757) 253-6612

6. The COVENANTOR(S) shall indemnify and save the COUNTY harmless from any and all claims for damages to persons or property arising from the installation, construction, maintenance, repair, operation or use of the SYSTEM.

7. The COVENANTOR(s) shall promptly notify the COUNTY when the COVENANTOR(S) legally transfers any of the COVENANTOR(S) responsibilities for the SYSTEM. The COVENANTOR(S) shall supply the COUNTY with a copy of any document of transfer, executed by both parties.

8. The covenants contained herein shall run with the land and shall bind the COVENANTOR(S) and the COVENANTOR(S)' heirs, executors, administrators, successors and assignees, and shall bind all present and subsequent owners of property served by the SYSTEM.

9. This COVENANT shall be recorded in the County Land Records.

IN WITNESS WHEREOF, the COVENANTOR(S) has executed this DECLARATION OF COVENANTS as of the date first above written.

COVENANTOR(S)

_____
Signature

_____
Print Name and Title

ACKNOWLEDGMENT

COMMONWEALTH OF VIRGINIA
CITY/COUNTY OF _____, to wit:

I hereby certify that on this _____ day of _____, 20_____, before the subscribed, a Notary Public for the Commonwealth of Virginia, personally appeared _____ and did acknowledge the foregoing instrument to be his/her Act.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal this _____ day of _____, 20____.

[SEAL]

_____
Notary Public

Notary Registration Number: _____

My Commission expires: _____

Approved as to form:

_____
County Attorney

Engineering and Resource Protection Division

101-E Mounts Bay Road, P.O. Box 8784
Williamsburg, VA 23187-8784
F: 757-259-4032
jamescitycountyva.gov
Resource.Protection@jamescitycountyva.gov

INSPECTION REPORT

Project Name:_____ Project Authority:_____

RLD Name:_____ RLD No. _____

Project Location:_____ Project No:_____

Inspector Name:_____ Inspection Date:_____ Time: _____

STAGE OF CONSTRUCTION

Pre-Construction Conference ☐ *Building Construction* ☐ *Construction of SWM Facilities* ☐
Clearing & Grubbing ☐ *Finish Grading* ☐ *Maintenance of SWM Facilities* ☐
Rough Grading ☐ *Final Stabilization* ☐ *Other*_____ ☐

Item#	*State/Local Regulation(1)*	*Violation*		*Description and Location of Problem/Violation(2), Required or Recommended Corrective Actions, and Other Comments/Notes*
		Initial	*Repeat*	

(1) Refers to applicable regulation found in the most recent publication of the *Virginia Erosion and Sediment Control Regulations* (4VAC50-30), *Virginia Stormwater Management Regulations* (4VAC3-20), or local ESC/SWM ordinance.
(2) Note whether or not off-site damage resulting from the problem/violation was evident during the inspection.

REQUIRED CORRECTIVE ACTION DEADLINE DATE:_____ **Re-inspection Date:**_____
(DD/MM/YY) **(DD/MM/YY)**

The required corrective action deadline date applies to all violations noted on this report. If listed violation(s) currently constitute non-compliance and/or required corrective actions are not completed by the deadline, a **NOTICE TO COMPLY**, **STOP WORK ORDER**, and/or other enforcement actions may be issued to the entity responsible for ensuring compliance on the above project.

Inspector:_____ _____
Signature Date

*Acknowledgement of on site report receipt:*_____ _____ _____
Print Name *Signature* *Date*

This report will be provided to the following parties via mail, fax, or e-mail within 24 hours of inspection:

_____

_____

Engineering and Resource Protection Division

101-E Mounts Bay Road, P.O. Box 8784
Williamsburg, VA 23187-8784
F: 757-259-4032
jamescitycountyva.gov
Resource.Protection@jamescitycountyva.gov

INSPECTION REPORT

Project Name:_____ Inspection Date:_____ ____ ____

Item#	*State/Local Regulation(1)*	*Violation*		*Description and Location of Problem/Violation(2), Required or Recommended Corrective Actions, and Other Comments/Notes*
		Initial	*Repeat*	

(1) Refers to applicable regulation found in the most recent publication of the *Virginia Erosion and Sediment Control Regulations* (4VAC50-30), *Virginia Stormwater Management Regulations* (4VAC3-20), or local ESC/SWM ordinance.

(2) Note whether or not off-site damage resulting from the problem/violation was evident during the inspection.

DEQ *SAMPLE* VSMP AUTHORITY CONSTRUCTION GENERAL PERMIT SITE INSPECTION CHECKLIST

(All section references bellow are to the Construction GP 9VAC25-880-70 effective 7/1/14)

Project Name: _____ Permit Number: _____

Project Address: _____ County/City: _____

Project Operator: _____ Operator Telephone: _____

Operator Address: _____ County/City: _____ ZIP: _____

Inspector Name: _____ Inspection Date: _____ Time: _____

		Yes	*No*	*N/A*	*Recommended Corrective Action/ Notes*
1	Copy of notice of coverage letter posted near main entrance: Part II(C)				
2	Information for public access to electronic format or hard copy of SWPPP posted near main entrance: Part II(D)3				
3	Copy of complete SWPPP available onsite for operators: Part II(A)				
3a	Signed copy of registration statement: Part II(A)1.a				
3b	Copy of permit: Part II(A)1.b				
3c	Copy of notice of coverage letter: Part II(A)1.c				
3d	Narrative description of the nature of construction activity: Part II(A)1.d				
3e	Legible site plan: Part II(A)1.e				
3f	Approved ESC plan, “agreement in lieu of a plan”, or ESC plan developed in accordance with department approved annual standards and specifications: Part II(A)2				
3g	Approved SWM plan or SWM plan developed in accordance with department approved annual standards and specifications: Part II(A)3				
3h	Pollution prevention plan: Part II(A)4				
3i	Requirements for discharges to impaired waters, surface waters with an applicable TMDL, exceptional waters (if applicable): Part II(A)5				
3j	Contact information for qualified personnel conducting inspections: Part II(A)6				
3k	SWPPP signed in accordance with Part III K: Part II(A)8				
4	SWPPP is being amended, modified and updated: Part II(B)				
4a	SWPPP clearly identifies the contractor(s) that will implement and maintain each control measure identified in SWPPP: Part II(B)3				
4b	Record of dates when major grading activities occurred: Part II(B)4.a(1)				
4c	SWPPP amendments, modifications, or updates signed in accordance with Part III K: Part II(B)5				
5	SWPPP inspections carried out: Part II(F)				
5a	Inspections conducted at required frequency: Part II(F)2				
5b	Inspection reports summarize findings of inspections including corrective actions: Part II(F)4.a-i				
5c	Inspection reports have date and signature of qualified personnel conducting inspections and the operator or authorized representative: Part II(F)4.j				
5d	Inspection reports retained as part of SWPPP: Part II(F)4				
6	Erosion and sediment controls implemented: Part II(A)2.c				
6a	Volume and velocity of stormwater runoff controlled within site to minimize erosion: Part II(A)2.c(1)				
6b	Stormwater discharges, including peak flow rates and total stormwater volume controlled to minimize erosion at outlets and to minimize downstream channel and stream bank erosion: Part II(A)2.c(2)				
6c	Soil exposed during construction activity minimized: Part II(A)2.c(3)				
6d	Disturbance of steep slopes minimized: Part II(A)2.c(4)				
6e	Natural buffers around surface waters provided and maintained, stormwater directed to vegetated areas to increase sediment removal, and maximizes stormwater infiltration: Part II(A)2.c(6)				
6f	Soil compaction minimized and topsoil preserved: Part II(A)2.c(7)				

6g	Stabilization of disturbed areas initiated immediately whenever any clearing, grading, or excavating, or other land-disturbing activities have permanently ceased on any portion of the site, or temporarily ceased on any portion of the site and will not resume for more than 14 days: Part II(A)2.c(8)				
6h	Outlet structures utilized that withdraw stormwater from the surface when discharging from sediment basins or sediment traps: Part II(A)2.c(9)				
7	Pollution prevention plan implemented: Part II(A)4				
7a	Prevent and respond to leaks, spills and other releases including (i) procedures for expeditiously stopping, containing, and cleaning up spills, leaks, and other releases; and (ii) procedures for reporting leaks, spills, and other releases: Part II(A)4.e(1)				
7b	Prevent discharge of spilled and leaked fuels and chemicals from vehicle fueling and maintenance activities (e.g. providing secondary containment such as spill berms, decks, spill containment pallets, providing cover where appropriate, and having spill kits readily available): Part II(A)4.e(2)				
7c	Prevent discharge of soaps, solvents, detergents, and wash water from construction materials, including the clean-up of stucco, paint, form release oils, and curing compounds (e.g., providing (i) cover (e.g., plastic sheeting or temporary roofs) to prevent contact with stormwater; (ii) collection and proper disposal in a manner to prevent contact with stormwater; and (iii) a similarly effective means designed to prevent discharge of these pollutants): Part II(A)4.e(3)				
7d	Minimize discharge of pollutants from vehicle and equipment washing, wheel wash water and other types of washing (e.g., locating activities away from surface waters and stormwater inlets or conveyance and directing wash waters to sediment basins or traps, using filtration devices such as filter bags or sand filters or using similarly effective controls): Part II(A)4.e(4)				
7e	Direct concrete wash water into a leak-proof container or leak-proof settling basin that is designed so that no overflows can occur due to inadequate sizing or precipitation. Hardened concrete wastes shall be removed and disposed of in a manner consistent with the handling of other construction wastes. Liquid concrete wastes shall be removed and disposed of in a manner consistent with the handling of other construction wash waters and shall not be discharged to surface waters: Part II(A)4.e(5)				
7f	Minimize discharge of pollutants from storage, handling, and disposal of construction products, materials and wastes including (i) building products such as asphalt sealants, copper flashing, roofing materials, adhesives, concrete admixtures; (ii) pesticides, herbicides, insecticides, fertilizers, and landscape materials; and (iii) construction and domestic wastes such as packaging materials, scrap construction materials, masonry products, timber, pipe and electrical cuttings, plastics, styrofoam, concrete, and other trash or building materials: Part II(A)4.e(6)				
7g	Prevent discharge of fuels, oils, and other petroleum products, hazardous or toxic wastes, and sanitary wastes: Part II(A)4.e(7)				
7h	Address any other discharge from the potential pollutant-generating activities not addressed above: Part II(A)4.e(8)				
8	Appears to be impact(s) to receiving waters: Part I(B)6, Part I(D), or Part II(A)2c(2) or (5): {Provide location(s) & description of impact(s).}				

SAMPLE VSMP CONSTRUCTION GP SITE INSPECTION CHECKLIST

Project Name: _____ Permit Number: _____

Project Address: _____ County/City: _____

Inspector Name: _____ Inspection Date: _____ Time: _____

STAGE OF CONSTRUCTION

Pre-Construction Conference	☐	*Building Construction*	☐	*Construction of SWM Facilities*	☐
Clearing & Grubbing	☐	*Finish Grading*	☐	*Maintenance of SWM Facilities*	☐
Rough Grading	☐	*Final Stabilization*	☐	*Other:*	☐

#	*State Regulation*[1]			*Description and Location of condition observed*[2], *Recommended Corrective Actions, and Other Comments*
		Initial	*Repeat*	

(1) Refers to applicable regulation found in the most recent publication of the *Virginia Erosion and Sediment Control Regulations* (9VAC25-840), the *General Permit for Discharges of Stormwater from Construction Activities* (9VAC25-880), or the *Virginia Stormwater Management Program Regulations* (9VAC25-870).

(2) Note whether or not off-site impacts resulting from the condition observed was evident during the inspection.

Recommended Corrective Action Deadline: _____ Targeted Re-inspection Date: +/- 2 weeks

The recommended corrective action deadline date applies to all conditions noted on this report unless otherwise noted. If listed condition(s) currently constitute non-compliance and/or corrective actions are not completed by the deadline, other enforcement actions may be issued to the entity responsible for ensuring compliance on the above project.

Inspector: _____ _____

Signature Date

Report e-mailed to _____

Photo documentation

DEQ Sample Construction Inspection Checklist: Simple Disconnection

The following checklist provides a basic outline of the anticipated items for the construction inspection of simple disconnections. Users of this information may wish to incorporate these items into a VSMP Authority Construction Checklist format consistent with the format used for erosion and sediment control and BMP construction inspections.

- ☐ Pre-construction meeting with the contractor designated to install the disconnection practice has been conducted.
- ☐ Impervious cover has been constructed/installed and area is free of construction equipment, vehicles, material storage (other than those needed for the disconnection practice), etc.
- ☐ All pervious areas adjacent to the impervious cover have been adequately stabilized.
- ☐ Downspouts have been installed and proper drainage away from the building foundation has been provided.
- ☐ Topsoil and/or soil amendments are nearby and certified as meeting the design specifications
- ☐ Downspout runoff has been temporary diverted to a stabilized conveyance.
- ☐ Erosion and sediment control practices are either in place to protect the area, or if no longer needed, removed.
- ☐ Proper grades have been achieved with light equipment to avoid compaction to provide the required geometry of the disconnection practice: length and width, and slope; or
- ☐ Proper grades have been achieved to provide the required geometry of the disconnection practice: length and width, and slope, and the area has been rototilled to reverse the soil compaction resulting from construction traffic.
- ☐ Pretreatment level spreader or energy dissipaters have been installed per the approved plans.
- ☐ Soil amendments, if specified, have been incorporated as specified (thickness of compost material and incorporated to the required depth).
- ☐ Disconnection filter path is completely stabilized with adequate mulch (stabilization matting, such as EC-3, or other equally effective practice).
- ☐ Follow-up inspection and as-built survey/certification has been scheduled.
- ☐ GPS coordinates have been documented for all disconnection practices on the parcel.

DEQ Sample Construction Inspection Checklist: Sheet Flow

The following checklist provides a basic outline of the anticipated items for the construction inspection of simple disconnections. Users of this information may wish to incorporate these items into a VSMP Authority Construction Checklist format consistent with the format used for erosion and sediment control and BMP construction inspections.

Sheet Flow to Conserved Open Space Areas

- ☐ Pre-construction meeting with the contractor designated to install the sheet flow practice has been conducted.
- ☐ Impervious cover has been constructed/installed and area is free of construction equipment, vehicles, material storage, etc.
- ☐ All pervious areas of the contributing drainage areas have been adequately stabilized and erosion control measures have been removed.
- ☐ Area of the Conserved Open Space has been clearly marked and protected from construction traffic with adequate signage and fencing, and is in good condition (undisturbed – other than for pruning or other vegetation management needs).
- ☐ Area of the Conserved Open Space has been clearly marked and protected from construction runoff and sediment with appropriate sediment control measures (super silt fence, berms, etc.).
- ☐ Stormwater has been diverted for the construction of the inflow (Level Spreader or gravel diaphragm).
- ☐ Any light grading required to establish the upper boundary of the Conserved Open Space has been performed with light equipment and minimal impact to the existing vegetation.
- ☐ Construction of engineered Level Spreader for concentrated inflow or a gravel diaphragm or other pretreatment measure for sheet flow has been completed and the area stabilized as needed.
- ☐ Stormwater runoff directed into Conserved Open Space after the area at the upper boundary has been stabilized.
- ☐ All erosion and sediment control practices have been removed.
- ☐ Follow-up inspection and as-built survey/certification has been scheduled.
- ☐ GPS coordinates have been documented for all Conserved Open Spaces on the parcel.

Sheet Flow to Vegetated Filter Strips

- ☐ Pre-construction meeting with the contractor designated to install the sheet flow practice has been conducted.
- ☐ Impervious cover has been constructed/installed and area is free of construction equipment, vehicles, material storage, etc.
- ☐ All pervious areas of the contributing drainage areas have been adequately stabilized and erosion control measures have been removed.
- ☐ Area of the Vegetated Filter Strip has been clearly marked and protected from construction traffic with adequate signage and fencing, and is in good condition; or
- ☐ Area of the Vegetated Filter Strip has been previously (temporarily) stripped of topsoil during construction is scheduled for restoration and soil amendments (if required).
- ☐ Topsoil and/or soil amendments are nearby and certified as meeting the design specifications
- ☐ Proper grades have been achieved with light equipment to avoid compaction to provide the required geometry of the disconnection practice: length and width, and slope, and prepare the upper boundary has been performed.
- ☐ Stormwater has been diverted for the construction of the inflow measures (Level Spreader or gravel diaphragm).
- ☐ Soil amendments, if specified, have been incorporated as specified (thickness of compost material and incorporated to the required depth).
- ☐ Construction of engineered Level Spreader for concentrated inflow or a gravel diaphragm or other pretreatment measure for sheet flow has been completed.
- ☐ The entire area of the Vegetated Filter Strip has been stabilized and achieved a dense turf cover prior to diverting runoff into the practice.
- ☐ All erosion and sediment control practices have been removed.
- ☐ Follow-up inspection and as-built survey/certification has been scheduled.
- ☐ GPS coordinates have been documented for all Vegetated Filter Strips on the parcel.

DEQ Sample Construction Inspection Checklist: Grass Channels

The following checklist provides a basic outline of the anticipated items for the construction inspection of simple disconnections. Users of this information may wish to incorporate these items into a VSMP Authority Construction Checklist format consistent with the format used for erosion and sediment control and BMP construction inspections.

- ☐ Pre-construction meeting with the contractor designated to install the grass channel practice has been conducted.
- ☐ Impervious cover has been constructed/installed and area is free of construction equipment, vehicles, material storage, etc.
- ☐ All pervious areas of the contributing drainage areas have been adequately stabilized and erosion control measures have been removed.
- ☐ Grass channel has not been used during construction; or
- ☐ Grass channel has been used for construction and is scheduled to be restored by removing construction sediment and incorporating soil amendments.
- ☐ Stormwater has been diverted for the construction of the inflow measures (level spreader or gravel diaphragm).
- ☐ Proper grades have been achieved with light equipment to avoid compaction to provide the required geometry of the grass channel: length and longitudinal slope, bottom width, and side slopes.
- ☐ Soil amendments, if required, have been incorporated as specified (thickness of compost material and incorporated to the required depth).
- ☐ Check dams, (including driveway culverts, if required, have been installed in accordance with the approved plans (spacing, height, elevation of overflow notch, energy dissipaters, keyed into side slopes, etc.).
- ☐ Energy dissipater and sediment forebay (if required) have been installed at the areas of concentrated inflow in accordance with the approved plans.
- ☐ Pretreatment practices have been installed for sheet flow entry.
- ☐ Channel bed and banks and adjacent disturbed areas have all been adequately stabilized (with matting if required, or needed to ensure a dense vegetative cover) prior to diverting runoff into the channel.
- ☐ All erosion and sediment control practices have been removed.
- ☐ Follow-up inspection and as-built survey/certification has been scheduled.
- ☐ GPS coordinates have been documented for all grass channels on the parcel.

DEQ Sample Construction Inspection Checklist: Vegetated Roof

Inspections during construction are needed to ensure that the vegetated roof is built in accordance the proper specifications. Detailed inspection checklists should be used that include sign-offs by qualified individuals at critical stages of construction and confirm that the contractor's interpretation of the plan is consistent with the intent of the designer and/or manufacturer.

An experienced installer should be retained to construct the vegetated roof system. The vegetated roof should be constructed in sections for easier inspection and maintenance access to the membrane and roof drains. Careful construction supervision is needed during several steps of vegetated roof installation, as follows:

- During placement of the waterproofing layer, to ensure that it is properly installed and watertight;
- During placement of the drainage layer and drainage system;
- During placement of the growing media, to confirm that it meets the specifications and is applied to the correct depth;
- Upon installation of plants, to ensure they conform to the planting plan;
- Before issuing use and occupancy approvals; and

An additional inspection should be conducted at the end of the first or second growing season to ensure desired surface cover specified in the Care and Replacement Warranty has been achieved.

Upon final inspection and acceptance, log the filtering practice's GPS coordinates and submit them for entry into the local BMP maintenance tracking database.

DEQ Sample Construction Inspection Checklist: Rainwater Harvesting

The following items should be inspected prior to final sign-off and acceptance of a rainwater harvesting system:

- Rooftop area matches plans
- Diversion system is properly sized and installed
- Pretreatment system is installed
- Mosquito screens are installed on all openings
- Overflow device is installed and discharges as shown on plans
- Rainwater harvesting system foundation is constructed as shown on plans
- Catchment area and overflow area are stabilized
- Secondary runoff reduction practice(s) is installed as shown on plans
- Inflow and outflow pipes and distribution system are constructed in accordance with the approved plans and have been tested for water-tightness.

DEQ Sample Construction Inspection Checklist: Permeable Pavement

The following checklist provides a basic outline of the anticipated items for the construction inspection of permeable pavement for use as stormwater BMPs. This checklist does not necessarily differentiate between the types of pavement materials and the different construction requirements. The designer and the VSMP Authority personnel should consult with the manufacturer of the material to ensure that proper construction oversight and inspections are provided. Also, users of this information may wish to incorporate these items into a VSMP Authority Construction Checklist format consistent with the format used for erosion and sediment control and BMP construction inspections.

- ☐ **Pre-construction meeting**
  - ☐ Walk through site with builder/contractor/subcontractor to review the SWPPP (erosion and sediment control plan, the stormwater management plan, and the Pollution Prevention plan)
  - ☐ Determine when permeable pavement is built in project construction sequence; before or after building construction and determine measures for protection and surface cleaning.
  - ☐ Identify the tentative schedule for construction and verify the requirements and schedule for interim inspections and sign-off.
  - ☐ Aggregate material locations identified (hard surface or on geotextile)
- ☐ **Material Storage**
  - ☐ Materials stored in protected area free from mud, dirt and other foreign materials.
- ☐ **Sediment management**
  - ☐ Access routes for delivery and construction vehicles identified
  - ☐ Vehicle tire/track washing station location/maintenance (if specified in the erosion and sediment control plan/SWPPP)
  - ☐ Contributing drainage areas are stabilized and are not eroding
- ☐ **Excavation**
  - ☐ Utilities located and marked by local service
  - ☐ Excavated area marked with paint and/or stakes
  - ☐ Excavation size and location conforms to plan
  - ☐ Runoff is diverted around the excavation area to a stabilized conveyance.
  - ☐ If excavation is used as a sediment trap: verify that the bottom elevation of the proposed stone reservoir is lower than the bottom elevation of the existing trap.
  - ☐ Subgrade surface is free of rocks and roots, and large voids. Any voids should be refilled with the base aggregate to create a level surface for the placement of aggregates and underdrain (if required).
  - ☐ For Level 2 permeable pavement, ensure the bottom of the excavation is scarified prior to placement of stone.
  - ☐ No groundwater seepage or standing water is present. Any standing water is dewatered to an acceptable dewatering device.

- ☐ The excavation has achieved the proper elevations and grade as noted on the approved plans.
- ☐ **Certification of Excavation Inspection**: Inspector certifies the successful completion of the Excavation steps listed above.

☐ **Filter Layer and Underdrain Placement**

- ☐ All aggregates, including, as required, the filter layer (choker stone & sand), the reservoir layer, and bedding layer are clean and washed and otherwise conform to specifications as certified by quarry.
- ☐ Underdrain size and perforations meet the specifications.
- ☐ Placement of filter layer and initial layer of reservoir layer aggregates (approximately 2 inches) spread (not dumped) to avoid aggregate segregation; or
- ☐ Impermeable liner meets project specifications and is placed in accordance with manufacturers specifications.
- ☐ Placement of underdrain, observation wells, and underdrain fittings (45 degree wyes, cap at upstream end, etc.) in accordance with the approved plans.
- ☐ Invert elevations of underdrain and outlet structure and surface gradient in accordance with approved plans.
- ☐ **Certification of Filter Layer and Underdrain Placement Inspection:** Inspector certifies the successful completion of the filter layer and underdrain placement steps listed above.

☐ **Stone Reservoir Aggregate Placement**

- ☐ Sides of excavation covered with geotextile, when required, prior to placing stone reservoir aggregate; no tears or holes, or excessive wrinkles are present.
- ☐ Thickness, placement, compaction and surface tolerances meet specifications and approved plans.
- ☐ **Certification of Stone Reservoir Aggregate Placement Inspection**: Inspector certifies the successful stone reservoir layer placement steps listed above.

☐ **Bedding Layer and Pavement Installation**

- ☐ **Certification of Pavement Installation:** Contractor and/or manufacturer certifies that permeable pavement has been placed in accordance with manufacturers specifications (surface is even, runoff spreads evenly across surface, etc.).
- ☐ All erosion and sediment control practices have been removed.
- ☐ Pre-treatment structures (if applicable) are properly installed.
- ☐ Follow-up inspection and as-built survey/certification has been scheduled.
- ☐ GPS coordinates have been documented for all permeable pavement installations on the parcel.

DEQ Sample Construction Inspection Checklist: Infiltration

The following checklist provides a basic outline of the anticipated items for the construction inspection of Infiltration Practices. The users of this information may wish to incorporate these items into a VSMP Authority Construction Checklist format consistent with the format used for erosion and sediment control and BMP construction inspections.

- ☐ Pre-construction meeting with the contractor designated to install the infiltration practice has been conducted.
- ☐ Subsurface investigation and soils report supports the placement of an infiltration practice in the proposed location.
- ☐ Impervious cover has been constructed/installed and area is free of construction equipment, vehicles, material storage), etc.
- ☐ Area of infiltration practice has not been impacted during construction.
- ☐ All pervious areas of the contributing drainage areas have been adequately stabilized with a thick layer of vegetation and erosion control measures have been removed.
- ☐ Stormwater has been diverted around the area of the infiltration practice and perimeter erosion control measures to protect the facility during construction have been installed. .
- ☐ Excavation of the infiltration practice has achieved proper grades and the required geometry for the subsurface infiltration trench or the surface infiltration basin without compacting the bottom of the excavation.
- ☐ **Interim Excavation Inspection Certification**: Inspector certifies the successful completion of the excavation steps listed above.
- ☐ For infiltration trenches, placement of filter fabric, as required, on the side slopes.
- ☐ Bottom of trench has been scarified.
- ☐ Six-inch filter layer of sand placed on the trench bottom
- ☐ Observation well placed.
- ☐ Remaining stone aggregate placed (not dumped) in 6-inch lifts.
- ☐ Top surface of infiltration practice in accordance with approved plans.
- ☐ All erosion and sediment control practices have been removed.
- ☐ Follow-up inspection and as-built survey/certification has been scheduled.
- ☐ GPS coordinates have been documented for all infiltration practices on the parcel.

DEQ Sample Construction Inspection Checklist: Bioretention

The following checklist provides a basic outline of the anticipated items for the construction inspection of Bioretention Practices. This checklist does not necessarily distinguish between all the design variations and differences in construction between the family of practices: bioretention basins, micro-bioretention (or raingardens), and urban bioretention. Similarly, the use of an infiltration sump below an underdrain, or an infiltration sump with an "upturned elbow", and other variations between Level 1 and Level 2 bioretention may not be clearly identified in this checklist. Inspectors should review the plans carefully, and adjust these items and the timing of inspection verification as needed to ensure the intent of the design is met. Finally, users of this information may wish to incorporate these items into a VSMP Authority Construction Checklist format consistent with the format used for erosion and sediment control and BMP construction inspections.

Pre-Construction Meeting

☐ Pre-construction meeting with the contractor designated to install the bioretention practice has been conducted.

☐ Identify the tentative schedule for construction and verify the requirements and schedule for interim inspections and sign-off.

☐ Subsurface investigation and soils report supports the placement of an bioretention practice in the proposed location.

☐ Impervious cover has been constructed/installed and area is free of construction equipment, vehicles, material storage, etc.

☐ All pervious areas of the contributing drainage areas have been adequately stabilized with a thick layer of vegetation and erosion control measures have been removed.

☐ Area of bioretention practice has not been impacted during construction.

☐ Stormwater has been diverted around the area of the bioretention practice and perimeter erosion control measures to protect the facility during construction have been installed. .

Excavation

☐ Compare the bioretention surface and invert design elevations with the actual constructed elevations of the inflow and outlet inverts and adjust design elevations as needed.

☐ Area of bioretention excavation is marked and the size and location conforms to plan.

☐ If the excavation area has been used as a sediment trap: verify that the bottom elevation of the proposed stone reservoir is lower than the bottom elevation of the existing trap.

☐ For Level 2 bioretention, ensure the bottom of the excavation is scarified prior to placement of stone.

- ☐ Subgrade surface is free of rocks and roots, and large voids. Any voids should be refilled with the base aggregate to create a level surface for the placement of aggregates and underdrain (if required).
- ☐ No groundwater seepage or standing water is present. Any standing water is dewatered to an acceptable dewatering device.
- ☐ Excavation of the bioretention practice has achieved proper grades and the required geometry and elevations without compacting the bottom of the excavation.
- ☐ **Certification of Excavation Inspection**: Inspector certifies the successful completion of the excavation steps listed above.

Filter Layer, Underdrain, and Stone Reservoir Placement

- ☐ All aggregates, including, as required, the filter layer (choker stone & sand), the stone reservoir layer or infiltration sump conform to specifications as certified by quarry.
- ☐ Underdrain size and perforations meet the specifications.
- ☐ For Level 2 installations: placement of filter layer and initial lift of stone reservoir layer aggregates with underdrain or infiltration sump, spread (not dumped) to avoid aggregate segregation; or
- ☐ Impermeable liner, when required, meets project specifications and is placed in accordance with manufacturers specifications.
- ☐ Sides of excavation covered with geotextile, when required, prior to placing stone reservoir aggregate; no tears or holes, or excessive wrinkles are present.
- ☐ Placement of underdrain, observation wells, and underdrain fittings (45 degree wyes, cap at the upstream end, etc.) are in accordance with the approved plans.
- ☐ Elevations of underdrain and outlet structure are in accordance with approved plans, or as adjusted to meet field conditions.
- ☐ Placement of remaining lift of stone reservoir layer as needed to achieve the required reservoir depth.
- ☐ **Certification of Filter Layer and Underdrain Placement Inspection:** Inspector certifies the successful completion of the filter layer and underdrain placement steps listed above.

Bioretention Soil Media Placement

- ☐ Soil media is certified by supplier or contractor as meeting the project specifications.
- ☐ Soil media is placed in 12-inch lifts to the design top elevation of the bioretention area. Elevation has been verified after settlement (2 to 4 days after initial placement).
- ☐ Side slopes of ponding area are feathered back at the required slope (no steeper than 3H:1V).

☐ **Certification of Soil Media Placement Inspection:** Inspector certifies the successful completion of the soil media steps listed above.

Pretreatment and Plant Installation

☐ Placement of energy dissipators and pretreatment practices (forebays, gravel diaphragms, etc.) are installed in accordance with the approved plans.

☐ Riser, overflow weir, or other outflow structure is set to the proper elevation and functional; or.

☐ External bypass structure is built in accordance with the approved plans.

☐ Appropriate number and spacing of plants are installed in accordance with the approved plans.

☐ All erosion and sediment control practices have been removed.

☐ Follow-up inspection and as-built survey/certification has been scheduled.

☐ GPS coordinates have been documented for all bioretention practice installations on the parcel.

DEQ Sample Construction Inspection Checklist: Dry Swale

The following checklist provides a basic outline of the anticipated items for the construction inspection of dry swales. This checklist does not necessarily distinguish between the use of an infiltration sump below an underdrain, or an infiltration sump with an "upturned elbow". Similarly, design variations between Level 1 and Level 2 dry swales and different configurations of check dams may not be clearly identified in this checklist. Inspectors should review the plans carefully, and adjust these items and the timing of inspection verification as needed to ensure the intent of the design is met. Finally, users of this information may wish to incorporate these items into a VSMP Authority Construction Checklist format consistent with the format used for erosion and sediment control and BMP construction inspections.

Pre-Construction Meeting

☐ Pre-construction meeting with the contractor designated to install the dry swale has been conducted.

☐ Identify the tentative schedule for construction and verify the requirements and schedule for interim inspections and sign-off.

☐ Subsurface investigation and soils report supports the placement of a dry swale in the proposed location.

☐ Impervious cover has been constructed/installed and area is free of construction equipment, vehicles, material storage, etc.

☐ All pervious areas of the contributing drainage areas have been adequately stabilized with a thick layer of vegetation and erosion control measures have been removed.

☐ Area of the dry swale has not been impacted during construction.

☐ Stormwater has been diverted around the area of the dry swale and perimeter erosion control measures to protect the facility during construction have been installed. .

Excavation

☐ Compare the dry swale surface and invert design elevations with the actual constructed elevations of the inflow and outlet inverts and adjust design elevations as needed.

☐ Area of dry swale excavation is marked and the size and location conforms to plan.

☐ If the excavation area has been used as a sediment trap: verify that the bottom elevation of the proposed stone reservoir is lower than the bottom elevation of the existing trap.

☐ For Level 2 dry swale, ensure the bottom of the excavation is scarified prior to placement of stone.

☐ Subgrade surface is free of rocks and roots, and large voids. Any voids should be refilled with the base aggregate to create a level surface for the placement of aggregates and underdrain (if required).

- ☐ No groundwater seepage or standing water is present. Any standing water is dewatered to an acceptable dewatering device.
- ☐ Excavation of the dry swale has achieved proper grades, longitudinal slope, and the required geometry and elevations without compacting the bottom of the excavation.
- ☐ **Certification of Excavation Inspection**: Inspector certifies the successful completion of the excavation steps listed above.

Filter Layer, Underdrain, and Stone Reservoir Placement

- ☐ All aggregates, including, as required, the filter layer (choker stone & sand), the stone reservoir layer or infiltration sump conform to specifications as certified by quarry.
- ☐ Underdrain size and perforations meet the specifications.
- ☐ For Level 2 installations: placement of filter layer and initial lift of stone reservoir layer aggregates with underdrain or infiltration sump, spread (not dumped) to avoid aggregate segregation; or
- ☐ Impermeable liner, when required, meets project specifications and is placed in accordance with manufacturers specifications.
- ☐ Sides of excavation covered with geotextile, when required, prior to placing stone reservoir aggregate; no tears or holes, or excessive wrinkles are present.
- ☐ Placement of underdrain, observation wells, and underdrain fittings (45 degree wyes, cap at the upstream end, etc.) are in accordance with the approved plans.
- ☐ Elevations of underdrain and outlet structure are in accordance with approved plans, or as adjusted to meet field conditions.
- ☐ Placement of remaining lift of stone reservoir layer as needed to achieve the required reservoir depth.
- ☐ **Certification of Filter Layer and Underdrain Placement Inspection:** Inspector certifies the successful completion of the filter layer and underdrain placement steps listed above.

Dry Swale Soil Media Placement

- ☐ Soil media is certified by supplier or contractor as meeting the project specifications.
- ☐ Soil media is placed in 12-inch lifts to the design top elevation of the dry swale. Elevation has been verified after settlement (2 to 4 days after initial placement).
- ☐ Side slopes of ponding or flow area are feathered back at the required slope (no steeper than 3H:1V).
- ☐ Dry swale length, bottom width, side slopes, and longitudinal slope are in accordance with the approved plans.
- ☐ **Certification of Soil Media Placement Inspection:** Inspector certifies the successful completion of the soil media steps listed above.

Pretreatment and Check Dam Installation

- ☐ Placement of energy dissipators and pretreatment practices (forebays, gravel diaphragms, etc.) are installed in accordance with the approved plans.
- ☐ Riser, overflow weir, or other outflow structure is set to the proper elevation and functional; or.
- ☐ External bypass structure is built in accordance with the approved plans.
- ☐ Appropriate number and spacing of check dams are installed in accordance with the approved plans (verification of energy dissipators at downstream toe, depth keyed into dry swale flow line, and tied back into dry swale side slopes).
- ☐ Apply erosion control matting as required by approved plans or as needed to ensure adequate stabilization.
- ☐ All external erosion and sediment control practices have been removed.
- ☐ Follow-up inspection and as-built survey/certification has been scheduled.
- ☐ GPS coordinates have been documented for all dry swale installations on the parcel.

DEQ Sample Construction Inspection Checklist: Wet Pond

The following checklist provides a basic outline of the anticipated items for the construction inspection of a wet pond. Inspectors should review the plans carefully, and adjust these items and the timing of inspection verification as needed to ensure the intent of the design and the inspection is met. Finally, users of this information may wish to incorporate these items into a VSMP Authority Construction Checklist format consistent with the format used for erosion and sediment control and BMP construction inspections.

Pre-Construction Meeting

☐ Pre-construction meeting with the contractor designated to install the wet pond has been conducted.

☐ Identify the tentative schedule for construction and verify the requirements and schedule for interim inspections and sign-off.

☐ Subsurface investigation and soils report supports the placement of a wet pond in the proposed location.

☐ Impervious cover has been constructed/installed and area is free of construction equipment, vehicles, material storage, etc.

☐ All pervious areas of the contributing drainage areas have been adequately stabilized with a thick layer of vegetation and erosion control measures have been removed.

☐ **Certification of Stabilization Inspection:** Inspector certifies that the drainage areas are adequately stabilized in order to convert the sediment pond or trap (if used for sediment control) into a permanent wet pond.

Construction of Wet Pond Embankment and Principal Spillway

☐ Stormwater has been diverted around or through the area of the wet pond embankment to a stabilized conveyance; and perimeter erosion control measures to protect the facility during construction have been installed.

☐ Materials for construction of the embankment and principal spillway are available and meet the specifications of the approved plans.

☐ Construction of key trench, principal spillway, including the riser and barrel, anti-seepage controls, outlet protection, etc., is built in accordance with approved plans.

☐ Geotechnical analysis and approval of the core (if required) and embankment material has been provided, and the material has been placed in lifts and compacted in accordance with the approved plans.

☐ **Certification of Embankment and Principal Spillway Inspection:** Inspector certifies that each element of the embankment and principal spillway has been constructed in accordance with the approved plans.

Excavation of Wet Pond

- ☐ Excavation of the wet pond geometry (including bottom width, side slopes, check dams, weir overflow and outlet protection, etc) achieves the elevations in accordance with approved plans.
- ☐ Excavation of internal micro-topographic features: deep pool, forebays, etc., is in accordance with approved plans.
- ☐ Impermeable liner, when required, meets project specifications and is placed in accordance with manufacturers specifications.
- ☐ **Certification of Excavation Inspection:** Inspector certifies that the excavation has achieved all the appropriate grades, grade transitions, and wet pond geometry as shown on the approved plans.

Landscaping Plan and Stabilization

- ☐ Exposed soils on pond side slopes above permanent pool elevation are stabilized with specified seed mixtures, stabilization matting, mulch, etc., in accordance with approved plans.
- ☐ Appropriate number and spacing of plants are installed and protected on the aquatic bench and pond buffer in accordance with the approved plans.
- ☐ All erosion and sediment control practices have been removed.
- ☐ Follow-up inspection and as-built survey/certification has been scheduled.
- ☐ GPS coordinates have been documented for the wet pond installation.

Sample Construction Inspection Checklist: Filtering Practices

The following checklist provides a basic outline of the anticipated items for the construction inspection of filtering practices. The users of this information may wish to incorporate these items into a VSMP Authority Construction Checklist format consistent with the format used for erosion and sediment control and BMP construction inspections.

☐ **Certification of Pre-Construction Meeting:** Pre-construction meeting with the contractor designated to install the filtering practice has been conducted.

☐ Subsurface investigation and soils report supports the placement of a surface or an underground filtering practice in the proposed location.

☐ Impervious cover has been constructed/installed and area is free of construction equipment, vehicles, material storage), etc.

☐ All pervious areas of the contributing drainage areas have been adequately stabilized with a thick layer of vegetation and erosion control measures have been removed.

☐ Stormwater has been diverted around the area of the filtering practice and perimeter erosion control measures to protect the facility during construction have been installed.

Surface Filter

☐ Excavation of the filtering practice has achieved proper grades and the required geometry for the filter media placement.

☐ No groundwater seepage or standing water is present. Any standing water is dewatered to an acceptable dewatering device.

☐ Installation of the impermeable liner (if required). Liner meets project specifications and is placed in accordance with manufacturers specifications.

☐ All aggregates, including the reservoir layer around the underdrain, the choker stone layer, and the filter media (sand) conform to specifications as certified by quarry.

☐ Underdrain size and perforations meet the specifications.

☐ Placement of the underdrain, observation wells, and underdrain fittings (45 degree wyes, cap at upstream end, etc.) are in accordance with the approved plans.

☐ **Certification of Excavation and Placement of Liner and Underdrains**: Inspector certifies the successful completion of the previous steps for a surface filter.

☐ Placement of the stone aggregate, spread (not dumped) around the underdrain, and placement of the layer of the choker stone in accordance with the approved plans.

☐ Placement of the sand filter media in one-foot lifts.

☐ Verify proper depth of filter media

☐ Verify surface treatment (vegetation, pea gravel, etc., in accordance with the approved

plans.

Underground Structural Filter

- ☐ Excavation of the filtering practice has achieved proper grades and the required geometry for the underground structural housing – typically a vault or container made of concrete of other approved material.
- ☐ No groundwater seepage or standing water is present. Any standing water is dewatered to an acceptable dewatering device.
- ☐ Installation of fabric (if needed) and gravel bedding.
- ☐ Placement of the structural housing and verification of internal and external plumbing invert elevations.
- ☐ **Certification of Water-Tightness Test Inspection**: Inspector certifies the successful completion of the water-tightness test completed and signed off by contractor or vault supplier.
- ☐ Installation of perforated pipes and other piping as required, and filter media to the required depth.
- ☐ Connection of inlet and outlet pipes to the site drainage system.

All Filters

- ☐ **Certification of Opening of Stormwater Inflow to the Filter Inspection**: Inspector certifies that the contributing drainage areas are stabilized and erosion and sediment control practices have been removed.
- ☐ Follow-up inspection and as-built survey/certification has been scheduled.
- ☐ GPS coordinates have been documented for all filtering practices on the parcel.

DEQ Sample Construction Inspection Checklist: Constructed Wetlands

The following checklist provides a basic outline of the anticipated items for the construction inspection of Constructed wetlands. Inspectors should review the plans carefully, and adjust these items and the timing of inspection verification as needed to ensure the intent of the design and the inspection is met. Finally, users of this information may wish to incorporate these items into a VSMP Authority Construction Checklist format consistent with the format used for erosion and sediment control and BMP construction inspections.

Pre-Construction Meeting

☐ Pre-construction meeting with the contractor designated to install the constructed wetlands practice has been conducted.

☐ Identify the tentative schedule for construction and verify the requirements and schedule for interim inspections and sign-off.

☐ Subsurface investigation and soils report supports the placement of a constructed wetland practice in the proposed location.

☐ Impervious cover has been constructed/installed and area is free of construction equipment, vehicles, material storage, etc.

☐ All pervious areas of the contributing drainage areas have been adequately stabilized with a thick layer of vegetation and erosion control measures have been removed.

☐ **Certification of Stabilization Inspection:** Inspector certifies that the drainage areas are adequately stabilized in order to convert the sediment basin/trap (if the area has been used for sediment control) and construct the wetland.

Excavation of Constructed Wetland Cells

☐ Stormwater has been diverted around the area of the constructed wetland to a stabilized conveyance and perimeter erosion control measures to protect the facility during construction have been installed.

☐ Materials (wetland soils and plants, erosion control materials such as stone, soil stabilization matting, etc.) are available.

☐ Construction of the embankment (including core trench, riser and barrel or weir overflow, emergency spillway overflow, outlet protection, etc) in accordance with approved plans.

☐ Excavation of internal micro-topographic features: depth zones, aquatic bench, berms with overflow weirs, etc., in accordance with approved plans.

☐ Installation of pretreatment, including forebays, gravel diaphragms, energy dissipators, etc., is in accordance with the approved plans.

☐ Impermeable liner, when required, meets project specifications and is placed in accordance with manufacturers specifications.

- ☐ Placement of wetland soils and amendments in accordance with approved plans.
- ☐ **Certification of Excavation Inspection:** Inspector certifies that the excavation has achieved all the appropriate grades and grade transitions as shown on the approved plans.

Wetland Plantings and Stabilization

- ☐ Exposed soils on side slopes, internal berms, and embankments are stabilized with seed mixtures, stabilization matting, mulch, etc., in accordance with approved plans.
- ☐ External bypass structure is built in accordance with the approved plans.
- ☐ Appropriate number and spacing of plants are installed and protected in accordance with the approved plans.
- ☐ All erosion and sediment control practices have been removed.
- ☐ Follow-up inspection and as-built survey/certification has been scheduled.
- ☐ GPS coordinates have been documented for the constructed wetland installation.

DEQ Sample Construction Inspection Checklist: Wet Swale

The following checklist provides a basic outline of the anticipated items for the construction inspection of Wet Swales. Many inspection elements will mirror those of constructed wetlands. Inspectors should review the plans carefully, and adjust these items and the timing of inspection verification as needed to ensure the intent of the design and the inspection is met. Finally, users of this information may wish to incorporate these items into a VSMP Authority Construction Checklist format consistent with the format used for erosion and sediment control and BMP construction inspections.

Pre-Construction Meeting

☐ Pre-construction meeting with the contractor designated to install the wet swale practice has been conducted.

☐ Identify the tentative schedule for construction and verify the requirements and schedule for interim inspections and sign-off.

☐ Subsurface investigation and soils report supports the placement of a wet swale practice in the proposed location.

☐ Impervious cover has been constructed/installed and area is free of construction equipment, vehicles, material storage, etc.

☐ All pervious areas of the contributing drainage areas have been adequately stabilized with a thick layer of vegetation and erosion control measures have been removed.

☐ **Certification of Stabilization Inspection:** Inspector certifies that the drainage areas are adequately stabilized in order to convert the drainage conveyance feature (if used for sediment control or diversion) into a wet swale.

Excavation of Wet Swale

☐ Stormwater has been diverted around the area of the wet swale to a stabilized conveyance and perimeter erosion control measures to protect the facility during construction have been installed.

☐ Materials (wetland soils and plants, erosion control materials such as stone, soil stabilization matting, etc.) are available.

☐ Construction of the wet swale geometry (including bottom width, side slopes, check dams, weir overflow and outlet protection, etc) in accordance with approved plans.

☐ Excavation of internal micro-topographic features: earthen check dams, tree check dams, forebays, etc., in accordance with approved plans.

☐ Installation of pretreatment, including forebays, gravel diaphragms, energy dissipators, etc., is in accordance with the approved plans.

- ☐ Impermeable liner, when required, meets project specifications and is placed in accordance with manufacturers specifications.
- ☐ Placement of wetland soils and amendments in accordance with approved plans.
- ☐ **Certification of Excavation Inspection:** Inspector certifies that the excavation has achieved all the appropriate grades, grade transitions, and wet swale geometry as shown on the approved plans.

Wetland Plantings and Stabilization

- ☐ Exposed soils on swale bottom and side slopes are stabilized with seed mixtures, stabilization matting, mulch, etc., in accordance with approved plans.
- ☐ External bypass structure is built in accordance with the approved plans.
- ☐ Appropriate number and spacing of plants are installed and protected in accordance with the approved plans.
- ☐ All erosion and sediment control practices have been removed.
- ☐ Follow-up inspection and as-built survey/certification has been scheduled.
- ☐ GPS coordinates have been documented for all wet swale installations on the parcel.

DEQ Sample Construction Inspection Checklist: Extended Detention Pond

The following checklist provides a basic outline of the anticipated items for the construction inspection of an ED pond. Inspectors should review the plans carefully, and adjust these items and the timing of inspection verification as needed to ensure the intent of the design and the inspection is met. Finally, users of this information may wish to incorporate these items into a VSMP Authority Construction Checklist format consistent with the format used for erosion and sediment control and BMP construction inspections.

Pre-Construction Meeting

☐ Pre-construction meeting with the contractor designated to install the ED pond has been conducted.

☐ Identify the tentative schedule for construction and verify the requirements and schedule for interim inspections and sign-off.

☐ Subsurface investigation and soils report supports the placement of an ED pond in the proposed location.

☐ Impervious cover has been constructed/installed and area is free of construction equipment, vehicles, material storage, etc.

☐ All pervious areas of the contributing drainage areas have been adequately stabilized with a thick layer of vegetation and erosion control measures have been removed.

☐ **Certification of Stabilization Inspection:** Inspector certifies that the drainage areas are adequately stabilized in order to convert the sediment pond or trap (if used for sediment control) into a permanent ED pond.

Construction of ED Pond Embankment and Principal Spillway

☐ Stormwater has been diverted around or through the area of the ED pond embankment to a stabilized conveyance; and perimeter erosion control measures to protect the facility during construction have been installed.

☐ Materials for construction of the embankment and principal spillway are available and meet the specifications of the approved plans.

☐ Construction of key trench, principal spillway, including the riser and barrel, anti-seepage controls, outlet protection, etc., is built in accordance with approved plans.

☐ Geotechnical analysis and approval of the core (if required) and embankment material has been provided, and the material has been placed in lifts and compacted in accordance with the approved plans.

☐ **Certification of Embankment and Principal Spillway Inspection:** Inspector certifies that each element of the embankment and principal spillway has been constructed in accordance with the approved plans.

Excavation of ED Pond

☐ Excavation of the ED pond geometry (including bottom shape and length:width ratio, side slopes, etc) achieves the elevations in accordance with approved plans.

☐ Excavation of internal micro-topographic features: micro-pool outlet, forebays, etc., is in accordance with approved plans.

☐ Impermeable liner, when required, meets project specifications and is placed in accordance with manufacturers specifications.

☐ **Certification of Excavation Inspection:** Inspector certifies that the excavation has achieved all the appropriate grades, grade transitions, and ED pond geometry as shown on the approved plans.

Landscaping Plan and Stabilization

☐ Exposed soils on pond bottom, side slopes, and buffer areas are stabilized with specified seed mixtures, stabilization matting, mulch, etc., in accordance with approved plans.

☐ Appropriate number and spacing of plants are installed and protected on the aquatic bench and pond buffer in accordance with the approved plans.

☐ All erosion and sediment control practices have been removed.

☐ Follow-up inspection and as-built survey/certification has been scheduled.

☐ GPS coordinates have been documented for the ED pond installation.

Stormwater Conveyance and Stormwater Management/BMP Facilities, Record Drawing and Construction Certification Forms

(Note: In accordance with the requirements of the Article II of the County's Erosion and Sediment Control and Virginia Stormwater Management Program, Chapter 8 of the County Code, plans of development generally require that at the completion of the project and prior to release of surety, certified as-builts and construction certifications by a registered Professional Engineer must be provided for the drainage system for the project, including any Best Management Practice (BMP) facilities. In addition, for BMP facilities involving the construction of an impounding structure or dam embankment, certification is required by a Professional Engineer who has inspected the structure during its construction.)

Section 1 - Site Information:

Project Name: _____
Structure/BMP Name: _____
Project Location: _____
BMP Location: _____
County Plan No.: _____

Project Type: ❒ Residential ❒ Business
❒ Commercial ❒ Office
❒ Institutional ❒ Industrial
❒ Public ❒ Roadway
❒ Other _____

Tax Map/Parcel No.: _____
BMP ID Code (if known): _____
Zoning District: _____
Land Use: _____
Site Area (sf or acres): _____

Brief Description of Stormwater Management/BMP Facility: _____
_____
_____
_____
_____
_____

Nearest Visible Landmark to SWM/BMP Facility: _____

Nearest Vertical Ground Control (if known):

❒ JCC Geodetic Ground Control ❒ USGS ❒ Temporary ❒ Arbitrary ❒ Other

Station Number or Name: _____
Datum or Reference Elevation: _____
Control Description: _____
Control Location from Subject Facility: _____
_____
_____

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Section 2 - Stormwater Management/BMP Facility Construction Information:

Pre-Construction Meeting Held for Construction of SWM/BMP Facility: ❒ Yes ❒ No ❒ Unknown
Approx. Construction Start Date for SWM/BMP Facility: _____
Facility Monitored by County Representative during Construction: ❒ Yes ❒ No ❒ Unknown
Name of Site Work Contractor Who Constructed Facility: _____
Name of Professional Firm Who Routinely Monitored Construction: _____
Date of Completion for SWM/BMP Facility: _____
Date of Record Drawing/Construction Certification Submittal: _____

(Note: Record Drawing and Construction Certifications are required within thirty (30) days of the completion of Stormwater Management and/or BMP facility construction. Record Drawings and Construction Certifications must be reviewed and approved by the VESCP/VSMP authority prior to final inspection, acceptance and bond or surety release.)

Section 3 - Owner/Designer/Contractor Information:

Owner/Developer: *(Note: Site Owner or Applicant responsible for development of the project.)*

Name: _____
Mailing Address: _____
_____
Business Phone: _____ Fax: _____
Contact Person: _____ Title: _____

Design Professional: *(Note: Professional Engineer or Certified Land Surveyor responsible for the design and preparation of plans and specifications for the Stormwater Management / BMP facility.)*

Firm Name: _____
Mailing Address: _____
_____
Business Phone: _____
Fax: _____
Responsible Plan Preparer: _____
Title: _____
Plan Name: _____
Firm's Project No. _____
Plan Date: _____
Sheet No.'s Applicable to SWM/BMP Facility: _____ / _____ / _____ / _____ / _____

BMP Contractor: *(Note: Site Work Contractor directly responsible for construction of the Stormwater Management/BMP facility.)*

Firm Name: _____
Mailing Address: _____
_____
Business Phone: _____

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Fax: _____
Contact Person: _____
Site Foreman/Supervisor: _____
Specialty Subcontractors and Purpose (for BMP Construction Only): _____
_____
_____
_____
_____

Section 4 - Professional Certifications:

Certifying Professionals: *(Note: A Registered Professional Engineer or Certified Land Surveyor is responsible for preparation of a Record Drawing, sometimes referred to as an As-Built plan, for the drainage system for the project including any Stormwater Management/BMP Facilities. A Registered Professional Engineer is responsible for the inspection, monitoring and certification of Stormwater Management / BMP facilities during its construction.)*

Record Drawing and Construction Certifications for Stormwater Management/BMP Facilities

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Record Drawing Certification

Firm Name:_____

Mailing Address:_____

_____

Business Phone:_____

Fax:_____

Name:_____

Title:_____

Signature:_____

Date:_____

I hereby certify to the best of my knowledge and belief that this record drawing represents the actual condition of the

□ Stormwater conveyance system
□ Stormwater Management/BMP facility

The facility appears to conform to the provisions of the approved design plan, specifications design, and stormwater management plan, except as specifically noted.

_____(Seal)

Virginia Registered Professional Engineer or Certified Land Surveyor

Construction Certification

Firm Name:_____

Mailing Address:_____

_____

Business Phone:_____

Fax:_____

Name:_____

Title:_____

Signature:_____

Date:_____

I hereby certify to the best of my knowledge and belief that this

□ Stormwater conveyance system
□ Stormwater Management/BMP facility

was monitored and constructed in accordance with the provisions of the approved plan, specifications, and stormwater management plan, except as specifically noted.

_____(Seal)

Virginia Registered Professional Engineer

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Section 5 - Record Drawing and Construction Certification Requirements and Instructions:

- ❒ Pre-Construction Meeting - Provides an opportunity to review SWM/BMP facility construction, maintenance and operation plans and addresses any questions regarding construction and/or monitoring of the structure. The design engineer, certifying professionals (if different), Owner/Applicant, Contractor and County representative(s) are encouraged to attend the preconstruction meeting. Advanced notice to the Engineering and Resource Protection Division is requested. Usually, this requirement can be met simultaneously with Erosion and Sediment Control preconstruction meetings held for the project.

- ❒ The Record Drawing shall be prepared by a Registered Professional Engineer or Certified Land Surveyor for the drainage system of the project including any Best Management Practices.

- ❒ Construction Certification - Construction of Stormwater Management / BMP facilities which contain impoundments, embankments and related engineered appurtenances including subgrade preparation, compacted soils, structural fills, liners, geosynthetics, filters, seepage controls, cutoffs, toe drains, hydraulic flow control structures, etc. shall be visually observed and monitored by a Registered Professional Engineer or his/her authorized representative. The Engineer must certify that the structure, embankment and associated appurtenances were built in accordance with the approved design plan, specifications and stormwater management plan and standard accepted construction practice and shall submit a written certification and/or drawings to the VESCP/VSMP authority as required. Soil and compaction test reports, concrete test reports, inspection reports, logs and other required construction material or installation documentation may be required by the VESCP/VSMP authority to substantiate the certification, if specifically requested. The Engineer shall have the authority and responsibility to make minor changes to the approved plan, in coordination with the assigned County inspector, in order to compensate for unsafe or unusual conditions encountered during construction such as those related to bedrock, soils, groundwater, topography, etc. as long as changes do not adversely affect the integrity of the structure(s). Major changes to the approved design plan or structure must be reviewed and approved by the original design professional and the VESCP/VSMP authority.

- ❒ Record Drawing and Construction Certifications are required within **thirty (30) days** of the completion of Stormwater Management / BMP facility construction. Submittals must be reviewed and accepted by James City County Engineering and Resource Protection Division prior to final inspection, acceptance and bond/surety release.

  Dual Purpose Facilities - Completion of construction also includes an interim stage for Stormwater Management / BMP facilities which serve dual purpose as temporary sediment basins during construction and as permanent stormwater management / BMP facilities following construction, once development and stabilization are substantially complete. For these dual purpose facilities, construction certification is required once the temporary sediment basin phase of construction is complete. Final record drawing and construction certification of additional permanent components is required once permanent facility construction is complete.

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Interim Construction Certification is required for those dual purpose embankment-type facilities that are generally ten (10) feet or greater in dam height (*) and may not be converted, modified or begin function as a permanent SWM / BMP structure for a period generally ranging from six (6) to eighteen (18) months or more from issuance of a Land Disturbance permit for construction.

Interim or final record drawing and construction certifications are not required for temporary sediment basins which are designed and constructed in accordance with current minimum standards and specifications for temporary sediment basins per the Virginia Erosion and Sediment Control Handbook (VESCH); have a temporary service life of less than eighteen (18) months; and will be removed completely once associated disturbed areas are stabilized, unless a distinct hazard to the public's health, safety and welfare is determined by the Engineering and Resource Protection Division due to the size or presence of the structure or due to evidence of improper construction.

(*Note: Dam Height as referenced above is generally defined as the vertical distance from the natural bed of the stream or waterway at the downstream toe of the embankment to the top of the embankment structure in accordance with 4VAC50-20-30, Virginia Impoundment Structure Regulations and the Virginia Dam Safety Program.)

❒ In accordance with Sections 8-25 and 8-27 of the Chapter 8, Erosion and Sediment Control and Virginia Stormwater Management Program, of the County Code an internal closed-circuit television (CCTV) post installation inspection, performed by the operator, is required as part of the asbuilt and construction certification process. CCTV inspections shall follow standards and specifications developed by the VSMP authority administrator.

❒ Record Drawings shall provide, at a minimum, all information as shown within these requirements and the attached **RECORD DRAWING CHECKLIST** specific to the type of SWM/BMP facility being constructed. Other additional record data may be formally requested by the VESCP/VSMP authority. *(Note: Refer to the current edition of the Virginia Stormwater Management Handbook.)*

❒ Record Drawings shall consist of blue/black line prints and a reproducible (mylar, sepia, diazo, etc.) set of the approved stormwater management plan including applicable plan views, profiles, sections, details, maintenance plans, etc. as related to the subject SWM / BMP facility. The set shall indicate **"RECORD DRAWING "** in large text in the lower right hand corner of each sheet with record elevations, dimensions and data drawn in a clearly annotated format and/or boxed beside design values. Approved design plan values, dimensions and data shall not be removed or erased. Drawing sheet revision blocks shall be modified as required to indicate record drawing status. Elevations to the nearest 0.1' are sufficiently accurate except where higher accuracy is needed to show positive drainage. Certification statements as shown in Section 4 of the Record Drawing and Construction Certification Form, ***or similar forms thereof***, and professional signatures and seals, with dates matching that of the record drawing status in the revision or title block, are also required on all associated record drawing plans, prints or reproducibles.

❒ Submission Requirements - Initial and subsequent submissions for review shall consist of a minimum of one (1) blue/black line set for record drawings and one copy of the construction certification documents with appropriate transmittal. Under certain circumstances, it is understood that the record drawing and construction certification submissions may be performed by different professional firms. Therefore, record drawing submission may be in advance of construction certification or vice versa.

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Upon approval and prior to release of bond/surety, final submission shall include one (1) reproducible set of the record rawings, one (1) blue/black line set of the record drawings and one (1) copy of the construction certification. Also for current and/or future incorporation into the County BMP database and GIS system, it is requested that the record drawings also be submitted to the VESCP/VSMP authority on a diskette or CD-ROM in an acceptable electronic file format such as *.dxf, *.dwg, etc. or in a standard scanned and readable format. The electronic file requirement can be discussed and coordinated with Engineering and Resource Protection Division staff at the time of final submission.

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Special Stormwater Criteria (SSC) in James City County, Virginia

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Adopted: December 14, 2004
Revised: July 1, 2014

Special Stormwater Criteria (SSC) in James City County, Virginia

Introduction:

Special Stormwater Criteria (SSC) was developed as a result of goals and priorities as established by approved watershed management plans in James City County and following a year long process involving a multi-disciplined stormwater task group. The criteria was approved by resolution of the Board of Supervisors by resolution date December 14, 2004 and revised administratively by the VESCP/VSMP authority due to local adoption of the Virginia Stormwater Management Program. Objectives of *Special Stormwater Criteria (SSC)* include:

- Protection of specific stream reaches from accelerated channel erosion;
- Protection of conservation areas from the impacts of stormwater runoff;
- Protection of high quality wetlands from the effects of altered water level fluctuation;
- Developing more effective criteria and locations for stormwater practices in watersheds for new development;
- Retrofitting of existing facilities and uncontrolled areas of the watershed to improve water quality.

Special Stormwater Criteria (SSC) was developed to achieve two primary goals. The first is to preserve pre-development hydrology to reduce impacts to high quality streams. The volume of recharge that occurs on a site depends on slope, soil type, vegetative cover, precipitation and evapo-transpiration. Sites with natural ground cover, such as forests and meadows, have higher recharge rates, less runoff and greater transpiration losses under most conditions. This helps to preserve existing water table elevations thereby maintaining the hydrology of streams and wetlands during dry weather. Because development reduces natural cover and increases impervious surfaces, a net decrease in recharge rates is inevitable.

The second primary goal of *Special Stormwater Criteria (SSC)* is to provide enhanced water quality treatment of stormwater runoff. Current (traditional) stormwater management for water quality in watersheds is characterized by the use of a single structural BMP practice, namely a wet or dry pond, to manage stormwater from a contributing drainage area. However, many of these practices have not been properly maintained, reducing their pollutant removal capability. In addition, although the County's codes and ordinances allow for reduced impervious cover and open space preservation in site design, it does not appear that developers consistently exercise those options. More sensitive site design can play a significant role in reducing water quality and hydrologic impacts resulting from development.

In general, *Special Stormwater Criteria (SSC)* are considered to be one step above and beyond traditional Virginia and County stormwater management criteria, focusing more on the aspects of site design and source control - as opposed to traditional stormwater treatment at the end of stormwater drainage collection and conveyance systems. Use of *Special Stormwater Criteria (SSC)* on a proposed development site does <u>not</u> remove the need to provide traditional stormwater quality treatment and quality control in accordance with current County Chesapeake Bay Preservation, Erosion and Sediment Control, and Virginia Stormwater Management Program ordinances, the Virginia stormwater management BMP clearinghouse, and the Virginia Erosion and Sediment Control and Stormwater Management Handbooks. The use of additional measures in the drainage basin beyond traditional methods may, however, subsequently affect post-development site hydrology and reduce the peak rate and volume of runoff, thereby perhaps reducing the size or storage volume requirements of traditional end-of-pipe detention or retention facilities.

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When is Special Stormwater Criteria (SSC) Applied?

Special Stormwater Criteria (SSC) are applied to plans of development under the following two (2) situations.

SSC Type 1 **Watershed Management Plans.** Special Stormwater Critieria designation is placed on a development project, in whole or part, due to the site being situated in a defined S*pecial Stormwater Criteria (SSC)* area consistent with an approved watershed management plan in James City County. Approved watershed management plan means the plan has been approved by the Board of Supervisors. Examples include the Powhatan Creek and Yarmouth Creek watershed management plans. The term watershed management plans also includes any associated subwatershed or catchment maps and/or specific subwatershed or catchment strategies in narrative portions of the plan or special studies.

SSC Type 2 **Variance Process.** Special stormwater criteria designation is placed on a development project, in whole or part, as part of a mitigation or compensatory condition placed on the project as a result of the granting of a waiver or exception to the County's Chesapeake Bay Preservation or Erosion and Sediment Control ordinances. For example, Special Stormwater Criteria (SSC) designation may be applied to a development site, in whole or part, as a result of an administrative or Chesapeake Bay Board approval to impact Resource Protection Area (RPA) or as a result of administrative approval to impact steep slopes or to vary from established minimum standards & specifications as outlined in the Virginia Erosion and Sediment Control Handbook and/or the Virginia Stormwater Management Handbook.

Special Stormwater Criteria (SSC) may apply to the site, in whole or part, depending on the location of the site under the Type 1 criteria or as identified by the plan-approving authority under Type 2 criteria. Specific design and construction plan information and details for *Special Stormwater Criteria (SSC)* must be presented for review during submission of the plan of development for the project. For rezoning, special use permit and concept or master plan purposes, detailed design is not necessary. For these instances, the applicant needs only to identify if it is believed that *Special Stormwater Criteria (SSC)* will apply to the site in whole or part.

How is Special Stormwater Criteria (SSC) Applied?

Step 1 – Watershed Management Plan (Type 1) Determination:

Utilize developed project site mapping in conjunction with available County mapping to identify if the proposed development site is situated in whole or part in a defined *Special Stormwater Criteria (SSC)* area in accordance with any County approved watershed management plans. If no, proceed to Step 2. If yes, proceed to Step 3.

Step 2 - Variance (Type 2) Determination:

Determine if a waiver or exception is required to the County's Chesapeake Bay Preservation or Erosion and Sediment Control ordinances or if a variance is required to the VESCH or VSMH for the project and if the possibility exists for *Special Stormwater Criteria (SSC)* to be applied to the site, in whole or part, by the plan-approving authority as a condition, mitigation or compensation measure for those requests. If yes, proceed to Step 3. If no, *Special Stormwater Criteria (SSC)* does not apply to the proposed development site.

Step 3 - Soils Inventory:

At this point, the user has the option to proceed directly to Step 6, if desired. However, as one of the primary goals of *Special Stormwater Criteria (SSC)* is to save existing Hydrologic Soil Group A & B soils on the site to the greatest extent possible and as all plan of development projects require an environmental inventory and soils map to meet Chesapeake Bay Preservation and erosion and sediment control plan requirements, it is encouraged that this step not be bypassed but included in the *Special Stormwater Criteria (SSC)* process.

Using the Environmental Inventory and soils map as compiled for the project, identify Hydrologic Soil Group (HSG) soil mapping units contained within the anticipated limits of work for the project. The limits of work is defined as the ultimate limit of impact for the project due to clearing, land-disturbing and site development activities including offsite utility connections and installation of temporary erosion and sediment control measures. Hydrologic soil mapping units shall be based on the latest edition of the ***Soil Survey of James City and York Counties and the City of Williamsburg*** as published by the United States Department of Agriculture, Soil Conservation Service. Hydrologic soil group A and B soils are defined as soils having high infiltration rates even when thoroughly wetted (low runoff potential) and soils having moderate infiltration rates when thoroughly wetted, respectively. After the Hydrologic Soil Group inventory is completed, proceed to Step 4.

Step 4 - HSG A&B Soil Group Determination:

If there is a substantial amount of defined Hydrologic Soil Group (HSG) A & B soil mapping units within (inclusive to) the defined limits of work for the project, proceed to Step 5. A substantial amount is regarded as at least 10,000 square feet or more or greater than about 2 percent of the total site area, whichever is greater. If there are no Hydrologic Soil Group (HSG) A & B soils, or minor amounts or isolated pockets of HSG A& B soils (generally less than about 5,000 square feet) within the defined limits of work for the project, proceed to Step 6.

Step 5 - Saving HSG A&B Soils:

If all defined Hydrologic Soil Group (HSG) A & B soils as identified in Steps 3 and 4 and within the defined limits of work are saved, then *Special Stormwater Criteria (SSC)* has been satisfied. The intent to preserve predevelopment infiltration and recharge characteristics of the site is maintained. Do not proceed any further. Saved is defined as sufficiently maintaining the natural recharge capabilities of the soil compared to predevelopment conditions and there are no direct impacts to HSG A&B soil mapping units due to clearing, land-disturbing or site development activities. If <u>any</u> Hydrologic Soil Group A & B mapping units are directly impacted in any manner whatsoever due to clearing, land-disturbing or site development activities, then proceed to Step 6.

Step 6 – Apply Special Stormwater Criteria (SSC) Measures:

Apply *Special Stormwater Criteria (SSC)* measures to the project site in accordance with the matrix shown in Table SSC-1 and the Menu of Practices shown in Table SSC-2. Measures must be fully applied to the site development project or as part of the stormwater management plan for the site in accordance with the references indicated or in accordance with other accepted principles and practices. If the references are not utilized, documented evidence of other established planning, design and construction principles and practices may be required.

No more than two (2) of the same SSCP measures can be selected to meet SSC criteria. SSC credit cannot be taken for those measures being performed to meet traditional stormwater management criteria.

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Table SSC-1: Special Stormwater Criteria Application Matrix		
Designation	***Disturbed Area***	***Measures***
Redevelopment	Any Size	1 unit measure from the SSCP Menu
New Development Projects		
SSC Class 1	2,500 square feet to 10,000 square feet	1 unit measure from the SSCP Menu
SSC Class 2	10,000 square feet to 1 acre	2 unit measures from the SSCP Menu
SSC Class 3	1 to 10 acres	3 unit measures from the SSCP Menu
SSC Class 4	10 to 50 acres	5 unit measures from the SSCP Menu
SSC Class 5	50 to 200 acres	7 unit measures from the SSCP Menu
SSC Class 6	200 acres or more	Contact VESCP/VSMP authority for Pre-Application Meeting and determination.

Disturbed Area is defined as the total area of the land-disturbing activity for the project, consistent with definitions as outlined in the County's Erosion and Sediment Control ordinance and clearing plan requirements of the County's Chesapeake Bay Preservation ordinance. Disturbed area is normally the area to be cleared and graded inclusive within the defined limits of work for the project and as easily identified in the site tabulation and land-disturbing permit application for the project.

SSCP means Special Stormwater Criteria (SSC) Practice.

Table SSC-2: Menu of Special Stormwater Criteria Practices (SSCP's)				
Type	***Unit***	***Description***	***Restrictions/Limitations***	***Reference Standards***
Saving HSG A&B Soils				
SSCP # 1	1/2 unit	Save HSG A&B Soils to the Greatest Extent Possible	½ unit for each 25% of HSG A&B soils from Steps 3 and 4 saved.	None
Limit Impervious Cover				
SSCP # 2	1 unit	Use of pervious pavers	1,000 sf minimum size, must infiltrate runoff,	7
SSCP # 3	1 unit	Shared parking	Legal shared parking agreement in place; meets Planning requirements	9
On-Site Design Principles				
SSCP # 4	1 unit	Disconnection of impervious areas	Applied site-wide, all downspout locations	1, 5, 6
SSCP # 5	1 unit	Increasing time of concentration flow paths	Applied site-wide	5
SSCP # 6	1 unit	Increase surface roughness "n"	Applied site-wide	5

On-Site Design Principles (Continued)				
SSCP # 7	1 unit	Maintain sheet flows	Applied site-wide	5
SSCP # 8	1 unit	Limit use of underground storm drain piping	Applied site-wide	2, 5
Offsite Design Practices				
SSCP # 9	2 units	Retrofit a ranked priority offsite BMP	Per approved watershed management plans	1, 2, 3, 11
SSCP # 10	3 units	Construct offsite BMP in a previously "Uncontrolled Area"	easements	1, 2, 3
SSCP # 11	T.B.N.	Improve an offsite BMP	Not per an approved WMP; not part of a traditional SWM plan; permission required; BMP size must be considered in assigning unit value.	1, 2, 3
Structural Practices				
SSCP # 12	1 unit	Bioretention basin	650 square ft. minimum size	1, 3, 4, 5, 6
SSCP # 13	1 unit	Dry swales	250 l.f. minimum	1, 3
SSCP # 14	½ unit	Sumped or bottomless inlets	Applied at structures near to BMPs	13
SSCP # 15	1 unit	Manufactured BMP systems	Ultra-urban areas, water quality, manufacturers specs., preapproval	3, 7
SSCP # 16	1 unit	Infiltration trenches/pits	Minimum Size 100 sf, minimum drainage area ¼ acre	1, 3
SSCP # 17	1 unit	Dry wells	Applied site-wide, all major downspouts	1, 3, 5
SSCP # 18	1 unit	Permanent check dams in swales (wet swales)	Applied site-wide, durable materials	1, 5
SSCP # 19	1 unit	Level spreaders	Applied site-wide, incidental outfalls	2, 5
SSCP # 20	1 unit	Enhanced outlet protection measures at pipe & channel outfalls	Applied site-wide, all major storm pipe outfalls, 12" diameter or greater	2
SSCP # 21	1 unit	Flat, large bottom width swales	Applied site-wide, applies to VESCH 3.17 stormwater conveyance channels	1, 2, 3, 5
SSCP # 22	1 unit	Alternative measures – emerging technology	Preliminary Approval Required by the Plan-Approving Authority	7
Non-Structural Practices				
SSCP # 23	1 unit	Filter/buffer strips	Applied site-wide	5
SSCP # 24	1 unit	Get an Inspection/ Maintenance Agreement for a BMP which does not have one.	Responsible parties; recorded per County process requirements	12

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Slope/Grading Practices				
SSCP # 25	1 unit	Enhanced slope stabilization practices on all graded cut-fill slopes	Applied site-wide, over 6 ft. height; 1,000 s.f. minimum; non-degradable	2, 7
SSCP # 26	1 unit	Use of flatter site grades	Applied site-wide, not into steep slope or RPA buffer	5
SSCP # 27	1 unit	Reduced fill slope heights	Applied site-wide	5
SSCP # 28	1 unit	Enhanced channel stabilization practices within stormwater conveyance channels	Applied site-wide, all major conveyance channels; non-degradable	2, 7
On-Lot Stormwater Management Practices				
SSCP # 29	1 unit	Rain barrels/cisterns	Applied site-wide, covenants	5, 7
SSCP # 30	1 unit	On-lot rain gardens	Applied site-wide, covenants	5
SSCP # 31	2 units	Green roofs	Per Building Codes	5, 10
Enhancement of Traditional Onsite BMPs				
SSCP # 32	½ unit per BMP	Increased pond buffer	15 feet minimum expansion width	1, 3, 8
SSCP # 33	½ unit	Enhanced shoreline erosion control, landscaping and stabilization	Full shoreline perimeter	1, 3
Stream Restoration				
SSCP # 34	T.B.N	Bioengineering stream bank stabilization	T.B.N	2
SSCP # 35	T.B.N.	Structural stream bank stabilization	T.B.N.	2
SSCP # 36	T.B.N.	Stream bank stabilization of ranked priority stream	T.B.N.	2, 11
Other				
SSCP # 37	T.B.N.	All recommended WMP subwatershed or catchment strategies are applied to the site	Per approved watershed management plans. If no strategies, no unit credit can be taken.	All
SSCP # 38	½ unit	BMP pollutant load reductions over minimum required for traditional SWM	T.B.N	1
SSCP # 39	½ unit	Provide asbuilt drawings for entire storm drainage system	All culverts, storm drainage pipes and stormwater conveyance channels	14

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Table Notes:

- SSC is **not** intended to be applied to single-family lots under the building permit process.
- SSC means Special Stormwater Criteria.
- SSCP means Special Stormwater Criteria (SSC) Practice.
- WMP means watershed management plan.
- No more than two (2) of the same SSCP measures can be selected to meet SSC criteria.
- SSC credit cannot be taken for those measures being performed to meet traditional stormwater management criteria.
- Applied site-wide means to apply across the site to the greatest extent possible.
- T.B.N. means to-be-negotiated on a case-by-case basis with the plan-approving authority.
- Number of Measures required from the Table SSC-1 application matrix and units, restrictions/limitations and reference standards from Table SSC-2 menu may be adjusted by plan-approving authority on a case-by-case basis.

Reference Standards:

1. Virginia BMP Clearinghouse website (VRRM) *
2. Virginia Erosion & Sediment Control Handbook
3. Virginia Stormwater Management Handbook
4. Prince George's County Maryland, Bioretention Design Manual
5. Low Impact Development Design Strategies, An Integrated Design Approach
6. Low Impact Development Hydrologic Analyses
7. Manufacturer's Recommendations
8. County Stormwater Management Program
9. Zoning ordinance
10. Applicable building codes
11. Approved County watershed management plans
12. County Land Disturbing permit application procedures
13. City of Virginia Beach or other appropriate sump inlet standards
14. James City County Engineering and Resource Protection Division, Stormwater Management/BMP Facilities, Record Drawing and Construction Certification, Standard Forms & Instructions

*the former James City County BMP manual may be used at the discretion of the VESCP/VSMP program administrator if no other references are available.

Future Considerations:

During the course of the proceedings for the Special Stormwater Criteria Task Group, many good ideas were identified for incorporation into *Special Stormwater Criteria (SSC)*; however, some were considered to be outside the stormwater management program area. Although not directly applied in the subsequent *Special Stormwater Criteria (SSC)* procedure, they were considered to be important principles to consider and apply but were generally beyond the ability for the task group to change. Many of the issues discussed were closely related to the Builders-for-the-Bay, Better Site Design Roundtable which was being held concurrently with the Special Stormwater Criteria Task Group or were regulated by other County ordinances and processes. The guiding principles, as offered below, were established by the Special Stormwater Task Group. These principles should be considered by decision makers and plan-approving authorities when reviewing changes to current policies and procedures and for the development community to consider when developing a site.

- Support of the consensus agreement to be prepared by the Builders-for-the-Bay in the Better Site Design Roundtable for James City County.

- Sustainability of original designs – ensuring proper maintenance is performed for all stormwater management facilities.

- Support of the preparation of illicit discharge ordinance and the use of stormwater pollution prevention control plans to control and reduce the risk of spills from areas which store materials that may be harmful to surface and groundwater sources.

- Consideration for establishment of a program to buy or sell stormwater credits under the traditional or *Special Stormwater Criteria (SSC)* program areas and to allow credit for stream restoration projects.

- Develop watershed basin and sub-basin models to determine nutrient export and recharge targets.

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SINGLE FAMILY RESIDENCE
COMMON PLAN of DEVELOPMENT or SALE
STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

For Construction Activities At:

Insert Project/Site Name
Insert Project/Site Location & Address
Insert City, State, Zip Code

Latitude: _ _° _ _' _ _" N (degrees, minutes, seconds)

Longitude: _ _° _ _' _ _" W (degrees, minutes, seconds)

Construction Activity Operator:

Insert Company/Organization Name
Insert Name
Insert Address
Insert City, State, Zip Code
Insert Telephone Number
Insert Email Address
Insert 24-hour Emergency Contact

SWPPP Preparation Date:

Insert Month, Day, Year

CERTIFICATION

"I certify under penalty of law that I have read and understand this document and that this document and all attachments were prepared in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Operator Name: _____

Title: _____

Signature: _____

Date: _____

1.0 SWPPP Documents Located Onsite & Available for Review

SWPPP Document Type	Located Onsite & Available for Review?	
Registration Statement	☐ Yes	☐ NA
Notice of Coverage Letter	☐ Yes	☐ NA
Construction General Permit	☐ Yes	☐ NA
Site Plan	☐ Yes	☐ NA
Erosion & Sediment Control Plan (or agreement in lieu of)	☐ Yes	☐ NA
Stormwater Management Plan (if applicable)	☐ Yes	☐ NA

2.0 Authorized Non-Stormwater Discharges

Type of Authorized Non-Stormwater Discharge	Likely Present at Your Project Site?	
External buildings wash down	☐ Yes	☐ No
Uncontaminated foundation or footing drains	☐ Yes	☐ No
Uncontaminated excavation dewatering	☐ Yes	☐ No
Landscape irrigation	☐ Yes	☐ No
Others [describe]	☐ Yes	☐ No

3.0 Pollution Prevention Awareness

Employees will be given a "walk through" of the site identifying areas of possible pollution and will be shown Erosion and Sediment Controls and Pollution Prevention Practices (identified in Sections 4.0 and 5.0 of this SWPPP) that are applicable to their assigned job duties. A refresher meeting and "walk through" will be conducted on an as needed basis.

4.0 Erosion & Sediment Controls

Select all that apply	Erosion & Sediment Control	Estimated Installation Date	Estimated Removal Date	Responsible Party
☐	Construction Entrance (Std. & Spec. 3.02)	Insert Date	Insert Date	Construction Activity Operator (See Cover Page of this SWPPP)
☐	Silt Fence (Std. & Spec. 3.05)	Insert Date	Insert Date	
☐	Culvert Inlet Protection (Std. & Spec. 3.08)	Insert Date	Insert Date	
☐	Outlet Protection (Std. & Spec. 3.18)	Insert Date	NA	
☐	Temporary Seeding (Std. & Spec. 3.31)	As required by 3.31	NA	
☐	Permanent Seeding (Std. & Spec. 3.32)	Insert Date	NA	
☐	Sodding (Std. & Spec. 3.33)	Insert Date	NA	
☐	Mulching (Std. & Spec. 3.35)	Insert Date	NA	
☐	Others [describe]	Insert Date	Insert Date	

5.0 Potential Sources of Pollution & Pollution Prevention Practices

Pollutant-Generating Activity	Likely Present at your Project Site?	Pollutants: Sediment	Nutrients	Heavy Metals	pH (acids and bases)	Pesticides & Herbicides	Oil & Grease	Bacteria & Viruses	Trash, Debris, Solids	Other Toxic Chemicals	Pollution Prevention Practice	Responsible Party
Clearing, grading, excavating, and un-stabilized areas	☐ Yes ☐ No	X							X		(1)	Construction Activity Operator (See Cover Page of this SWPPP)
Paving operations	☐ Yes ☐ No	X					X		X		(2)	
Concrete washout and cement waste	☐ Yes ☐ No			X	X				X		(3)	
Structure construction, stucco, painting, and cleaning	☐ Yes ☐ No			X	X				X	X	(4)	
Dewatering operations	☐ Yes ☐ No	X	X						X		(5)	
Material delivery and storage	☐ Yes ☐ No	X	X	X	X		X		X	X	(6)	
Material use during building process	☐ Yes ☐ No		X	X	X		X		X	X	(7)	
Solid waste disposal	☐ Yes ☐ No								X	X	(8)	
Sanitary waste	☐ Yes ☐ No		X		X			X			(9)	
Landscaping operations	☐ Yes ☐ No	X	X			X			X	X	(10)	
Others [describe]	☐ Yes ☐ No	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	(11)	

Pollution Prevention Practices:

(1) **Clearing, grading, excavating and un-stabilized areas** – Utilize erosion and sediment controls to prevent sediment laden or turbid runoff from leaving the construction site. Dispose of clearing debris at acceptable disposal sites. Apply permanent or temporary stabilization, sodding and/or mulching to denuded areas in accordance with the erosion and sediment control specifications and the general VPDES permit for discharges of stormwater from construction activities.

(2) **Paving operations** – Cover storm drain inlets during paving operations and utilize pollution prevention materials such as drip pans and absorbent/oil dry for all paving machines to limit leaks and spills of paving materials and fluids.

(3) **Concrete washout and cement waste** – Direct concrete wash water into a leak-proof container or leak-proof settling basin that is designed so that no overflows can occur due to inadequate sizing or precipitation. Hardened concrete wastes shall be removed and disposed of in a manner consistent with the handling of other construction wastes.

(4) **Structure construction, stucco, painting and cleaning** – Enclose, cover or berm building material storage areas if susceptible to contaminated stormwater runoff. Conduct painting operations consistent with local air quality and OSHA regulations. Mix paint indoors, in a containment area or in a flat unpaved area. Prevent the discharge of soaps, solvents, detergents and wash water from construction materials, including the clean-up of stucco paint, form release oils and curing compounds.

(5) **Dewatering operations** – Construction site dewatering from building footings or other sources may not be discharged without treatment. Sediment laden or turbid water shall be filtered, settled or similarly treated prior to discharge.

(6) **Material delivery and storage** – Designate areas of the construction site for material delivery and storage. Place near construction entrances, away from waterways, and avoid transport near drainage paths or waterways.

(7) **Material use during building process** – Use materials only where and when needed to complete the construction activity. Follow manufacturer's instructions regarding uses, protective equipment, ventilation, flammability and mixing of chemicals.

(8) **Solid waste disposal** – Designate a waste collection area on the construction site that does not receive a substantial amount of runoff from upland areas and does not drain directly to a waterway. Ensure that containers have lids so they can be covered before periods of rain, and keep containers in a covered area whenever possible. Schedule waste collection to prevent the containers from overfilling.

(9) **Sanitary waste** – Prevent the discharge of sanitary waste by providing convenient and well-maintained portable sanitary facilities. Locate sanitary facilities in a convenient location away from waterways.

(10) **Landscaping operations** – Maintain as much existing vegetation as practicable. Apply permanent or temporary stabilization, sodding and/or mulching to denuded areas in accordance with the erosion and sediment control specifications and the general VPDES permit for discharges of stormwater from construction activities. Apply nutrients in accordance with manufacturer's recommendations and not during rainfall events.

(11) **Others** – If applicable, describe your Pollution Prevention Practice.

6.0 Stormwater Management Controls

Select all that apply	Stormwater Management Control	Estimated Installation Date	Responsible Party
☐	Post-development Stormwater Management Controls provided by a Larger Common Plan of Development or Sale	NA	Common Plan Construction Activity Operator
☐	Rooftop Disconnection	Insert Date	Construction Activity Operator (See Cover Page of this SWPPP)
☐	Sheetflow to Vegetated Filter (1 or 2)	Insert Date	
☐	Grass Channel	Insert Date	
☐	Rainwater Harvesting	Insert Date	
☐	Permeable Pavement (1 or 2)	Insert Date	

Select all that apply	Stormwater Management Control	Estimated Installation Date	Responsible Party
☐	Infiltration (1 or 2)	Insert Date	Construction Activity Operator (See Cover Page of this SWPPP)
☐	Bioretention (1 or 2)	Insert Date	
☐	Others [describe]	Insert Date	

7.0 Spill Prevention & Response

Most spills can be cleaned up following manufacturer specifications. Absorbent/oil dry, sealable containers, plastic bags, and shovels/brooms are suggested minimum spill response items that should be available at this location.

1st Priority: Protect all people
2nd Priority: Protect equipment and property
3rd Priority: Protect the environment

1. Check for hazards (flammable material, noxious fumes, cause of spill) – if flammable liquid, turn off engines and nearby electrical equipment. <u>If serious hazards are present leave the area and call 911. LARGE SPILLS ARE LIKELY TO PRESENT A HAZARD.</u>
2. Make Sure the spill area is safe to enter and that it does not pose an immediate threat to health or safety of any person.
3. Stop the spill source.
4. Call co-workers and supervisor for assistance and to make them aware of the spill and potential dangers.
5. If possible, stop spill from entering drains (use absorbent or other material as necessary).
6. Stop spill from spreading (use absorbent or other material)
7. If spilled material has entered a storm sewer; contact locality's storm water department.
8. Clean up spilled material according to manufacturer specifications, for liquid spills use absorbent materials and do not flush area with water.
9. Properly dispose of cleaning materials and used absorbent material according to manufacturer specifications.

Emergency Contacts:

Normal Working Hours

DEQ Blue Ridge Regional Office (Roanoke)	540-562-6700
DEQ Blue Ridge Regional Office (Lynchburg)	434-582-5120
DEQ Northern Regional Office	703-583-3800
DEQ Piedmont Regional Office	804-527-5020
DEQ Southwest Regional Office	276-676-4800
DEQ Tidewater Regional Office	757-518-2000
DEQ Valley Regional Office	540-574-7800

Nights, Holidays & Weekends

VA Dept. of Emergency Management 24 Hour Reporting Service	804-674-2400

Local Contacts

Local Fire Department	Insert Telephone Number
Local Police Department	Insert Telephone Number

8.0 Inspections & Corrective Action Log (make additional copies as necessary)

Qualified Inspector

Company/Organization: Insert Company/Organization Name
Name: Insert Name
Telephone Number: Insert Telephone Number
Qualifications: Insert Qualifications

Inspection Schedule

Discharges to surface waters:

☐ Once every 7 days; or
☐ Once every 14 days and no later than 48 hours following any measurable storm event.

Discharges to impaired waters, surface waters within a TMDL watershed, or exceptional waters:

☐ Once every 4 days; or
☐ Once every 7 days and no later than 48 hours following any measurable storm event.

Inspection Date Insert Inspection Date

Best Management Practices (BMPs)	In Compliance with SWPPP?	Corrective Action Needed; Responsible Party	Date Corrective Action Taken
Erosion & Sediment Controls (Section 4.0)	☐ Yes ☐ No		
Pollution Prevention Practices (Section 5.0)	☐ Yes ☐ No		
Stormwater Management Controls (Section 6.0)	☐ Yes ☐ No ☐ NA		

Inspector Name: _____ Operator Name: _____

Signature: _____ Signature: _____

Date: _____ Date: _____

9.0 Grading & Stabilization Activities Log

Date Grading Activity Initiated	Description of the Grading Activity (including location)	Date Grading Activity Ceased	Date Stabilization Measures Initiated	Description of the Stabilization Measure (including location)

10.0 SWPPP Modification & Update Log

Modification Date	Description of the Modification / Update	Modification Prepared By (name & title)

DRAFT

ATTACHMENT 6: JAMES CITY COUNTY SUPPORTING PROGRAM MATERIALS

SWPPP - POLLUTION PREVENTION PLAN (PPP) Template

Instructions

To help you develop the narrative section of your construction site SWPPP, James City County as local VESCP/VSMP authority will utilize this EPA created electronic SWPPP template. The template is designed to help guide you through the SWPPP development process and help ensure that your SWPPP addresses all the necessary elements stated in your construction general permit. You should use this template with EPA's guidance on *Developing Your Stormwater Pollution Prevention Plan*. Both are available on EPA's website at www.epa.gov/npdes/swpppguide

This template covers the SWPPP elements that most state construction general permits require, however, you are strongly encouraged to customize this template. There are two major reasons to customize this template:

- **To reflect the terms and conditions of your construction general permit**
- **To reflect the conditions at your site**

Some states might have their own SWPPP template. If so, use the state-suggested format. In such cases, this document and its template might provide useful background information.

Using the SWPPP Template

Each section of this template includes "instructions" and space for "project information." You should read the instructions for each section as you complete the project information. This template was developed in Word so that you can easily add tables and additional text. Some sections may require only a brief description while others may require several pages of explanation.

Tips for completing the SWPPP template

- If there is more than one construction operator for your project, consider coordinating development of your SWPPP with the other operators.

- Multiple operators may share the same SWPPP, but make sure that responsibilities are clearly described.
- Modify this SWPPP template so that it addresses the requirements in your construction general permit and meets the needs of your project. Consider adding permit citations in the SWPPP when you address a specific permit requirement.

Stormwater Pollution Prevention Plan

For:

Insert Project Name
Insert Project Site Location/Address
Insert City, State, Zip Code
Insert Project Site Telephone Number (if applicable)

Operator(s):

Insert Company or Organization Name
Insert Name
Insert Address
Insert City, State, Zip Code
Insert Telephone Number
Insert Fax/Email

Stormwater Manager and SWPPP Contact(s):

Insert Company or Organization Name
Insert Name
Insert Address
Insert City, State, Zip Code
Insert Telephone Number
Insert Fax/Email

SWPPP Preparation Date:

Estimated Project Dates:

Start of Construction: __ __ / __ __ / __ __ __ __
Completion of Construction: __ __ / __ __ / __ __ __ __

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SECTION 1: SITE EVALUATION, ASSESSMENT, AND PLANNING

1.1 Project/Site Information

Instructions:

- In this section you can gather some basic site information that will be helpful to you later when you file for permit coverage.
- For more information, see Developing Your Stormwater Pollution Prevention Plan: A SWPPP Guide for Construction Sites (also known as the "SWPPP Guide"), Chapter 2
- Detailed information on determining your site's latitude and longitude can be found at www.epa.gov/npdes/stormwater/latlong

Project Information:

Project/Site Name: _____

Project Street/Location: _____

City: _____ State: _____ Zip Code: _____

County or Similar Subdivision: _____

Latitude/Longitude (Use **one** of three possible formats, and specify method)

Latitude:

1. _ _ º _ _ ' _ _ " N (degrees, minutes, seconds)
2. _ _ º _ _ . _ _ ' N (degrees, minutes, decimal)
3. _ _ . _ _ _ _ º N (decimal)

Longitude:

1. _ _ º _ _ ' _ _ " W (degrees, minutes, seconds)
2. _ _ º _ _ . _ _ ' W (degrees, minutes, decimal)
3. _ _ . _ _ _ _ º W (decimal)

Method for determining latitude/longitude:

☐ USGS topographic map (specify scale: _____) ☐ EPA Web site ☐ GPS

☐ Other (please specify):_____

Is the project located in Indian country? ☐ Yes ☐ No

If yes, name of Reservation, or if not part of a Reservation, indicate "not applicable." _____
_____

Is this project considered a federal facility? ☐ Yes ☐ No

NPDES project or permit tracking number:_____

(This is the unique identifying number assigned to your project by your permitting authority after you have applied for coverage under the appropriate NPDES construction general permit.)

1.2 Contact Information/Responsible Parties

Instructions:

- List the operator(s), project managers, stormwater manager, and person or organization that prepared the SWPPP. Indicate respective responsibilities, where appropriate.
- Also, list subcontractors expected to work on-site. Notify subcontractors of stormwater requirements applicable to their work.
- See SWPPP Guide, Chapter 2.B. and your construction general permit for the definition of *operator*.

Project Information:

Operator(s):
Insert Company or Organization Name
Insert Name
Insert Address
Insert City, State, Zip Code
Insert Telephone Number
Insert Fax/Email
Insert area of control (if more than one operator at site)
Repeat as necessary

Project Manager(s) or Site Supervisor(s):
Insert Name
Insert Company or Organization Name
Insert Address
Insert City, State, Zip Code
Insert Telephone Number
Insert Fax/Email
Insert area of control (if more than one operator at site)
Repeat as necessary

Stormwater Manager and SWPPP Contact(s):
Insert Name
Insert Company or Organization Name
Insert Address
Insert City, State, Zip Code
Insert Telephone Number
Insert Fax/Email (Optional)
Repeat as necessary

This SWPPP Was Prepared By:
Insert Name
Insert Company or Organization Name
Insert Address
Insert City, State, Zip Code
Insert Telephone Number
Insert Fax/Email

Subcontractor(s):
Insert Company or Organization Name
Insert Name
Insert Address
Insert City, State, Zip Code
Insert Telephone Number
Insert Fax/Email
Repeat as necessary

Emergency 24 hour contact:
Insert Name
Insert Telephone Number

1.3 Nature and Sequence of Construction Activity

Instructions:

- Briefly describe the nature of the construction activity and approximate timeframes (one or more paragraphs, depending on the nature and complexity of the project).
- See SWPPP Guide, Chapter 3.A. for more information.

Project Information:

- Describe the general scope of the work for the project, major phases of construction, etc:

INSERT TEXT HERE

What is the function of the construction activity?

☐ Residential ☐ Commercial ☐ Industrial ☐ Road Construction

☐ Linear Utility

☐ Other (please specify):_____

Estimated Project Start Date: __ __ / __ __ / __ __ __ __

Estimated Project Completion Date: __ __ / __ __ / __ __ __ __

1.4 Soils, Slopes, Vegetation, and Current Drainage Patterns

Instructions:

- Describe the existing soil conditions at the construction site including soil types, slopes and slope lengths, drainage patterns, and other topographic features that might affect erosion and sediment control.
- Also, note any historic site contamination evident from existing site features and known past usage of the site.
- This information should also be included on your site maps (See SWPPP Guide, Chapter 3.C.).
- For more information, see SWPPP Guide, Chapter 3.A. for more information.

Project Information:

Soil type(s):

- **INSERT TEXT HERE**
- **INSERT TEXT HERE**

Slopes (describe current slopes and note any changes due to grading or fill activities):

- **INSERT TEXT HERE**
- **INSERT TEXT HERE**

Drainage Patterns (describe current drainage patterns and note any changes dues to grading or fill activities):

- **INSERT TEXT HERE**
- **INSERT TEXT HERE**

Vegetation:

- **INSERT TEXT HERE**
- **INSERT TEXT HERE**

Other:

- **INSERT TEXT HERE**
- **INSERT TEXT HERE**

1.5 Construction Site Estimates

Instructions:

- Estimate the area to be disturbed by excavation, grading, or other construction activities, including dedicated off-site borrow and fill areas.
- Calculate the percentage of impervious surface area before and after construction
- Calculate the runoff coefficients before and after construction.
- For more information, see SWPPP Guide, Chapter 3.A. and Appendix C

Project Information:

The following are estimates of the construction site:

Construction Site Area to be disturbed	acres
Total Project Area	acres
Percentage impervious area before construction	%
Runoff coefficient before construction	
Percentage impervious area after construction	%
Runoff coefficient after construction	

1.6 Receiving Waters

Instructions:

- List the waterbody(s) that would receive stormwater from your site, including streams, rivers, lakes, coastal waters, and wetlands. Describe each as clearly as possible, such as *Mill Creek, a tributary to the Potomac River*, etc.
- Note any stream crossings, if applicable.
- List the storm sewer system or drainage system that stormwater from your site could discharge to and the waterbody(s) that it ultimately discharges to.
- If any of the waterbodies above are impaired and/or subject toTMDLs, please list the pollutants causing the impairment and any specific requirements in the TMDL(s) that are applicable to construction sites. Your SWPPP should specifically include measures to prevent the discharge of these pollutants.
- For more information, please see SWPPP Guide, Chapter 3.A. and 3.B.
- Also visit www.epa.gov/npdes/stormwater/tmdl for more information and a list of TMDL contacts and links by state.

1.6 Receiving Waters (continued)

Project Information:

Description of receiving waters:	INSERT TEXT HERE
Description of storm sewer systems:	INSERT TEXT HERE
Description of impaired waters or waters subject to TMDLs:	INSERT TEXT HERE

1.7 Site Features and Sensitive Areas to be Protected

Instructions:

- Describe unique site features including streams, stream buffers, wetlands, specimen trees, natural vegetation, steep slopes, or highly erodible soils that are to be preserved.
- Describe measures to protect these features.
- Include these features and areas on your site maps.
- For more information, see SWPPP Guide, Chapter 3.A. and 3.B. for more information

Project Information:

Description of unique features and measures to protect them:

- INSERT TEXT OR TABLE HERE

1.8 Potential Sources of Pollution

Instructions:

- Identify and list all potential sources of sediment from construction materials and activities which may reasonably be expected to affect the quality of stormwater discharges from the construction site.
- Identify and list all potential sources of pollution, other than sediment, from construction materials and activities which may reasonably be expected to affect the quality of stormwater discharges from the construction site.
- See SWPPP Guide, Chapter 3.A. for more information.

Project Information:

Potentials sources of sediment to stormwater runoff:

- INSERT TEXT OR TABLE HERE
- INSERT TEXT HERE

1.8 Potential Sources of Pollution (continued)

Potential pollutants and sources, other than sediment, to stormwater runoff:

- INSERT TEXT OR TABLE HERE
- INSERT TEXT HERE

1.9 Endangered Species Certification

Instructions:

- Before commencing construction, determine whether endangered or threatened species or their critical habitats are on or near your site.
- Adapt this section as needed for state or tribal endangered species requirements.
- For more information on this topic, see SWPPP Guide, Chapter 3.B.
- Additional information related to EPA's Construction General Permit can be found at www.epa.gov/npdes/stormwater/esa

Project Information:

Are endangered or threatened species and critical habitats on or near the project area?

☐ Yes ☐ No

Describe how this determination was made: INSERT TEXT HERE

If yes, describe the species and/or critical habitat: INSERT TEXT HERE

If yes, describe or refer to documentation which determines the likelihood of an impact on identified species and/or habitat and the steps taken to address that impact. (Note, if species are present on or near your project site, EPA strongly recommends that the site operator work closely with the appropriate field office of the U.S. Fish and Wildlife Service or National Marine Fisheries Service. Please contact a state or tribal official for concerns related to state or tribal listing of species.) INSERT TEXT HERE

1.10 Historic Preservation

Instructions:

- Before you begin construction, you should review federal and any applicable state, local, or tribal historic preservation laws and determine if there are historic sites on or near your project. If so, you may need to make adjustments to your construction plans or to your stormwater controls to ensure that these historic sites are not damaged.
- For more information see SWPPP Guide, Chapter 3.B or contact your state or tribal historic preservation officer.

1.10 Historic Preservation (Continued)

Project Information:

Are there any historic sites on or near the construction site?

☐ Yes ☐ No

- Describe how this determination was made: INSERT TEXT HERE
- If yes, describe or refer to documentation which determines the likelihood of an impact on this historic site and the steps taken to address that impact. INSERT TEXT HERE

1.11 Maps

Instructions:

- Attach at least two site maps. The first should show the undeveloped site and its current features. An additional map or maps should be created to show the developed site or the major phases of development, for more complicated sites.

These maps should include:

- ☐ Direction(s) of stormwater flow and approximate slopes before and after major grading activities
- ☐ Areas and timing of soil disturbance and areas that will not be disturbed
- ☐ Natural features to be preserved
- ☐ Locations of major structural and non-structural BMPs identified in the SWPPP
- ☐ Locations and timing of stabilization measures
- ☐ Locations of off-site material, waste, borrow, or equipment storage areas
- ☐ Locations of all waters of the U.S., including wetlands
- ☐ Locations where stormwater discharges to a surface water
- ☐ Locations of storm drain inlets
- ☐ Areas where final stabilization has been accomplished
- ☐ For more information, see SWPPP Guide, Chapter 3.C.

Project Information:

- Include the site maps with the SWPPP.

SECTION 2: EROSION AND SEDIMENT CONTROL BMPS

Instructions:

- Describe the BMPs that will be implemented to control pollutants in stormwater discharges. For each major activity identified:
  - ☐ Clearly describe appropriate control measures.
  - ☐ Describe the general sequence during the construction process in which the measures will be implemented.
  - ☐ Describe the maintenance and inspection procedures that will be undertaken for that specific BMP.
  - ☐ Include protocols, thresholds, and schedules for cleaning, repairing, or replacing damaged or failing BMPs.
  - ☐ Identify staff responsible for maintaining BMPs.
  - ☐ (If your SWPPP is shared by multiple operators, indicate the operator responsible for each BMP.)
- Categorize each BMP under one of the following 10 areas of BMP activity as described below:
  - ☐ *Minimize disturbed area and protect natural features and soil*
  - ☐ *Phase Construction Activity*
  - ☐ *Control Stormwater flowing onto and through the project*
  - ☐ *Stabilize Soils*
  - ☐ *Protect Slopes*
  - ☐ *Protect Storm Drain Inlets*
  - ☐ *Establish perimeter controls and sediment barriers*
  - ☐ *Retain Sediment On-Site and Control Dewatering Practices*
  - ☐ *Establish Stabilized Construction Exits*
  - ☐ *Any Additional BMPs*
- Note the location of each BMP on your site map(s).
- Any structural BMPs should have design specifications and details referred to and attached as appendices to the SWPPP.
- For more information, see SWPPP Guide, Chapter 4.
- Consult your state's design manual or one of those listed in Appendix D of the SWPPP Guide.
- For more information or ideas on BMPs see EPA's National Menu of BMPs http://www.epa.gov/npdes/stormwater/menuofbmps

Project Information:

1. Minimize Disturbed Area and Protect Natural Features and Soil:

Describe the areas that will be disturbed with each phase of construction and the methods (signs, fences, etc.) that you will use to protect those areas that should not be disturbed. Describe natural features identified earlier and how each will be protected during construction activity. Also describe how topsoil will be preserved. Include these areas and associated BMPs on your site map(s) also. (See SWPPP Guide, Chapter 4, ESC Principle 1 for more information.)

- INSERT Text or TABLE HERE, include inspection and maintenance schedules as appropriate and staff responsible for maintenance
- Phase Construction Activity:

Describe the intended construction sequencing and timing of major activities, including grading activities, road and utility installation, and building phases. (See SWPPP Guide, Chapter 4, ESC Principle 2 for more information.) It may be useful to develop a separate, detailed site map for each phase of construction.

- Phase I
  - ☐ Describe phase
  - ☐ Duration of phase (start date, end date)
  - ☐ List BMPs associated with this phase
  - ☐ List BMPs associated with this phase
  - ☐ Describe stabilization methods for this phase (describe any temporary stabilization methods that will be used before final stabilization)

  Repeat as needed

- Phase II
  - ☐ Describe phase
  - ☐ Duration of phase (start date, end date)
  - ☐ List BMPs associated with this phase
  - ☐ List BMPs associated with this phase
  - ☐ Describe stabilization methods for this phase (describe any temporary stabilization methods that will be used before final stabilization)

  Repeat as needed

2. Control Stormwater Flowing Onto and Through the Project:

Describe structural practices (i.e., diversions, berms, ditches, storage basins) including design specifications and details used to divert flows from exposed soils, retain or detain flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. (See SWPPP Guide, Chapter 4, ESC Principle 3 for more information.)

- BMP Description: INSERT TEXT HERE
- Installation Schedule: INSERT TEXT HERE
- Maintenance and Inspection: INSERT TEXT HERE
- Responsible Staff: INSERT TEXT HERE

- BMP Description: INSERT TEXT HERE
- Installation Schedule: INSERT TEXT HERE
- Maintenance and Inspection: INSERT TEXT HERE
- Responsible Staff INSERT TEXT HERE

4. Stabilize Soils:

Describe controls (i.e., temporary seeding with native vegetation, hydroseeding, etc.) to stabilize exposed soils where construction activities have temporarily or permanently ceased. Also describe measures to control dust generation. Use of impervious surfaces for stabilization should be avoided whenever possible. (See SWPPP Guide, Chapter 4, ESC Principle 4 for more information.)

- BMP Description: INSERT TEXT HERE

  ☐ Permanent ☐ Temporary
- Installation Schedule: INSERT TEXT HERE
- Maintenance and Inspection: INSERT TEXT HERE
- Responsible Staff: INSERT TEXT HERE

- BMP Description: INSERT TEXT HERE

  ☐ Permanent ☐ Temporary
- Installation Schedule: INSERT TEXT HERE
- Maintenance and Inspection: INSERT TEXT HERE
- Responsible Staff: INSERT TEXT HERE

5. Protect Slopes:

Describe controls (i.e., erosion control blankets, tackifiers, etc.) including design specifications and details that will be implemented to protect all slopes. (See SWPPP Guide, Chapter 4, ESC Principle 5 for more information.)

- BMP Description: INSERT TEXT HERE
- Installation Schedule: INSERT TEXT HERE
- Maintenance and Inspection: INSERT TEXT HERE
- Responsible Staff: INSERT TEXT HERE

- BMP Description: INSERT TEXT HERE
- Installation Schedule: INSERT TEXT HERE
- Maintenance and Inspection: INSERT TEXT HERE
- Responsible Staff: INSERT TEXT HERE

6. Protect Storm Drain Inlets:

Describe controls (i.e., inserts, rock-filled bags, or block and gravel, etc.) including design specifications and details that will be implemented to protect all inlets receiving stormwater from the project during the entire duration of the project. (See SWPPP Guide, Chapter 4, ESC Principle 6 for more information.)

- BMP Description: INSERT TEXT HERE
- Installation Schedule: INSERT TEXT HERE
- Maintenance and Inspection: INSERT TEXT HERE
- Responsible Staff: INSERT TEXT HERE

- BMP Description: INSERT TEXT HERE
- Installation Schedule: INSERT TEXT HERE
- Maintenance and Inspection: INSERT TEXT HERE
- Responsible Staff: INSERT TEXT HERE

7. Establish perimeter controls and sediment barriers:

Describe structural practices (i.e., silt fences or fiber rolls) including design specifications and details to filter and trap sediment before it leaves the construction site. (See SWPPP Guide, Chapter 4, ESC Principle 7 for more information.)

- BMP Description: INSERT TEXT HERE
- Installation Schedule: INSERT TEXT HERE
- Maintenance and Inspection: INSERT TEXT HERE
- Responsible Staff: INSERT TEXT HERE

- BMP Description: INSERT TEXT HERE
- Installation Schedule: INSERT TEXT HERE
- Maintenance and Inspection: INSERT TEXT HERE
- Responsible Staff: INSERT TEXT HERE

8. Retain Sediment On-Site and Control Dewatering Practices:

Describe sediment control practices (i.e., sediment trap or sediment basin), including design specifications and details (volume, dimensions, outlet structure) that will be implemented at the construction site to retain sediments on-site. Describe dewatering practices that will be implemented if water must be removed from an area so that construction activity can continue. (See SWPPP Guide, Chapter 4, ESC Principle 8 for more information.)

- BMP Description: INSERT TEXT HERE
- Installation Schedule: INSERT TEXT HERE
- Maintenance and Inspection: INSERT TEXT HERE
- Responsible Staff: INSERT TEXT HERE
-
- BMP Description: INSERT TEXT HERE
- Installation Schedule: INSERT TEXT HERE
- Maintenance and Inspection: INSERT TEXT HERE
- Responsible Staff: INSERT TEXT HERE

9. Establish Stabilized Construction Exits:

Describe location(s) of vehicle entrance(s) and exit(s), procedures to remove accumulated sediment off-site (i.e., vehicle tracking), and stabilization practices (i.e., stone pads and/or wash racks) to minimize off-site vehicle tracking of sediments and discharges to stormwater. (See SWPPP Guide, Chapter 4, ESC Principle 9 for more information.)

- BMP Description: INSERT TEXT HERE
- Installation Schedule: INSERT TEXT HERE
- Maintenance and Inspection: INSERT TEXT HERE
- Responsible Staff: INSERT TEXT HERE

- BMP Description: INSERT TEXT HERE
- Installation Schedule: INSERT TEXT HERE
- Maintenance and Inspection: INSERT TEXT HERE
- Responsible Staff: INSERT TEXT HERE

10. Additional BMPs:

Describe additional BMPs that may not fit into the above categories.

- BMP Description: INSERT TEXT HERE
- Installation Schedule: INSERT TEXT HERE
- Maintenance and Inspection: INSERT TEXT HERE
- Responsible Staff: INSERT TEXT HERE

- BMP Description: INSERT TEXT HERE
- Installation Schedule: INSERT TEXT HERE
- Maintenance and Inspection: INSERT TEXT HERE
- Responsible Staff: INSERT TEXT HERE

SECTION 3: GOOD HOUSEKEEPING BMPS

3.1 Good Housekeeping BMPs

Instructions:

- Describe the key good housekeeping and pollution prevention (P2) measures that will be implemented to control pollutants in stormwater.
- Categorize each good housekeeping and pollution prevention (P2) BMP under one of the following 7 categories and follow the instructions to SWPPP Guide your description:

☐ ***Material Handling and Waste Management:***
☐ ***Establish Proper Building Material Staging Areas:***
☐ ***Designate Washout Areas:***
☐ ***Establish proper equipment/vehicle fueling and maintenance practices:***
☐ ***Allowable non-stormwater discharges and control equipment/vehicle washing:***
☐ ***Spill Prevention and Control Plan:***
☐ ***Any Additional BMPs:***

- For more information, see SWPPP Guide, Chapter 5.
- Consult your state's design manual or resources in Appendix D of the SWPPP Guide.
- For more information or ideas on BMPs, see EPA's National Menu of BMPs http://www.epa.gov/npdes/stormwater/menuofbmps

Project Information:

1. Material Handling and Waste Management:

Describe measures (i.e., trash disposal, sanitary wastes, recycling, and proper material handling) to prevent the discharge of solid materials to waters of the U.S., except as authorized by a permit issued under section 404 of the CWA. (See SWPPP Guide, Chapter 5, P2 Principle 1)

- BMP Description: INSERT TEXT HERE
- Installation Schedule: INSERT TEXT HERE
- Maintenance and Inspection: INSERT TEXT HERE
- Responsible Staff: INSERT TEXT HERE

- BMP Description: INSERT TEXT HERE
- Installation Schedule: INSERT TEXT HERE
- Maintenance and Inspection: INSERT TEXT HERE
- Responsible Staff: INSERT TEXT HERE

2. Establish Proper Building Material Staging Areas:

Describe construction materials expected to be stored on-site and procedures for storage of materials to minimize exposure of the materials to stormwater. (See SWPPP Guide, Chapter 5, P2 Principle 2 for more information.)

- BMP Description: INSERT TEXT HERE
- Installation Schedule: INSERT TEXT HERE
- Maintenance and Inspection: INSERT TEXT HERE
- Responsible Staff: INSERT TEXT HERE

- BMP Description: INSERT TEXT HERE
- Installation Schedule: INSERT TEXT HERE
- Maintenance and Inspection: INSERT TEXT HERE
- Responsible Staff: INSERT TEXT HERE

3. Designate Washout Areas:

Describe location(s) and controls to minimize the potential for stormwater pollution from washout areas for concrete mixers, paint, stucco, etc. (See SWPPP Guide, Chapter 5, P2 Principle 3 for more information.)

- BMP Description: INSERT TEXT HERE
- Installation Schedule: INSERT TEXT HERE
- Maintenance and Inspection: INSERT TEXT HERE
- Responsible Staff: INSERT TEXT HERE

- BMP Description: INSERT TEXT HERE
- Installation Schedule: INSERT TEXT HERE
- Maintenance and Inspection: INSERT TEXT HERE
- Responsible Staff: INSERT TEXT HERE

4. Establish proper equipment/vehicle fueling and maintenance practices:

Describe equipment/vehicle fueling and maintenance practices that will be implemented to control pollutants to stormwater (e.g., secondary containment, drip pans, spill kits, etc.) (See SWPPP Guide, Chapter 5, P2 Principle 4 for more information.)

- BMP Description: INSERT TEXT HERE
- Installation Schedule: INSERT TEXT HERE
- Maintenance and Inspection: INSERT TEXT HERE
- Responsible Staff: INSERT TEXT HERE

- BMP Description: INSERT TEXT HERE
- Installation Schedule: INSERT TEXT HERE
- Maintenance and Inspection: INSERT TEXT HERE
- Responsible Staff: INSERT TEXT HERE

5. Allowable non-stormwater discharges and control equipment/vehicle washing:

For the allowable non-stormwater discharge(s) associated with construction industrial activity identified, describe controls and measures that will be implemented at those sites to minimize pollutant discharges. (See SWPPP Guide, Chapter 5, P2 Principle 5 for more information.)

- BMP Description: INSERT TEXT HERE
- Installation Schedule: INSERT TEXT HERE
- Maintenance and Inspection: INSERT TEXT HERE
- Responsible Staff: INSERT TEXT HERE

- BMP Description: INSERT TEXT HERE
- Installation Schedule: INSERT TEXT HERE
- Maintenance and Inspection: INSERT TEXT HERE
- Responsible Staff: INSERT TEXT HERE

6. Spill Prevention and Control Plan:

Describe the spill prevention and control plan to include ways to reduce the chance of spills, stop the source of spills, contain and clean up spills, dispose of materials contaminated by spills, and train personnel responsible for spill prevention and control. (See SWPPP Guide, Chapter 5, P2 Principle 6 for more information.)

- INSERT TEXT HERE

7. Any Additional BMPs:

Describe any additional BMPs that don't fit into the above categories. Indicate the problem they are intended to address.

- BMP Description: INSERT TEXT HERE
- Installation Schedule: INSERT TEXT HERE
- Maintenance and Inspection: INSERT TEXT HERE
- Responsible Staff: INSERT TEXT HERE

- BMP Description: INSERT TEXT HERE
- Installation Schedule: INSERT TEXT HERE
- Maintenance and Inspection: INSERT TEXT HERE
- Responsible Staff: INSERT TEXT HERE

3.2 Allowable Non-Stormwater Discharge Management

Instructions:

- Identify all allowable sources of non-stormwater discharges (except flows from firefighting activities) that are not identified above.
- Identify measures used to eliminate or reduce these discharges and the BMPs used to prevent them from becoming contaminated.
- For more information, see SWPPP Guide, Chapter 3.A. Also, review your permit for exact details.

Project Information:

List allowable non-stormwater discharges and the measures used to eliminate or reduce them and to prevent them from becoming contaminated:

- INSERT TEXT HERE

SECTION 4: SELECTING POST-CONSTRUCTION BMPs

Instructions:

- Describe all post-construction stormwater management measures that will be installed during the construction process to control pollutants in stormwater discharges after construction operations have been completed. Examples of post-construction BMPs include:

  - ☐ Biofilters
  - ☐ Detention/retention devices
  - ☐ Earth dikes, drainage swales, and lined ditches
  - ☐ Infiltration Basins
  - ☐ Porous Pavement
  - ☐ Other proprietary permanent structural BMPs
  - ☐ Outlet protection/velocity dissipation devices
  - ☐ Slope protection
  - ☐ Vegetated strips and/or swales

- Identify any applicable federal, state, local, or tribal requirements for design or installation.
- Describe how low impact designs or smart growth considerations have been incorporated into the design.
- Any structural BMPs should have design specifications and details referred to and attached as appendices to the SWPPP.
- For more information on this topic, please refer to your state's stormwater manual.
- You may also want to consult one of the references listed in Appendix D of the SWPPP Guide.
- Visit the post-construction section of EPA's Menu of BMPs at: www.epa.gov/npes/menuofbmps

Project Information:

- BMP Description: INSERT TEXT HERE
- Installation Schedule: INSERT TEXT HERE
- Maintenance and Inspection: INSERT TEXT HERE
- Responsible Staff: INSERT TEXT HERE

- BMP Description: INSERT TEXT HERE
- Installation Schedule: INSERT TEXT HERE

- Maintenance and Inspection: INSERT TEXT HERE
- Responsible Staff: INSERT TEXT HERE

- BMP Description: INSERT TEXT HERE
- Installation Schedule: INSERT TEXT HERE
- Maintenance and Inspection: INSERT TEXT HERE
- Responsible Staff: INSERT TEXT HERE

SECTION 5: INSPECTIONS and MAINTENANCE

5.1 Inspections

Instructions:

- Identify the individual(s) responsible for conducting inspections and describe their qualifications. Reference or attach the inspection form that will be utilized.
- Describe the frequency that inspections will occur at your site including any correlations to storm frequency and intensity.
- Note that inspection details for particular BMPs should be included in Sections 2 and 3.
- You should also document the repairs and maintenance that you undertake as a result of your inspections. These actions can be documented in the corrective actions log described in Section 5.3 below.
- For more on this topic, see SWPPP Guide, Chapters 6 and 8.
- Also, see suggested inspection form in Appendix B.

Project Information:

1. Inspection Personnel:

Identify the person(s) who will be responsible for conducting inspections and describe their qualifications.

- INSERT TEXT HERE

2. Inspection Schedule and Procedures:

i. Describe the inspection schedules and procedures you have developed for your site (include frequency of inspections for each BMP or group of BMPs, indicate when you will inspect, e.g. before/during/and after rain events, spot inspections, etc.).

- INSERT TEXT OR TABLE HERE

ii. Describe the general procedures for correcting problems when they are identified. Include responsible staff and timeframes for making corrections.

- INSERT TEXT OR TABLE HERE

iii. Attach a copy of the inspection report you will use for your site.

- REFERENCE ATTACHMENT

5.2 Maintenance of Controls

Instructions:

- Summarize routine maintenance of structural and non-structural BMPs. Include schedules (daily, weekly, etc.) as well as the staff responsible.
- Maintenance procedures for individual BMPs should be included in Section 2 and 3.
- Specific maintenance activities can be documented in the corrective action log described below in Section 5.3.
- For more on this topic, see SWPPP Guide, Chapters 4 and 5 and the suggestions on the Sample Inspection Report in Appendix B.

Project Information:

Maintenance Procedures: INSERT TEXT OR TABLE HERE

5.3 Corrective Action Log

Instructions:

- Create here, or as an attachment, a corrective action log. This log should describe repair, replacement, and maintenance of BMPs undertaken based on the inspections and maintenance procedures described above. Actions related to the findings of inspections should reference the specific inspection report.
- This log should describe actions taken, date completed, and note the person that completed the work.

Project Information:

Corrective Action Log: INSERT TABLE HERE or REFERENCE ATTACHMENT

SECTION 6: Recordkeeping and Training

6.1 Recordkeeping

Instructions:

The following is a list of records you should keep at your project site available for inspectors to review:

- Dates of grading, construction activity, (and stabilization which is covered in Section 7).
- A copy of the construction general permit (attach).
- The signed and certified NOI form or permit application form (attach).
- A copy of the letter from the EPA/State notifying you of their receipt of your complete NOI/application (attach).
- Inspection reports (attach).
- Records relating to endangered species and historic preservation (attach).
- Check your permit for additional details.
- For more on this subject, see SWPPP Guide, Chapter 6.C.

Project Information:

Dates when major grading activities occur:

- INSERT TEXT OR TABLE HERE

Dates when construction activities temporarily or permanently cease on a portion of the site

- INSERT TEXT OR TABLE HERE

6.2 Log of Changes to the SWPPP

Instructions:

Create a log here, or as an attachment, of changes and updates to the SWPPP. You should include additions of new BMPs, replacement of failed BMPs, significant changes in the activities or their timing on the project, changes in personnel, changes in inspection and maintenance procedures, and updates to site maps, etc.

Project Information:

Log of changes and updates to the SWPPP

- CREATE LOG HERE or as an ATTACHMENT

6.3 Training

Instructions:

- Training your staff and subcontractors is an effective BMP. As with the other steps you take to prevent stormwater problems at your site, you should document the training that you conduct for your staff, for those with specific stormwater responsibilities (e.g. installing, inspecting, and maintaining BMPs), and for subcontractors.
- Include dates, number of attendees, subjects covered, and length of training.
- For more on this subject, see SWPPP Guide, Chapter 8.

Project Information:

Describe Training Conducted:

- General stormwater and BMP awareness training for staff and subcontractors
  INSERT TEXT HERE
- Detailed training for staff and subcontractors with specific stormwater responsibilities
  INSERT TEXT HERE

Individual(s) Responsible for Training:

- INSERT TEXT HERE

SECTION 7: FINAL STABILIZATION

Instructions:

- Describe procedures for final stabilization. If you complete major construction activities on part of your site, you can document your final stabilization efforts for that portion of the site. Many permits will allow you to then discontinue inspection activities in these areas (be sure to check your permit for exact requirements.) You can amend or add to this section as areas of your project are finally stabilized.
- Update your site plans to indicate areas that have achieved final stabilization.
- For more on this topic, see SWPPP Guide, Chapter 9.

Project Information:

- INSERT TEXT HERE

SECTION 8: CERTIFICATION AND NOTIFICATION

Instructions:

- The SWPPP should be signed and certified by the construction operator(s). Attach a copy of the NOI and permit authorization letter received from EPA or the State in Appendix D.

Project Information:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: _____ Title: _____

Signature: _____ Date: _____

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: _____ Title: _____

Signature: _____ Date: _____

SWPPP APPENDICES

Attach the following documentation to the SWPPP:

App A - General Location Map

App B - Site Maps

App C - Copy of Construction General Permit

App D - Copy of NOI and acknowledgement letter from EPA/State

App E - Inspection Reports

App F - Corrective Action Log (or in Section 5.3)

App G - Log of Changes and Updates to SWPPP (or in Section 6.3)

App H - Subcontractor Certifications/Agreements

App I - BMP specifications and details

App J - Additional Information (i.e., Endangered Species and Historic Preservation documentation)

Appendix C-5

Exhibits for Minimum Control Measure #5 – Post-Construction Stormwater Management in New Development and Re-development

MEMORANDUM COVER

Subject: New Virginia Stormwater Management Program (VSMP)

Action Requested: Shall the Board adopt an ordinance to comply with the provisions of the Virginia Stormwater Management Act and the Virginia Stormwater Management Regulations?

Summary: Attached is the local Virginia Stormwater Management Program (VSMP) Ordinance for public comment and the Board of Supervisors consideration. Ordinance adoption is presented as part of the FY 15/FY16 budget process. A public hearing was previously held on the ordinance under agenda item I-1(a) at the Board of Supervisors meeting on April 22, 2014. After hearing public comments on the proposed ordinance, the public hearing on this item was closed and action deferred until the May 13, 2014 regular meeting of the Board. Implementation of the new Virginia Stormwater Management Regulations and VSMP is required by localities by July 1, 2014 (FY 15). A locally adopted VSMP ordinance is a required element of a VSMP in accordance with Commonwealth of Virginia law and regulations. The ordinance contains proposed fees which follow the statewide fee schedule contained within Chapter 870 of the State VSMP Regulations.

Staff recommends approval of the ordinance.

Fiscal Impact: New program revenues are generated based on statewide fee schedule and program implementation costs.

FMS Approval, if Applicable: Yes ☐ No ☐

Assistant County Administrator

Adam R. Kinsman

Acting County Administrator

M. Douglas Powell

Attachments:
1. Memorandum
2. Virginia Stormwater Management Program (VSMP) ordinance – Showing Changes Since April 8, 2014 Work Session
3. Virginia Stormwater Management Program (VSMP) ordinance

Agenda Item No.: J-1

Date: May 13, 2014

MS4 FY14 (PY1)

Engineering & Resource Protection Division - Director's Worksheet

Measure	FY03	FY04	FY05	FY06	FY07	FY 08	FY09	FY10	FY11	FY12	FY13	FY14
E&S, Drainage & Stormwater plans reviewed	171	185	195	209	216	261	189	167	195	170	147	**191**
Land Disturbing Permits issued	75	96	93	100	78	77	63	49	57	49	37	**63**
Project E&S compliance inspections	3,586	2,665	3,074	2,586	4,138	4,037	2,730	3,992	2,580	2,379	1,616	**1,790**
Single-Family E&S plans reviewed	801	889	889	727	577	254	195	273	307	292	354	**361**
Single Family E&S compliance inspections	2,695	2,576	2,920	2,738	2,052	776	1,188	843	1,317	1,056	1,493	**1,567**
Wetland Board cases heard	13	14	9	10	9	7	13	8	7	6	12	**7**
Wetlands JPA Reviews - no case	Not tracked				36	25	28	10	22	22	18	**18**
Chesapeake Bay Board cases hearc		0	13	27	44	39	21	26	29	27	25	**33**
CBPA Program administrative cases (CBE's)	35	46	69	102	69	113	125	129	112	170	135	**123**
Perennial Stream Determinations (PFDs)		47	133	84	138	123	98	104	66	189	220	**135**
Septic System Pumpouts documented	250	95	400	495	492	1,239	676	656	299	686	918	**1,068**
Streetlight Requests handled	Not tracked								7	5	7	**11**
Special Stormwater Criteria applied	Not tracked						14	36	49	32	37	**82**
Percentage of Erosion & Sediment, Drainage and Stormwater Plans Reviewed within 30 Days of Receipt	97.0%	88%	83%	76%	82%	79.7%	96.3%	97.6%	97.5%	99.4%	98.7%	**96.3%**
Percentage of Erosion & Sediment, Drainage and Stormwater Plans Reviewed within 21 Days of Receipt			60%	64%	71%	58.5%	82.5%	88.0%	92.9%	94.7%	89.8%	**92.7%**
Total Number of Plans processed by the Division (all plans of development, not single-family)	389	436	522	582	610	661	429	383	391	343	328	**441**
Percentage of total plans approved by the Division within 3 submittals (all plans of development, not single-family)	Not tracked					90.7%	92.2%	91.1%	84.9%	87.1%	83.2%	**88.7%**
Total Land Area Serviced - Plan Review (acres)	Not tracked									150.1	150.7	**249.16**

BMPs Installed in FY14 (PY1) - James City County, Virginia

No.	ID Code	Plan No.	HUC	Project Name/Applicant	BMP Type	Drain. Area	DOC - I/M Agree	Dev Type
1	YC 066	SP-2-13	JL28	WJCC Schools- Toano Middle School Drop Off Area and Parking (East BMP)	Bioretention	0.20	No	New
2	YC 067	SP-2-13	JL28	WJCC Schools - Toano Middle School Drop Off Area and Parking (North BMP)	Bioretention	0.33	No	New
3	YC 068	SP-2-13	JL28	WJCC Schools - Toano Middle School Drop Off Area and Parking (West BMP)	Bioretention	0.22	No	New
4	PC 289	S-57-11	JL31	JCC - Forest Heights Road Neighborhood Improvement Project	Wet ED Pond	18.10	No	New
5	PC 290	S-2-04	JL31	Settlement at Powhatan Creek Phase 1 (BMP # 1.1)	Dry Pond with Forebay	10.04	Yes	New
6	PC 291	S-2-04	JL31	Settlement at Powhatan Creek Phase 1 (BMP # 1.2)	Wet ED Pond	18.03	Yes	New
7	PC 292	S-2-04	JL31	Settlement at Powhatan Creek Phase 1 (BMP # 1.3)	Dry Pond with Forebay	1.50	Yes	New
8	PC 293	S-39-06	JL31	Settlement at Powhatan Creek Phase 2 (BMP # 2.1)	Underground Detention	9.07	Yes	New
9	PC 294	S-2-04	JL31	Settlement at Powhatan Creek Phase 1 (Rivermoor)	Dry Swale	0.50	Yes	New
10	PC 295	S-2-04	JL31	Settlement at Powhatan Creek Phase 1 (Coronation)	Dry Swale	0.40	Yes	New
11	PC 296	S-39-06	JL31	Settlement at Powhatan Creek Phase 2 (South Square)	Dry Swale	1.45	Yes	New
12	PC 297	S-15-12	JL31	Settlement at Powhatan Creek Phase 3 (BMP # 3.1)	Dry Pond with Forebay	4.95	Yes	New
13	PC 298	S-15-12	JL31	Settlement at Powhatan Creek Phase 3 (BMP # 3.2)	Wet ED Pond	8.01	Yes	New
14	PC 299	S-15-12	JL31	Settlement at Powhatan Creek Phase 3 (South Orchard)	Wet Swale w/ level spreader	0.42	Yes	New
15	JR 071	SP-14-11	JL35	Busch Gardens Octoberfest Attraction - 2012 (Verbolten)	Pretreatment Sediment Forebay	6.10	Yes	New
16	WC 120	S-48-09	YO62	Stonehouse Tract 12 Phase 2 (BMP # 4)	Wet ED Pond	2.51	Yes	New
17	WC 121	S-48-09	YO62	Stonehouse Tract 12 Phase 2 (BMP # 5)	Bioretention	1.91	Yes	New
18	WC 122	S-48-09	YO62	Stonehouse Tract 12 Phase 2 (BMP # 6)	Bioretention	1.27	Yes	New
19	WC 123	S-48-09	YO62	Stonehouse Tract 12 Phase 3 (BMP # 7)	Wet ED Pond	2.36	Yes	New
20	WC 124	S-48-09	YO62	Stonehouse Tract 12 Phase 3 (BMP # 8)	Wet ED Pond	1.46	Yes	New
21	WC 125	S-48-09	YO62	Stonehouse Tract 12 Phase 3 (BMP # 9)	Bioretention	1.21	Yes	New
22	CC 044	SP-121-99	JL35	Anheuser Busch Brewery Plant Site BMP (VPDES)	Dry Pond	40.27	Yes	New
23	PC 187	SP-79-12	JL31	JW Crossing Phase III - Three Manufactured BMPs onsite (Focal Points)	Manufactured BMP	0.37	Yes	New
24	PC300	SP-100-11	JL31	Settler's Market at New Town Section 9 - Front Anchor Store B (Focal Point)	Manufactured BMP	2.92	Yes	New
	24 total new BMPs in FY14 (PY1).				**Total (acres)**	**133.60**		

9/11/2014

OWNER ID NO.: 32
WILLIAMSBURG JAMES CITY COUNTY SCHOOLS
PO BOX 8784
WILLIAMSBURG VA 231878784

BMP ID: PC287

Dear James City County Stormwater Management Facility Owner:

Recently James City County Stormwater Division staff inspected one or more Stormwater Management Facilities (SWMF) also known as best management practices (BMPs) located on your property. The purpose of the inspection was to determine the overall condition of your SWMF and to provide you with recommendations regarding any needed maintenance or repairs. Based on our recent field inspection, the condition of your SWMF has been assigned a numerical score that is recorded on the enclosed inspection.

If your inspection report(s) indicate a total score of 2 or lower, please correct any deficiencies noted and contact the Stormwater Division upon completion.

If your inspection report(s) indicate a total, score of 3 or higher, please contact the Stormwater Division to discuss the appropriate corrective actions, prior to initiating any remedial action.

In addition, the following documents are enclosed for your review: James City County's Private SWMF Program Summary and SWMF Glossary/Maintenance Guidance.

The goal of our SWMF program is to reduce the amount of pollutants that are discharged into our streams and rivers through educational outreach and appropriate maintenance of all SWMF to ensure proper design function. The partnership of our SWMF program and the maintenance SWMF owners provide is essential to achieve this goal.

Please contact me directly by calling 757-259-1443 or email me at pat.menichino@jamescitycountyva.gov to discuss your SWMF or any information contained within this letter.

Sincerely,

Patrick T. Menichino
Stormwater Specialist

Stormwater Management Facility Glossary and Maintenance Guidance

BASIN BOTTOM and SIDE SLOPES: The floor of a detention (dry) SWMF and the sides of a retention/detention SWMF adjacent to the normal pool or floor.

Maintenance items:

- ✓ Remove accumulated sediment
- ✓ Note condition of ground cover and reestablish as necessary
- ✓ Look for signs of erosion and repair with vegetation or other appropriate material.
- ✓ Ensure that access is kept clear to the to any pipes and channels discharging into SWMF
- ✓ Prevent standing water and mosquito habitat in bottom of dry detention basin

CONDITION of the AQUATIC ENVIRONMENT: For retention facilities with a permanent pool of water.

Maintenance items:

- ✓ Look for excessive algae growth. This is a sign of nutrient over-enrichment probably caused by over-fertilization in the SWMF's watershed.
- ✓ Note presence of invasive plants or dominance by one vegetation type.
- ✓ Look for evidence of non-stormwater (illicit discharges) discharges to facility such as discolored water, foam, fish kills. Investigate source of discharge and report to Stormwater Division.

DEBRIS/SEDIMENT ACCUMULATION: This involves trash, floatable debris or sediment accumulation not already noted.

- ✓ Maintenance items:
- ✓ This material could affect the proper functioning of the SWMF and needs to be removed.

EMBANKMENTS: A raised impounding structure (dam) made from compacted soil to impound stormwater runoff.

Maintenance items:

- ✓ Remove any woody vegetation such as trees and shrubs for a distance of 10 feet around the embankment
- ✓ Inspect vegetation on dam – it should be covered with grassy vegetation mowed to a height of no less than 6 to 8 inches tall. Bare areas need to be covered with topsoil, seed and mulch to begin stabilization process.
- ✓ Any areas of erosion or settlement need to be investigated and corrective action taken. Repaired areas need to be filled with non-organic soil material, compacted and covered with topsoil, seed and mulch.
- ✓ Look for areas of slope slippage or large cracks on the dam. Investigate to determine cause of problem and then repair and stabilize with vegetation.
- ✓ Fill any animal burrows or low spots in the dam with non-organic soil, compacted and covered with topsoil, seed and mulch.
- ✓ Look for water seepage below the dam and at the abutments where the dam ties back to natural grade. Any wet areas need to be noted and monitored over time for change in the amount or color of discharge. Seepage on the downstream dam face needs to be investigated immediately.

EMERGENCY SPILLWAY: A SWMF spillway designed and constructed to discharge flow in excess of the principal spillway design discharge.

Maintenance items:

- ✓ Remove any woody vegetation growing in the spillway.
- ✓ Look for signs of erosion and repair with vegetation or other appropriate material.
- ✓ Remove any trash or debris from the spillway.
- ✓ Mow if grass in spillway is greater than 6 to 8 inches high.

FOREBAY: A settling basin or plunge pool constructed at the incoming discharge points of a stormwater management facility (SWMF) that serves to trap incoming coarse sediments before they accumulate in the main treatment area.

Maintenance items:

- ✓ Remove debris, trash and woody vegetation in forebay.
- ✓ Repair any breaches in the forebay structure.
- ✓ Remove sediment that is impeding the flow of water from pipes or channels into forebay.
- ✓ Remove sediment from entire forebay if it is more than 50% full.

INLET: Points at which water enters or is discharged into a SWMF.

Maintenance items:

- ✓ Look for signs of erosion at the inlet discharge points and repair with riprap or other appropriate materials.
- ✓ Remove sediment build-up, debris, or woody vegetation growing at the outfall of inlet pipes or ditches.

MEDIA: An engineered soil, sand or other aggregate material that filters and allows for infiltration of stormwater. Soil media also supports any plant growth that is part of the SWMF.

Maintenance items:

- ✓ Remove any sediment and debris from surface of filter media.
- ✓ Replace any clogged media as evidenced by standing water

OUTLET: The point at which water discharges from the SWMF through a pipe, channel, weir or orifice.

Maintenance items:

- ✓ Look for signs of erosion at the outlet discharge point and repair with riprap or other appropriate materials.
- ✓ Inspect outlet structure (headwall, end section, etc.) for undermining or separation from the barrel pipe.
- ✓ Remove sediment build-up, debris, or woody vegetation growing at the outfall of pipe.
- ✓ Inspect the outfall channel below the outlet structure for blockages or erosion. Remove any blockages and repair any erosion problems with riprap or other appropriate materials.

James City County Approach to Individual Lot Special Criteria

Adoption of Local Ordinance
On May 13, 2014 the County adopted the local Virginia Stormwater Management (VSMP) ordinance, Ordinance No. 85A-21, Article II of Chapter 8 of the County Code. Incorporated into the ordinance are the provisions to employ a mix of site design, runoff reduction and pollutant control strategies, including structural and non-structural BMP practices suitable for application in the coastal plain of Virginia. Local VSMP ordinance was crafted using December 2012 state issued model ordinance and guidance provided by DCR and DEQ, as it pertains to individual residential lot stormwater management [Sections 1-8(C) and 1-10(C) & (D)], and reflects the promotion of rainwater harvesting measures (9VAC25-870-74), stormwater management plan review requirements (9VAC25-870-108), long-term maintenance of permanent stormwater management facilities (9VAC25-870-112), and inspection requirements (9VAC25-870-114).

Maintenance Agreements
Prior to issuance of a land-disturbing permit for any project which involves the construction of stormwater management or drainage facilities or systems, an executed Declaration of Covenants - Inspection/Maintenance of Drainage System is required. This document is recorded in the County land records and binds all present and subsequent owners of property served by the facility or system. This practice continues with adoption of the local VSMP ordinance [Section 8-29(a)].

BMP Clearinghouse Regulations
County VSMP authority staff continues to review the Virginia BMP clearinghouse website to review all aspects of planning, design, construction, inspection and maintenance standards and specifications related to those practices designated for use as individual residential lot stormwater management purposes. In particular, these include postconstruction, non-proprietary BMPs listed as Virginia DEQ Stormwater Design Specifications No. 1, 2, 4, 6, 7, 8, 9, and 10.

Onlot LID Practices Menu
In conjunction with work associated with a local subdivision construction plan of development, a simple "draft" educational paper was assembled (May 2014) by County staff to provide information to local citizens, plan preparers, builders, developers, HOAs, and other partners who in this particular case are bound by plan approvals to implement onlot measures on single-family homes within the subdivision. This document is entitled *On-Lot Low Impact Development Practices*.

Inspections of LID Features
Any on-lot stormwater management features used to meet the runoff reduction worksheet will be inspected once every five years, as is consistent with James City County's practice of inspecting all privately owned stormwater BMP facilities.

Procedures for Post Construction Privately-Owned BMP Inspection, Compliance, and Enforcement

- Inspection of privately-owned stormwater management facilities are inspected at least once every five years in James City County. An attempt is made to inspect most if not all facilities in the first four years of the permit cycle to allow for follow-up on any BMPs that required maintenance, additional work and/or upgrades, and inspection of new facilities in the fifth year.

- The BMP inspection schedule is prioritized each year in order to visit and report on those facilities that have the oldest inspection date.

- A score is given to each stormwater facility as follows:

  1 = No maintenance needed
  2 = Regular maintenance needed
  3 = Non-routine maintenance needed
  4 = Repair needed

- At the end of each inspection season, a letter is sent to the owners of the facilities that were inspected describing what was discovered about the BMP, and the subsequent score. In the letter, the owner is encouraged to do the proper maintenance and to contact the stormwater division if the score is a 3 or 4 to discuss appropriate corrective action.

- A follow-up inspection takes place of all of the facilities that scored a 3 or 4 within the permit cycle.

- For those facilities that continue to be in disrepair, a second letter and inspection report is then sent to the BMP owner, stating that the repairs must be done to the satisfaction of the County within 90 days.

- The owner is notified that if the repairs have not been completed within this time period, the County may initiate the necessary repairs and send an invoice to the owners for incurred costs, as is described in the signed maintenance agreement documents recorded at the courthouse.

- For those facility owners still in non-compliance, or who have no maintenance agreement on file, legal action may ensue as the information is turned over to the county attorney's office for follow-up.

Stormwater Management Facility
Inspection and Maintenance Manual

VSMP Small MS4 General Permit
No.VAR040037

Prepared for:

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Sign-off Sheet

This document entitled Stormwater Management Facility Inspection and Maintenance Manual was prepared by Stantec Consulting Services Inc. for James City County. The material in it reflects Stantec's best judgment in light of the information available to it at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. Stantec Consulting Services Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions taken based on this report.

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1.0 James City County Stormwater Management

Stormwater runoff is the excess water from precipitation that flows over land or through drainage conveyance systems to receiving streams. Undeveloped lands allow the stormwater to soak into the ground. In areas with buildings, roads, parking lots, and other impervious (hardened) surfaces, the water flows over land into stormwater infrastructure, carrying a variety of pollutants along the way. Runoff eventually reaches receiving lakes, streams, and rivers. In James City County, the immediate bodies of water affected by stormwater include: Chickahominy River, James River, and the York River; all of which drain into the Chesapeake Bay. Stormwater management facilities (SWMFs) or Best Management Practices (BMPs) control polluted runoff by changing its characteristics such as: water quality, peak discharge, runoff volume, time of concentration, and/or velocity. These management measures are designed to cumulatively reduce the impacts of development on runoff and minimize the pollution that reaches the Chesapeake Bay. Virtually all-new development in James City County includes these facilities to treat the stormwater and minimize the negative effects on our waterways.

1.1 PURPOSE

This manual will be a tool to ensure proper maintenance and inspection, and includes procedures and standard forms that James City County will use in the General Services Department to execute and record stormwater management facility inspection and maintenance activities to comply with the Small Municipal Separate Storm Sewer system (MS4) general permit (9VAC25-890-40). This permit was developed and is administered by the Commonwealth of Virginia in accordance with the Federal Clean Water Act. Specific to the Inspection and Maintenance Plan is Section IIB of the MS4 General Permit, which requires pollution prevention and good housekeeping practices for municipal operations.

1.2 WHY MAINTAIN STORMWATER MANAGEMENT FACILITIES?

Thorough maintenance and inspection procedures for stormwater management facilities will reduce flooding and mitigate surface and groundwater pollution. BMPs are designed to minimize the degradation of downstream waters by treating stormwater before it enters the stormwater drainage system. Existing BMPs found in James City County include detention and retention ponds, bioretention, infiltration, and manufactured treatment devices. Each facility has specific and time-sensitive maintenance requirements to ensure they operate in accordance with their design.

1.3 REGULATORY BACKGROUND

The following sections provide background on the regulatory framework affecting James City County. While not all of these requirements relate directly to the requirements of the MS4 Permit, there are a broad range of regulations and policies that land owners in the

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Chesapeake Bay region are subject to that pertain to the management of stormwater associated with development activities.

1.3.1 Clean Water Act

The *Clean Water Act* (CWA) sets a goal that all waters in the United States be "fishable" and "swimmable," and requires all states and the District of Columbia to establish minimum water quality standards for wastewater treatment plants, agricultural operations, and municipal stormwater systems to ensure the health of their water bodies. Section 305b of the Clean Water Act requires vigorous monitoring and assessment programs to ensure compliance and progress.

The National Pollution Discharge Elimination System (NPDES) is a national program for issuing, modifying, monitoring, terminating, and enforcing state permits required for a municipality that discharges directly to surface water. The NPDES regulates point source pollution which is wastewater that comes from discrete point sources such as industrial discharges. Virginia's MS4 General Permit was developed under the NPDES program to regulate municipalities, military installations, and campuses at their points of discharge, as though they are point source dischargers.

For more information, see:

http://cfpub.epa.gov/npdes/cwa.cfm?program_id=45

1.3.2 Chesapeake Bay TMDL

In 2010, the US EPA established the Chesapeake Bay Total Maximum Daily Load (TMDL) which serves as a regulatory tool to enforce compliance with the Clean Water Act by monitoring and tracking control measures to restore the bay and its tidal rivers. The TMDL sets allowable limits for total phosphorous (TP), total nitrogen (TN), and total suspended solids (TSS) that can be discharged to the Chesapeake Bay, while allowing the Bay to still make sufficient progress toward water quality standards for dissolved oxygen, water clarity, underwater Bay grasses, and chlorophyll a, an indicator of algal presence. The TMDL subdivides the Chesapeake Bay Watershed into major river basins, thereby determining wasteload allocations at direct discharge points to the Bay.

Compliance with the Chesapeake Bay TMDL is explicitly written into the MS4 General Permit, and as such, James City County must demonstrate its compliance through annual reporting and periodic audits by Commonwealth and Federal regulatory enforcement officials.

For more information, see:

http://www.epa.gov/chesapeakebaytmdl/

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1.3.3 Virginia Stormwater Management Program (VSMP) Permit Regulations

The Virginia Stormwater Management Program (VSMP) includes the legal requirements for addressing stormwater in the Commonwealth of Virginia. This includes the permit program under the NPDES that covers municipal separate storm sewer systems (MS4), as well as construction related stormwater discharges. The program and permits issued under the program require the use of stormwater management practices, control techniques, design and engineering methods, and other provisions to protect water quality from discharge of pollutants associated with stormwater discharges.

The state's General VPDES Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4) requires James City County (VAR040037) to, among other things, operate under a plan to inspect and maintain existing stormwater management facilities in a functioning state (*Virginia Stormwater Management Program Regulations* or Regulations at 9VAC25-890-40). Inspection, operation, and maintenance of stormwater management facilities are the responsibility of the MS4 operator and permittee. As such, James City County must establish, in writing, an inspection program that ensures stormwater management facilities owned by James City County and private owners are functioning as intended. According to the Regulations (9VAC25-890-40 Section II.B.5) the inspection program is to be based on a system of priorities that considers the purpose of the facility, the contributing drainage area, and the downstream conditions, and is to be documented by inspection records. The intent of the inspection program is to provide for adequate long-term operation and maintenance of stormwater management facilities.

For more information, see:

http://www.deq.virginia.gov/Programs/Water/StormwaterManagement/VSMPPermits.aspx

http://www.jamescitycountyva.gov/STORMWATER/ms4-Permit-Information.html

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1.3.4 Local Chesapeake Bay Preservation Area (CBPA) Program

James City County is one of 84 localities in Virginia subject to the requirements of the Bay Act program because of the County's geographic location in the Tidewater region of Virginia. The Bay Act program is mandated by the Commonwealth of Virginia by Title 10.1 Conservation, Chapter 21 of the Code of Virginia and Chapter 20, Chesapeake Bay Preservation Designation and Management Regulations, 9VAC25- 830 et seq. of Virginia Administrative Code. Local implementation is achieved through Chapter 23 of the Code of James City, the Chesapeake Bay Preservation Ordinance.

In 1990, James City County was the first locality in the Commonwealth of Virginia to adopt a Chesapeake Bay Preservation ordinance. The purpose of the ordinance is to control and regulate runoff at the source to protect against and minimize pollution and deposition of sediment in wetlands, streams and lakes in James City County. The ordinance is intended to assist in the protection of the Chesapeake Bay from nonpoint source pollution, including runoff farm land, residential lawns, and other areas where stormwater runoff may introduce pollutants to the watershed.

1.3.5 James City County

The James City County Engineering and Resource Protection Division is responsible for the application of established environmental-related ordinances, permits, and policies. The goal of the James City County Stormwater Division is to ensure that the post-construction collection and control of stormwater within the County is adequately handled and maintained. Stormwater runoff is associated with all properties in the County, whether residential or nonresidential, and the downstream effects of runoff are directly related to the amount of hardened surface on a property. Stormwater management efforts provide benefits to all properties within the County through control of runoff and protection of the natural environment.

For more information, see:

http://www.jamescitycountyva.gov/STORMWATER/stormwater-Management-Facility-Owners.html

1.3.6 Stormwater BMP Clearinghouse Committee

The Virginia Stormwater Management BMP Clearinghouse is a helpful tool for identifying standards and specifications for all approved Virginia BMPs. Categories include, but are not limited to, low impact development (LID), environmental site design (ESD), or manufactured treatment devices (MTD's). The BMP Clearinghouse Committee is comprised of experts from the Virginia Department of Environmental Quality (DEQ) and the Virginia Water Resource Research Center (VWRRC), as well as, practitioners and consultants. The BMP Clearinghouse website provides technical and regulatory guidance on all BMP design, applications, and maintenance, and is explicitly referenced in the *Virginia Stormwater Management Program Regulations*.

For more information, see:

http://vwrrc.vt.edu/swc/

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2.0 James City County Persons of Responsibility

2.1 JAMES CITY COUNTY STORMWATER DIVISION

There are over 700 Stormwater management facilities (SWMFs) currently in James City County. Of these, more than 80 SWMFs are owned and operated by the JCC Stormwater Division. See Figure 2-1 for Stormwater Management facilities throughout the county and Appendix A for a location and list of the SWMFs owned and operated by the county. Because SWMFs help lessen the impacts of development, they are required under the County's Chesapeake Bay ordinance, as well as State and Federal law. The Stormwater Division inspects all SWMFs every five years using an industry standard reporting form and a copy is mailed to the owner. They also provide technical assistance to private BMP owners and information to the general public.

For more information, see:

http://www.jamescitycountyva.gov/STORMWATER/stormwater-Management-Facility-Owners.html

2.2 PRIVATE BMP OWNERS

The property owner where the SWMF is located is obligated through maintenance agreements to provide basic annual maintenance and to make any repairs that may be needed. Responsibilities include completing inspection forms, photo-documenting, and to provide notes or sketches as needed. The BMP owner should understand the basic design and function of the BMP, as well as observe how it actually functions during various storm events and decide when routine or non-routine maintenance is required.

The BMP owner is also encouraged to seek assistance from James City County Stormwater Division or qualified professionals who design, inspect or maintain BMPs if uncertain about the facility. The owner may make arrangements to delegate responsibility to a land management company, homeowners associations (HOA) board, BMP committee, or specialized landscape or site work contractor.

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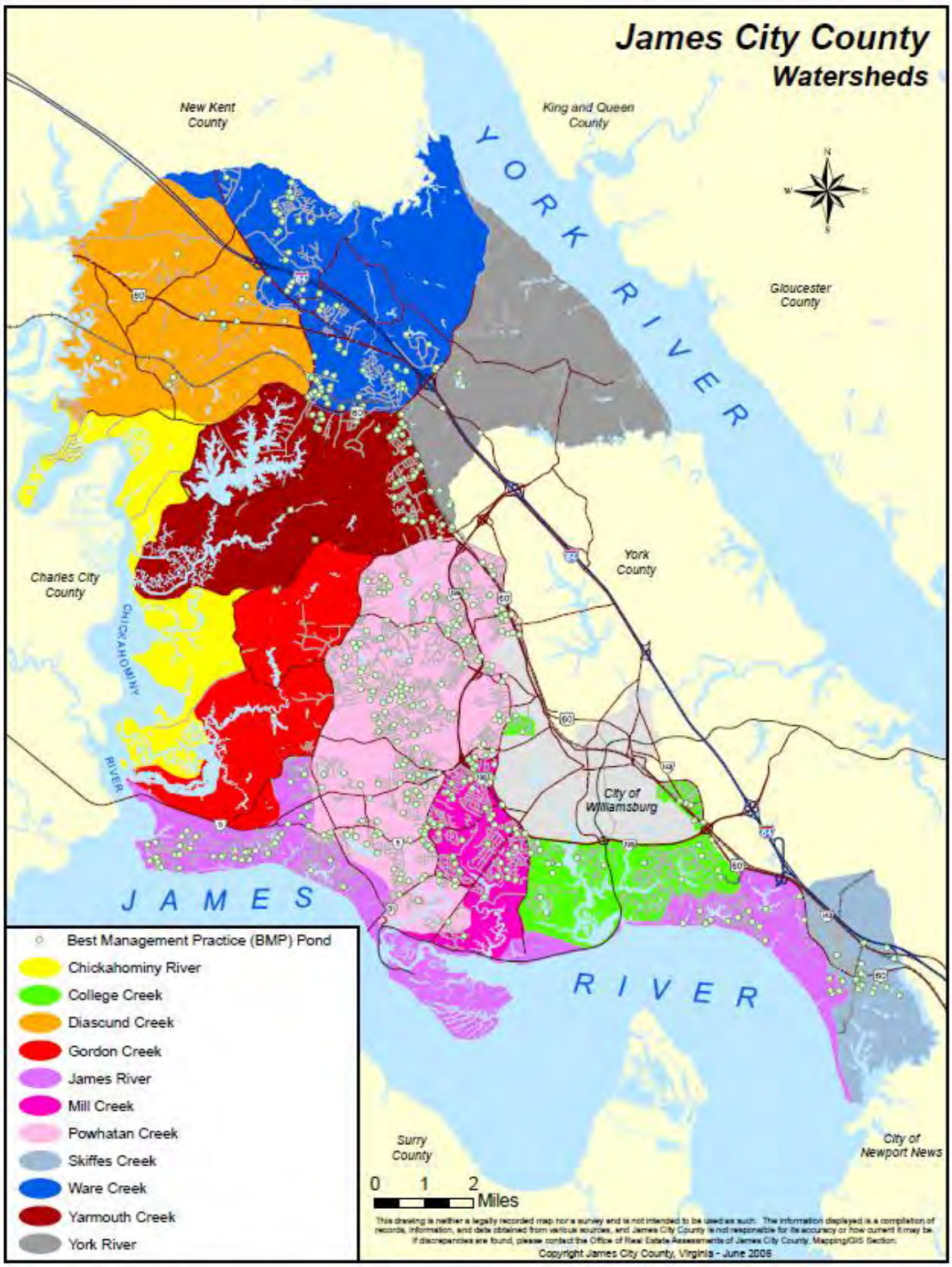

Figure 2-1 James City County Watershed Subdivision and BMPs

(Source: James City County)

3.0 FUNCTIONAL COMPONENTS

The subsequent sections discuss common primary functional components of stormwater Best Management Practices. The components listed may not be present on every type of stormwater BMP present in James City County, but rather represent general features that are common components of stormwater BMPs. A sufficient understanding of the terminology and functionality of each component will create uniformity among personnel and maintenance operations. More detailed information is available in the *Virginia Stormwater Management Handbook* (VSWMH) and the Virginia BMP Clearinghouse.

The maintenance items that are bolded in the tables below are routine maintenance activities that are critical to the function of the functional components and BMP. The maintenance will be managed by James City County Maintenance staff for James City County owned BMPs and will be conducted according to the provided schedule in the tables below. Privately owned BMPs will be maintained according to the schedule, but will be the responsibility of the BMP owner. Non-bolded items are non-routine maintenance or repairs.

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3.1 EARTHEN EMBANKMENT/DAM

The embankment is the feature of a basin or pond facility that is used to impound water. Compacted soil is the most common embankment and is designed to remain stable. However, there are conditions that may cause embankment failure. Catching these conditions during routine inspections can increase the life of an embankment and stormwater pond, as well as protect the health, safety, and welfare of people and property downstream.

Cracks can be caused by variation in materials, embankment height, or compression of the foundation. Cracks in the embankment can concentrate water and lead to failure by erosion within the embankment.

Seepage of water, through the embankment, can lead to piping within the embankment or foundation, which in turn can result in failure by internal erosion.

When **Stresses** acting on the embankment are too great, the embankment can begin to slide, resulting in the displacement of large portions of the embankment.

Trees growing on the embankment can cause roots to grow through the embankment creating pathways for water and pond leakage. Trees can also uproot in storm events and cause significant damage to the embankment.

Adequate erosion protection such as vegetation, riprap, or concrete is essential to maintaining an embankment. Trees, shrubs, or other woody plants should not be found on or near the embankments.

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Figure 3-1 Earthen Embankment/Dam

Figure 3-2 Earthen Embankment with riser structure

(Source: JCC Stormwater Division)

Table 3-1 Earthen Embankment Maintenance Guidelines

Maintenance	Frequency
***Mow to a height no less than 6 to 8 inches tall. Prevent growth of woody vegetation, and allow for observation and inspection**	Twice per year – once during the Spring and Fall growing season
***Repair erosion by covering bare areas with topsoil, seed, and mulch to maintain adequate stabilization**	As needed in spring and fall
***Repair rodent burrows to maintain structural integrity**	As needed and within 30 days of discovery
Replace or repair damaged or defective riprap or concrete	As needed to maintain functional stabilization
Observe areas of settlement, slope slippage, or seepage below and downstream of the dam	At each visit
* Bolded items are routine maintenance activities that are critical to the function of the functional components and BMP. Non-bolded items are non-routine maintenance, such as repairs.	

3.2 PRINCIPAL SPILLWAY

A principal spillway is the primary outlet for stormwater to leave the stormwater facility (BMP). Stormwater flows leaving the facility may be regulated by a pipe, weir system, or a riser structure, and may include an outlet pipe called a "barrel". The barrel runs through the embankment, and can be a trouble spot for long-term maintenance due to piping and seepage around the barrel. Principal spillways typically include a trash rack for safety and to collect trash and debris so it does not clog the riser and barrel. Low-level drains or orifices may also be included in the structure to regulate small storm events. These low-levels drains are typically near the ground surface and also have a tendency to clog. Orifices may be located on the principal spillway at higher elevations and also must be checked for clogging.

Figure 3-3 Principal Spillway

(Source: JCC Stormwater Division)

Table 3-2 Principal Spillway Maintenance Guidelines

Maintenance	Frequency
***Clear trash rack(s), low level drains, orifices, weirs, risers, and other features of trash, debris, and sediment**	As needed to maintain proper flow
Restore corrosion resistant coatings on metal structures or assemblies	As needed to halt or delay corrosion
Repair cracking or any damage of concrete structures	As needed based on observations and inspections
Observe for leakage at pipe joints, or piping (water flowing alongside the pipe) next to pipes through the embankment	As needed, requires repair immediately
Operate gate valves to ensure functionality (if present)	As needed based on observations and inspections
* Bolded items are routine maintenance activities that are critical to the function of the functional components and BMP. Non-bolded items are non-routine maintenance, such as repairs.	

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3.3 EMERGENCY SPILLWAY/SECONDARY SPILLWAY

The emergency spillway is designed to safely handle flows that exceed the principal spillway design. It is typically an open channel constructed beside an embankment with an inlet channel, a control section, and an exit channel. Non-erodible vegetation is typically used; however for armoring, riprap, concrete or other permanent and non-erodible surfaces may be used.

Although the emergency spillways are not utilized during small storms, larger storms require access to the emergency spillway to convey large amounts of water once the original design of the principal spillway is exceeded. Regular maintenance on the emergency spillway will ensure functionality of the BMP during large storm events.

An emergency spillway, may not exist on all pond-type structures or it may be a combined principal/emergency spillway. An overland emergency spillway may not always be possible because of site limitations. A combined spillway simply means the principal spillway structure is designed to convey both high and low flows.

Figure 3-4 Emergency Spillway

(Source: JCC Stormwater Division)

Table 3-3 Emergency Spillway Maintenance Guidelines

Maintenance	Frequency
***Mow to a height no less than 6 to 8 inches tall. Prevent growth of woody vegetation, and allow for observation and inspection (if vegetated)**	Twice per year – once during the Spring and Fall growing season
***Remove trash, debris, and sediment**	As needed to maintain proper flow
***Repair erosion by covering bare areas with topsoil, seed, and mulch to maintain adequate stabilization (if vegetated)**	As needed during spring and fall
***Repair rodent burrows to maintain structural integrity (if vegetated)**	As needed and within 30 days of discovery
***Seed, lime, and fertilize (if vegetated)**	As needed in spring and fall to maintain adequate permanent vegetation for stabilization
Replace or repair riprap or concrete	As needed to maintain functional stabilization
* Bolded items are routine maintenance activities that are critical to the function of the functional components and BMP. Non-bolded items are non-routine maintenance, such as repairs.	

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3.4 TRASH RACK

Principal spillways typically need to have a trash rack to block out debris such as grass clippings, trash, leaves, sediment, etc. Trash and debris accumulation on the trash rack may clog the principal spillway, not allowing the basin to function as designed.

Figure 3-5 Trash Rack

(Source: JCC Stormwater Division)

Table 3-4 Trash Rack Maintenance Guidelines

Maintenance	Frequency
***Clear trash rack(s) of trash, debris, and sediment**	As needed to maintain proper flow
Restore corrosion resistant coatings on metal structures or assemblies	As needed to halt or delay corrosion
Check and maintain locks on trash racks	As needed to maintain proper function and limit access to structure via trash rack
* Bolded items are routine maintenance activities that are critical to the function of the functional components and BMP. Non-bolded items are non-routine maintenance, such as repairs.	

3.5 INLET AND OUTLET STRUCTURES

Inlet and outlet structures are components of a facility that convey stormwater into and out of the facility. These components may include pipes, flumes, grass and riprap channels, and may be connected to flared end pipes or other energy dissipaters.

Figure 3-6 Outlets

(Source: JCC Stormwater Division)

Table 3-5 Inlet and Outlet Structure Maintenance Guidelines

Maintenance	Frequency
***Remove trash, debris, and accumulated sediment from inlets and outlets**	As needed to maintain proper flow and function
Reset or replace displaced pipes, flared end sections, energy dissipaters, or riprap.	As needed to maintain proper function
Repair erosion and stabilize areas with appropriate materials	As needed to maintain functional stabilization
***Remove any woody vegetation in or adjacent to the component**	As needed to maintain functional stabilization
Repair or replace cracked, defective, grouted, and concrete structures	As needed to maintain proper function
* Bolded items are routine maintenance activities that are critical to the function of the functional components and BMP. Non-bolded items are non-routine maintenance, such as repairs.	

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3.6 ENERGY DISSIPATERS/ OUTLET PROTECTION

Flow from a pipe, channel, or BMP can become concentrated and cause erosion at the outlet. To prevent this, energy dissipating devices reduce the speed and energy of the stormwater before entering the receiving stream. There are multiple designs for energy dissipaters, including flared end sections, riprap lined aprons, level spreaders, stilling basins, and impact basins. The most common of these structures is an apron with a riprap lining, grouted riprap, or concrete. The riprap apron is typically lined with filter fabric to prevent soil movement through and into the riprap. It is constructed of non-erodible material and designed to spread the flow out to reduce depth and velocity.

Figure 3-7 Flared end Section with Riprap Lined Apron

Figure 3-8 Concrete Energy Dissipater

(Source: JCC Stormwater Division)

Figure 3-9 Energy Dissipater at Inlet

(Source: JCC Stormwater Division)

Table 3-6 Energy Dissipater Maintenance Guidelines

Maintenance	Frequency
***Remove trash, debris, and accumulated sediment**	As needed to maintain proper flow and function
Reset or replace displaced riprap	As needed to maintain proper function
Repair erosion and stabilize with appropriate materials	As needed to maintain proper function
Repair or replace cracked or spalling grouted and concrete structures	As needed to maintain proper function
* Bolded items are routine maintenance activities that are critical to the function of the functional components and BMP. Non-bolded items are non-routine maintenance, such as repairs.	

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3.7 VEGETATION/LANDSCAPING

Landscaping, such as groundcovers, aquatic or marsh plants, trees, or shrubs, plays a crucial role in BMPs because it helps stabilize soil, improves pollution removal capabilities, and increases the overall aesthetics of a stormwater BMP. In Virginia, some BMPs are assigned target pollutant removal efficiencies based on the use of vegetative practices. Because of these attributes, landscape plans are often an essential part of the BMP construction, operation, and maintenance.

Vegetation and landscaping components require regular maintenance, especially during the growing season. Each BMP should ideally have native plants of a suitable variety and density. BMPs will have different plants based on soil moisture, exposure to sunlight, or pollutant load.

Wet ponds, constructed wetlands, and enhanced extended detention facilities may have aquatic or marsh type plants installed on benches. These wetland plants may be located just within the perimeter of the pond. Separate safety benches may be included as well, or they may be integrated into the aquatic or marsh bench. Maintenance of landscape vegetation for aquatic and marsh benches will vary according to the design. When there is uncertainty about the proper maintenance for marsh benches, the Stormwater Division should be consulted for guidance and direction.

Vegetated pond buffers are another tool for managing stormwater pollution. They are strips of vegetation that provide a Natural buffer to filter stormwater runoff from developed areas. **Pond buffers should be managed as a meadow (only mowed once per year) or as a forest.** This will help with water quality, shoreline stability, and discourage geese populations.

Facilities with unique landscape features, such as aquatic benches and marshes, should have detailed maintenance directions provided in the design and construction documents, or a qualified professional should be consulted for guidance and direction.

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Figure 3-10 Pond Buffers/Landscaping for Retention Ponds

Figure 3-11 Landscaping for Bioretention

Figure 3-7 Pond Buffers: Don't Mow Zone (DMZ) Sign

(Source: JCC Stormwater Division)

Table 3-7 Landscaping Maintenance Guidelines

Maintenance	Frequency
***Don't Mow Zones (DMZs) are not to be mowed to a height of less than 8 inches**	**Once a year during the Spring**
***Mow grass areas to a height no less than 6 to 8 inches tall. Prevent growth of woody vegetation, and allow for observation and inspection**	Twice per year – once during the Spring and Fall growing season, and once during the Summer
***Prune dead or dying limbs and branches on trees and shrubs**	As needed to maintain healthy vegetation
***Remove and replace dead or dying plants, trees, and shrubs**	As needed to maintain healthy vegetation
***Seed, lime, and fertilize**	As needed in the spring and fall to maintain permanent stabilization
***Manage non-native and invasive species**	As needed to maintain a healthy and diverse plant community
* Bolded items are routine maintenance activities that are critical to the function of the functional components and BMP. Non-bolded items are non-routine maintenance, such as repairs.	

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3.8 ACCESS AND SAFETY DEVICES

Most BMPs are constructed with a stable entrance and path to allow large or heavy equipment access for operations and maintenance. Maintaining these access paths and roads to the original design specifications will facilitate routine inspections and maintenance. Safety devices such as fences, gates, locks, and access hatches are important and are intended to enhance the safety of a structure by limiting unauthorized access to components of the SWMF.

Figure 3-12 BMP Access

Figure 3-13 BMP Safety Fence

(Source: JCC Stormwater Division)

Table 3-8 Access Maintenance Guidelines

Maintenance	Frequency
Check and maintain fences, gates, bollards, and locks	As needed to maintain and limit access
Repair or replace path or road surface	As needed to maintain access
Remove trees growing along perimeter fences	As needed to maintain functionality

3.9 FOREBAY

Some stormwater BMPs are designed with a forebay that holds incoming stormwater runoff to allow sediment to settle out and trash or debris to be captured. It is typically separated from the rest of the facility by a small embankment, riprap, gabion baskets, or other structures. A forebay may be a component in retention, detention, extended-detention, constructed wetlands, and infiltration practices. It enhances pollutant removal capabilities and extends the functional life of the overall BMP by concentrating pollutants in an area that is easily accessible for maintenance.

Because forebays are designed to capture sediment in a confined area, they require maintenance more frequently (every 3-5 years) than a stormwater pond without a forebay (20-25 years). However, the maintenance on a forebay is easier and less expensive and can delay more costly maintenance in the primary treatment area for approximately 20-25 years.

Figure 3-14 Retention Facility, Sediment Forebays

(Source: JCC Stormwater Division)

Table 3-9 Sediment Forebay Maintenance Guidelines

Maintenance	Frequency
***Forebays with an earthen embankment should be stabilized with vegetation**	Stabilize any unstable areas with grass in the spring and fall
Any areas of riprap, gabions, or other concrete structures should be repaired or replaced if displaced, cracked, or failing	As needed to maintain function
***Remove trash and debris**	As needed to maintain function
Remove accumulated sediment.	As needed to maintain storage volume (generally every 3-5 years, or if forebay is more than 50% full)
* Bolded items are routine maintenance activities that are critical to the function of the functional components and BMP. Non-bolded items are non-routine maintenance, such as repairs.	

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3.10 TIMBER WALLS

Timber walls are stormwater structures constructed with timber walls instead of an earthen embankment. These walls can function simply to hold water back, but can also be designed with low flow and high flow weirs just as a riser would. These accommodate the natural land surface as opposed to moving several yards of dirt. Timber walls will typically be at the downstream or outlet side of the facility.

Figure 3-15 Timber wall

(Source: JCC Stormwater Division)

Table 3-10 Timber Wall Maintenance Guidelines

Maintenance	Frequency
Repair loose, damaged, or displaced boards to maintain structural integrity	As needed and within 30 days of discovery
Repair rodent burrows to maintain structural integrity	As needed and within 30 days of discovery
Replace or repair riprap or concrete structures that are displaced or damaged	As needed to maintain functional stabilization
Observe areas of settlement or seepage below and downstream of the dam	As needed to maintain functional stabilization
* Bolded items are routine maintenance activities that are critical to the function of the functional components and BMP. Non-bolded items are non-routine maintenance, such as repairs.	

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3.11 OBSERVATION WELLS, CLEAN OUTS, AND MANHOLE ACCESS FOR UNDERGROUND FACILITIES

Observation wells, clean outs, and manholes are components that may be commonly found in bioretention, sand filters, and infiltration systems. An observation well should be located near the bottom of the facility or underdrain pipe to allow inspections and monitoring. It is important to be sure that the observation wells are not damaged or dislocated. Clean out access is also common for BMP facilities with underdrains. Sometimes, manholes may provide maintenance personnel access to observe or enter an underground chamber for inspections and maintenance. It is important to maintain visibility and sufficient access to an underground facility to allow vacuum trucks or similar equipment to reach the sedimentation chamber, underdrains, and filter bed surface. Underground facilities can be classified as confined space, and James City County has confined space procedures and training for the maintenance workers and inspectors who need to access them.

Both filtration and infiltration BMPs require a drainage or filter bed to serve as a surface or underground storage to infiltrate stormwater into the ground or allow filtration through media to be collected by underdrains. Common materials for the drainage or filter bed include stone, sand, bioengineered media, or other mixed media. Pollutants are removed as the stormwater penetrates through the drainage bed into the underlying soils or as the stormwater is filtered through the media. The rate at which the stormwater moves vertically through the drainage or filter bed may indicate its need for maintenance. The most common maintenance issue for a drainage or filter bed occurs when sediments or other pollutants accumulate, slowing the rate that the stormwater filters through the system. Wells, clean outs, and other access features are critical for inspecting and maintaining drainage to filter beds and underdrains.

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Figure 3-16 Manhole Access

(Source: Stantec Consulting)

Figure 3-17 Observation Well

(Source: JCC Stormwater Division)

Table 3-11 Observation Well, Clean Out, & Manhole Maintenance Guidelines

Maintenance	Frequency
***Keep observation wells vertical and well situated**	As needed to maintain access for observation, monitoring, clean out, and maintenance.
Check and maintain hatches, doors, manholes, caps, locks, and other barriers	As needed to maintain access for inspections and maintenance and to limit access to the public
Keep wells, clean outs, and manhole access clear of obstructions, including trash, debris, sediment, and woody vegetation	As needed to maintain access for observation, monitoring, clean out, and maintenance.
* Bolded items are routine maintenance activities that are critical to the function of the functional components and BMP. Non-bolded items are non-routine maintenance, such as repairs.	

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3.12 MEDIA

Some stormwater BMPs require different types of media that is designed to allow stormwater to infiltrate the ground, or access an underdrain at a designed rate. Stormwater media includes sand, mulch, organic material, or varying sizes of stone. Media is specific to the needs of the site and is designed to meet certain criteria. If sediment, trash, or debris accumulates over the media, the facility may not function properly due to clogging. Observation of stormwater media can be accomplished via an observation well or cleanout. Standing water in a filtration or infiltration facility is a key indicator of clogged media. To maintain or fix clogging issues, rake and remove top 3 inches of media in facility and replace as needed. Herbicides should never be used on media.

Figure 3-18 Media Installation

Figure 3-19 Variable Surface Media

(Source: JCC Stormwater Division)

Table 3-12 Media Maintenance

Maintenance	Frequency
Replace transported media	As needed to maintain coverage
Clean out accumulated sediment	As needed to maintain function

4.0 Stormwater Basins (Pond-Type BMPs)

4.1 DETENTION BASINS (DRY POND)

Detention basins, also known as detention ponds or dry ponds, are primarily designed to hold stormwater runoff temporarily. This period of time is generally less than 12 hours, which allows limited pollutant removal or opportunity for infiltration and evaporation before the stormwater releases through the principal spillway. Detention basins can either be excavated, utilize above ground embankments, or a combination of excavation and fill embankment. The facilities are not designed to hold a permanent pool of water like a retention basin or wet pond. The flow out of the control structure is regulated in order to prevent damage to property and waters downstream of the facility.

A detention pond can also provide flood control by including additional flood detention storage pools at the inlet and outlet of the pond. They can vary greatly in size and appearance in order to meet the requirements on the specific region being treated.

Figure 4-1 Detention Basin

(Source: JCC Stormwater Division)

Table 4-1 Typical Components that may be found in Detention Basins

Functional Components
Earthen Embankment/Dam
Timber Wall Structure
Inlets and Outlets
Principal Spillway
Emergency Spillway
Trash Rack
Energy Dissipater/Outlet Protection
Vegetation/Landscaping
Access
Sediment Forebay

4.1 EXTENDED DETENTION BASIN

An extended detention basin or pond requires the temporary impoundment of stormwater for 24 to 48 hours or more to allow for greater opportunity for pollutant removal, infiltration, and evaporation. This is compared to the detention basin, which is designed to release stormwater more quickly (< 12 hours), hence the designation "extended". The temporary ponding allows more pollutants to settle out in addition to reducing the rate the stormwater is released downstream, providing water quality and quantity control. The extended detention basin is usually dry after storm events are released. An extended detention basin can be enhanced by creating areas with a shallow permanent wet pool planted with marsh or wetlands vegetation to promote further pollutant removal.

Figure 4-2 Extended Detention Basin

(Source: JCC Stormwater Division)

Table 4-2 Typical Components potentially found in Extended Detention Basins

Functional Components
Earthen Embankment
Principal Spillway
Emergency Spillway
Trash Rack
Inlets and Outlets
Energy Dissipater/Outlet Protection
Vegetation/Landscaping
Access
Sediment Forebay
Wetlands and Marsh plants

4.2 RETENTION BASIN

A retention basin or pond (also known as a wet basin or pond) is designed to permanently hold water. The standing water provides better pollutant removal through sediment settling to the bottom of the pond, reduced resuspension of sediment, biological removal of pollutants by algae and aquatic plants, and further opportunity for infiltration and evaporation. By design, the water level should remain constant because "dirty" stormwater enters the pond and displaces "clean" stormwater from previous rain events.

Note that some retention basins include a low level drain for temporary dewatering of the wet storage to allow for inspections or maintenance of the embankment or spillways. Occasionally, a retention basin may be lined with clay or a synthetic liner to retain water in the basin between storms, especially when constructed in highly permeable (sandy) soils.

Figure 4-3 Retention Basin

(Source: JCC Stormwater Division)

Table 4-3 Typical Components of Retention

Functional Components
Earthen Embankment
Principal Spillway
Emergency Spillway
Inlets and Outlets
Trash Rack
Energy Dissipater/Outlet Protection
Vegetation/Landscaping
Access
Sediment Forebay
Wetlands and Marsh Plants

4.3 CONSTRUCTED WETLAND

A constructed wetland is similar to a shallow retention basin or enhanced extended detention basin. The pool is typically less than 18 inches deep and may host a wide variety of vegetation suitable for wetlands. As stormwater flows through a constructed wetland, sediment and pollutants settle to the bottom, pollutants are filtered through vegetation, and are removed via biological processes. The water level should remain constant between storm events to support the wetland vegetation.

Figure 4-4 Constructed Wetlands

(Source: JCC Stormwater Division)

Table 4-4 Typical Components of Constructed Wetlands

Functional Components
Earthen Embankment
Principal Spillway
Emergency Spillway
Inlets and Outlets
Trash Rack
Energy Dissipater/Outlet Protection
Vegetation/Landscaping
Access
Sediment Forebay
Wetlands and Marsh Plants

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5.0 Filtration and Infiltration

5.1 BIORETENTION FACILITIES AND RAIN GARDENS

A bioretention facility or rain garden is a depressed landscape area that consists of a shallow basin for surface ponding. The facility usually includes a planting medium of engineered soil mixtures with a gravel sump underneath, and a mulch application on the surface. The facility also includes specially selected landscape plants installed within the facility, providing for biological and physiochemical treatment of stormwater. The landscaping and vegetation is strategically selected for maximum pollutant removal and survival in varying soil moisture conditions.

In bioretention facilities and rain gardens, water exits the planting medium by infiltrating to the surrounding soil and groundwater table. In some instances, the surrounding soils are generally unsuitable for infiltration, so the filtered stormwater must be collected by an underdrain. The underdrain system generally consists of a perforated pipe protected by a pea gravel filter to collect and convey treated stormwater.

Bioretention facilities range in size, and typically look like a small garden. These facilities are designed to hold water between 6 and 12 inches deep. Standing water in the ponding area and saturation of the engineered soil media should disappear in 24 to 48 hours, if the facility is functioning properly. Some gardens may be designed to provide some retention of stormwater in the aggregate sump below the underdrain to create saturated conditions for enhanced removal of nitrogen, so it is important to consult design documents to determine if water standing in aggregate sump more than 48 hours after a storm event is acceptable.

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Figure 5-1 Bioretention Filter

(Source: JCC Stormwater Division)

Table 5-1 Typical Components of a Bioretention Facility/Rain Garden

Functional Components
Earthen Embankment
Media
Principal Spillway
Inlets and Outlets
Vegetation/Landscaping
Access
Observation Well or Clean Out

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5.2 INFILTRATION

Infiltration practices provide better runoff controls than any other BMP. They capture and store runoff to allow it to infiltrate into the surrounding soil. Biological, chemical and physical processes in the soil remove pollutants to prevent groundwater contamination. The runoff may flow through pretreatment practices that trap sediment and other pollutants before they reach the infiltration practice. The captured runoff can be stored in underground vaults, trenches, open basins, or over-sized pipe systems to allow for infiltration before the next storm event.

Figure 5-2 Infiltration Basin

(Source: JCC Stormwater Division)

Table 5-2 Typical Components of Infiltration

Functional Components
Earthen Embankment
Principal Spillway
Stone, Sand, or Media
Outlet and Energy Dissipater
Access
Observation Well, Clean Out, or Manhole Access

5.3 DRY SWALE

A dry swale is designed to reduce and filter the flow of stormwater by infiltrating it into the underlying soil. It utilizes an engineered soil media similar to that used in bioretention practices. The media may be permeable enough for infiltration; however dry swales may also have an underdrain within a gravel layer to convey treated stormwater back to the storm sewer system. Dry swales may vary in appearance from a simple grass channel to an elaborately landscaped channel with more vegetation.

Figure 5-3 Dry Swale

(Source: JCC Stormwater Division)

Table 5-3 Typical Components of a Dry Swale

Functional Components
Principal Spillway
Inlets
Stone, Sand, or Media
Underdrain
Vegetation/Landscaping
Observation Well or Clean Out
Pretreatment

5.4 WET SWALE

A wet swale acts as a conveyance (transport) system, and may provide runoff filtering and treatment. It appears as a cross between a dry swale and a wet pond. They are typically found near shallow groundwater. The vegetation provides sediment settling and biological treatment. A wet swale may have an underdrain for additional storage.

Figure 5-4 Wet Swale

(Source: VSWMH)

Table 5-4 Typical Components of a Wet Swale

Functional Components
Vegetation/Landscaping

5.5 UNDERGROUND STORAGE

Underground stormwater storage primarily treats stormwater quantity, similar to a detention or extended detention basin; however some underground storage devices may be enhanced with stormwater quality features, such as filters and infiltration. The stormwater enters the system through a catch basin or inlet structure and flows to a series of chambers, vaults, or over-sized pipes for temporary storage. The low-flow outlet structure is sized to release the stormwater at a slower rate to protect against flooding and stream channel erosion downstream of the BMP. Materials may vary from concrete, steel, or plastic.

Figure 5-5 Underground Storage

(Source: JCC Stormwater Division)

Table 5-5 Typical Components of Underground Storage

Functional Components
Principal Spillway
Trash Guard
Inlets and Outlets
Sediment Chamber
Observation Well, Clean Out, or Manhole Access

6.0 Manufactured BMP Types

6.1 PERMEABLE PAVEMENT

Permeable pavement allows stormwater runoff to filter through the voids in the pavement surface. It can include porous concrete, asphalt, or pavers. The runoff is stored in a gravel bed beneath the permeable pavement for infiltration to the surrounding soil. If the soil under the gravel bed has low infiltration rates, an underdrain system is used to return the stormwater to the storm sewer system, usually after detaining the runoff to control flow rates.

Figure 6-1 Permeable Paverment

(Source: JCC Stormwater Division)

Table 6-1 Functional Components of Permeable Pavement

Functional Components
Underdrain
Observation Well, Clean Out, or Manhole Access

6.2 TREE BOX FILTER

Tree box filters utilize the same treatment methods as a bioretention area. They are trees planted in a container with soil and mulch engineered for stormwater pollutant and sediment removal. The stormwater is directed to the tree box, where it is filtered through the vegetation and soil before entering the underground storage.

Figure 6-2 Tree Box Filter

(Source: Stantec Consulting)

Table 6-2 Typical Components of a Tree Box Filter

Functional Components
Underdrain
Vegetation/Landscaping
Observation Well or Clean Out

6.3 HYDRODYNAMIC SEPARATORS (OIL AND WATER SEPARATORS)

Hydrodynamic separators remove sediment and other pollutants from stormwater by physical separation before entering the storm sewer system. The inflow of stormwater causes a swirl action that allows heavy particles to settle to the bottom and lighter materials to float where they can be easily captured. They may be manufactured in many different sizes to fit in conventional manholes.

Figure 6-3 Hydrodynamic Separator

(Source: Stantec Consulting)

Table 6-3 Typical Components of a Hydrodynamic Separator

Functional Components
Observation Well, Clean Out, or Manhole Access
Inlets or Outlets

7.0 Inspections

Periodic inspection of Stormwater (BMP) facilities ensures they are functioning as designed and constructed. Inspections also verify that routine and preventative maintenance is being conducted, and provide an opportunity to identify non-routine maintenance needs. Table 8-1 provides a recommended inspection schedule for stormwater BMP facilities in James City County.

Table 7-1 Inspection Schedule

Type of Inspection	Minimum Frequency of Inspection
Technical	Annually
Event Based	After 10 yr storm

7.1 TECHNICAL INSPECTIONS

Technical inspections are thorough inspections that should be conducted at least annually. During technical inspections, a Technical Inspection Checklist should be completed (see Appendix B for Technical Inspection Checklists). In James City County, technical inspection checklists are maintained in electronic format and provide the same level of information and detail.

The purpose of a technical inspection is to determine if routine or non-routine maintenance is required. A technical inspection should note the accumulation of sediment or other pollutants in the facility, the existence of insect or odor problems, dead or dying vegetation, visible erosion, rodent burrowing, embankment settling, accumulation of trash and debris, and the functionality of structural components such as embankments and spillways. As a facility matures, the technical inspection may include investigation of mulch, engineered soils, filter media, or vegetation to determine if it is time to replace these features in a facility. If a technical inspection reveals critical deficiencies that require extraordinary maintenance activities, a follow up inspection should be scheduled immediately to determine what actions need to be taken to address the noted deficiencies.

7.2 EVENT BASED INSPECTIONS

Non-routine, event based inspections should follow extreme events, such as large, infrequent storms (10 year storm). The purpose is to identify damage that has occurred from an extreme event or the aging and deterioration of a facility and its functional components. An event based inspection should be conducted by a qualified professional to determine what actions should be taken to address the deficiencies through non-routine maintenance activities. The qualified professional conducting the technical inspection should record the findings in a written document and provide the documentation to the James City County Stormwater Division for action and recordkeeping.

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For the purpose of this inspection and maintenance program, a large, infrequent storm that triggers a technical inspection is defined by total rainfall depths summarized in Table 7-2 and based on a range of storm durations.

Table 7-2 Storm Events Triggering an Event Based Inspection

10-Year Storm Duration	Total Precipitation Depth
2-hours	2.97 inches
6-hours	3.88 inches
12-hours	4.66 inches
24-hours	5.52 inches

(Source: NOAA Atlas 14)

7.3 BMP CONDITION RATING SYSTEM

The following scale is currently used by James City County to grade BMPs based on functionality. Each structure should be rated on a scale from 1 to 4 during maintenance and technical inspections. The technical inspection checklists in Appendix C provide a place to record the BMP Condition based upon the rating system. Condition ratings are useful for prioritizing and scheduling stormwater maintenance activities and follow-up inspections. These condition ratings correspond with the following definitions:

Condition 1: Adequate. Structure/Facility is not in need of maintenance and is operating as designed/intended. Continue routine maintenance.

Condition 2: Routine Maintenance Needed. Operates to design specifications. Should be scheduled for future inspection. Preventative or routine maintenance required.

Condition 3: Non-routine Maintenance Needed. Should be scheduled for a repair prior to the next annual inspection.

Condition 4: Urgent Repair(s) needed. Structurally/Functionally Deficient. Schedule engineering analysis and/or repair prior to next annual inspection.

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8.0 Maintenance

8.1 ROUTINE MAINTENANCE

Routine maintenance is generally defined as: landscaping, cosmetic and aesthetic maintenance such as tree and shrub care; wetland plant care; seeding and mulching; slope stabilization; grass mowing; pruning; filling and repair of slope gully erosion; animal control due to nuisance rodents; removal of undesirable trees and invasive vegetation; minor sediment cleaning and general care taking in accordance with any approved maintenance and operation plans for the facility.

Routine maintenance also includes removal of debris and other matter to the best of the Owner's ability where such debris or matter has slightly impeded or threatens to impede proper functioning or free flow of base or storm flow.

Routine maintenance satisfies conditions 1 and 2 from an inspection.

8.2 NON-ROUTINE MAINTENANCE

Non-routine maintenance is generally defined as: the repair or replacement of necessary components that have partially or completely failed and directly impair the BMP facility from performing its proper control or treatment function; impose an immediate or potential safety hazard; impede base or storm flows; create flooding or erosion dangers to surrounding or downstream properties; or threaten the public's health, safety or welfare. Non-routine maintenance generally applies to essential (vital) interior structural and stormwater management components including embankments; risers and outlet barrels; trash racks and anti-vortex devices; emergency spillways; pretreatment forebays; seepage controls; drains; water quality or quantity control devices including orifices and weirs; outlet protections or energy dissipators; bank or shoreline stabilization; major sediment removal (dredging); and any other special operational structures.

Applicable components are usually interior to the physical functional boundary and essential to the proper control or treatment function of the SWM/BMP facility.

Non-routine maintenance is a stipulation of conditions 3 and 4 from an inspection.

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Appendix A Summary of BMPs in James City County

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Appendix B Technical Inspection Checklist Templates

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Appendix C Maintenance Log Template

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Appendix C-6

Exhibits for Minimum Control Measure #6 – Pollution Prevention/Good Housekeeping for Municipal Operations

June 1, 2014

The James City County Pollution Prevention and Good Housekeeping Employee Training Program is an integrated program, aiming to efficiently and effectively equip employees to be good citizens with respect to County waterways and the Chesapeake Bay. The program is closely modelled on the requirements of the County's MS4 Permit, Number VAR040037.

Training requirements are regulated through the James City County Administrative Regulation on Pollution Prevention and Good Housekeeping for Municipal Facilities (Attachment A). The Stormwater Division, as the permit administrator, tracks the training, topics, schedule, attendees, etc. The Division also secures outside tools and resources to ensure that training is appropriate and high quality.

Training consists of a broad mixture of activities that provide employees with the specific information needed for the position in which the employee operates. The training requirements are broken into tiers, each tier more specific and prescriptive. The training tiers are outlined in Table 1, Training Tiers, Topics by Tier and Schedule. The departments or agencies, with assistance from the Stormwater Division, will prepare goals for training using their organization's existing procedures to ensure competency. Table 2, Sample Training Verification, is an example used by the James City Service Authority. The departmental training goals will reflect the identified training topics from Table 1 and be specific for the sites and facilities around which the employees work.

Training activities will be incorporated into new employee orientation, in-service training and skills refresher courses offered by each department or agency. Documentation of training activities is maintained for three years from the training date and consists of a list of the training topics or agenda, an attendance sign-in sheet and any handouts provided during the training. For employees with regulated certifications, documentation of the certification suffices for training purposes.

Table 1: Training Tiers, Topics by Tier and Schedule

Tier	Employee Group	Training Topics	Tools	Schedule
1	All Employees	• Principles of stormwater pollution prevention, • elimination of illegal discharges, • good housekeeping and related best management practices, including vehicle fueling, • employees' obligation to stewardship in accordance with the County's Values, • training program requirements	Administrative Regulation (AR) (written policy and directive)	Annual Review of AR by Supervisor – FY15-FY18 (PY2 through PY5)
2	Employees working or managing County Facilities: Fire, Police, Parks & Recreation, General Services, School Facilities	• detecting and reporting Illegal discharges • Spill control and response, • vehicle and equipment maintenance, • vehicle and equipment washing, • materials management, • waste management, • facility maintenance, • parking lot maintenance, • storm drain system cleaning, • landscaping and grounds maintenance, • working over or near surface waters	• Standard Operating Procedures • Regional Stormwater Program Training Materials • Training videos • In-house training materials as needed	FY15(PY2), FY17(PY4)
3	Employees working at sites with certified Nutrient Management Plans (NMPs)	• NMP basics • Special procedures for materials handling • Spill control and response – advanced • Facility-specific stormwater management measures and practices	• Site-specific NMPs • In-house training materials as needed	FY15(PY2), FY17(PY4)
4	Employees working at sites with SWPPPs and/or SPCC plans	• SWPPP basics • SPCC plan basics • Special procedures for materials handling • Spill control and response – advanced • Facility-specific stormwater management measures and practices	• Site-specific SWPPPs • Site-specific SPCC plans • Regional Stormwater Program Training Materials as available • Training videos as available	FY 16(PY3), FY18(PY5)
5	Employees with regulated certifications (Grounds, Engineering & Resource Protection, Fire Department, Stormwater)	• Pesticide applicators • Hazmat certifications • ESC certifications • Stormwater certifications	• Agency provided training programs and certification exams	As required by regulator

Definitions: PY – permit year

Table 2: Sample Training Verification

NOTE: Each department or agency will use their organization's existing procedures to ensure competency.

The supervisor, or a designated representative, must authenticate the following knowledge. When YES is entered, the evaluator is signifying the individual has met expectations.

Employee:_____ Date of Evaluation:_____

Item	Required Knowledge	Adequate (yes or no)
1	Understands basics of Stormwater Pollution Prevention Plan, to include Background & Overview	
2	Knows the appropriate SWPPP Coordinator and Team	
3	Understands the Stormwater Drainage System at the Tewning Road complex	
4	Can identify potential stormwater contaminants & significant material inventory	
5	Knows vehicle and equipment washing and maintenance steps that will prevent pollution from entering the stormwater system	
6	Understands reasoning behind equipment staging and storage requirements	
7	Competent with operations in the fueling area, to include spill prevention and cleanup	
8	Knows pollution prevention requirements concerning outdoor material storage and dumpsters	
9	Understands the harm non-stormwater discharges can cause, and how to better control them	
10	Can explain good housekeeping and related best management practices	
11	Knows basics for management of stormwater runoff	
12	Can explain good spill prevention techniques to include the relayed response actions	

Signature: _____ Date:_____

Utility Operations Superintendent

		REVISED DATE:
JAMES CITY COUNTY ADMINISTRATIVE REGULATION OPERATING PROCEDURES	**NUMBER:** COAD AR 28	**EFFECTIVE DATE:** September 4, 2014
	TITLE: Pollution Prevention Program	

PURPOSE: The purpose of the James City County Pollution Prevention Program is to provide guidelines for preventing pollution of storm runoff from County facilities in order to prevent pollution of County waterways.

APPLIES TO: All James City County, James City Service Authority and Williamsburg-James City County Public Schools employees working within James City County and contractors or vendors who manage these owned and/or operated facilities.

POLICY

I. Purpose

James City County is permitted by the Virginia Department of Environmental Quality, under the federal Clean Water Act, to discharge stormwater to waterways in the County. The permit, known as the Municipal Separate Storm Sewer System (MS4) Permit, requires James City County and its employees and agencies to take specific actions to reduce runoff pollution. These actions are described in this Administrative Regulation.

II. Scope

The implementation of this Program is the joint responsibility of all employees and contractors, and mirrors the County Values of Integrity, Collaboration, Excellence and Stewardship. The departments and agencies will incorporate pollution prevention and good housekeeping measures into all appropriate standard operating procedures. This joint effort to reduce stormwater pollution through pollution prevention activities will be practiced by all employees or agents through collaborative decision-making, partnerships and communications in all of James City County's government operations.

III. Objective

The objective is to reduce or prevent pollution in storm runoff from daily operations by:

A. Preventing illegal discharges of non-stormwater to the stormwater system
B. Properly disposing of all solid and liquid wastes.
C. Using best practices to fuel County vehicles to reduce spills and exposure to stormwater.
D. Using best practices to store materials and equipment to reduce contact with stormwater.
E. Implementing site specific Stormwater Pollution Prevention Plans (SWPPPs) and Spill Prevention, Control and Countermeasure (SPCC) plans as appropriate.
F. Implementing a County-wide training program to accomplish the above objectives.

IV. Organization

The County's Pollution Prevention Program will be administered through the Pollution Prevention Team, comprised of representatives from each County department or agency that undertakes vulnerable outside activities including, but not limited to, General Services Divisions, Fire and Emergency Management, Police, James City Service Authority, Parks and Recreation and Williamsburg-James City County Public Schools.

A. *Stormwater Director*
The Stormwater Director reports directly to the Director of General Services and shall have overall responsibility for overseeing and coordinating the Pollution Prevention Program.

B. *Pollution Prevention Team*
The Stormwater Director, or designee, will assemble a Pollution Prevention Team comprised of representatives from affected departments. The purpose of the Team is to advise the Stormwater Director on the operation of the Pollution Prevention Program and to provide assistance on specific tasks when needed. The Pollution Prevention Team will also share information about best practices for good housekeeping with their respective departments. They shall recommend and implement pollution prevention projects and practices and shall provide necessary information for reporting from their respective areas. The Pollution Prevention Team will meet at least twice during each fiscal year. Additional meetings may be called by the Stormwater Director as needed. This partnership is vital to successfully implementing the Pollution Prevention Program and complying with the County's MS4 permit obligations.

V. Implementation

A. The Department and Agency Directors will implement the Pollution Prevention Employee Training Program in accordance with the training tiers defined in Attachment A. Training activities will be incorporated into new employee orientation, in-service training and refresher courses offered by each department or agency. Documentation of training activities will be maintained for three years from the training date and will consist of a list of the training topics or agenda, an attendance sign-in sheet and any handouts provided during the training. For employees with State or federally regulated certifications, documentation of the certification will suffice for training purposes.

B. The Stormwater Division will assist the departments or agencies in the preparation of training goals such as those shown in Attachment B. The departmental training goals will reflect the identified training topics from Attachment A and be specific for the sites and facilities around which the employees work. The Division will track the training, topics, schedule, attendees, etc. and secure tools and resources to ensure that training is appropriate and high quality.

C. The Department and Agency Directors will work with their Pollution Prevention Team representative(s), General Services, and the Stormwater Director to make improvements to their department procedures. The General Services Department is responsible for installing pollution prevention measures; however the Department and Agency Directors are accountable for ensuring that employee behaviors are consistent with pollution prevention best practices.

D. The Stormwater Division will perform routine pollution prevention audits of facilities with SWPPPS and SPCC plans and will communicate the results to the appropriate personnel. The Stormwater Director will provide regular reports to the Pollution Prevention Team.

E. All actions undertaken as part of the Pollution Prevention Program will be reported on an annual basis to the Department of Environmental Quality as part of the County's MS4 reporting.

F. All employees, regardless of work location, will follow the following guidelines contained in Attachment C at all times.

VI. Reporting

The Stormwater Director shall prepare the MS4 annual report documenting all efforts to prevent pollution of storm runoff from County activities. In accordance with the MS4 permit, the report shall be posted on the County website to assure the public that the County is in compliance with State and federal law.

Attachment A

Pollution Prevention Program Training Tiers and Topics

Tier	Employee Group	Training Topics	Tools
1	All Employees	• Principles of stormwater pollution prevention • Elimination of illegal discharges • Good housekeeping and related best management practices, including vehicle fueling • Employees' obligation to stewardship in accordance with the County's Values • Training program requirements	Administrative Regulation (AR) (written policy and directive) and Attachment C handout
2	Employees working or managing County Facilities: Fire, Police, Parks, General Services, School Facilities	• Detecting and reporting Illegal discharges • Spill control and response • Vehicle and equipment maintenance • Vehicle and equipment washing • Materials management • Waste management • Facility maintenance • Parking lot maintenance • Storm drain system cleaning • Landscaping and grounds maintenance • Working over or near surface waters	• Standard Operating Procedures • Regional Stormwater Program Training Materials • Training videos • In-house training materials as needed
3	Employees working at sites with certified Nutrient Management Plans (NMPs)	• NMP basics • Special procedures for materials handling • Spill control and response – advanced • Facility-specific stormwater management measures and practices	• Site-specific NMPs • In-house training materials as needed
4	Employees working at sites with SWPPPs and/or SPCC plans	• SWPPP basics • SPCC plan basics • Special procedures for materials handling • Spill control and response – advanced • Facility-specific stormwater management measures and practices	• Site-specific SWPPPs • Site-specific SPCC plans • Regional Stormwater Program Training Materials as available • Training videos as available
5	Employees with State or federal regulated certifications (Grounds, Engineering & Resource Protection, Fire Department, Stormwater)	• Pesticide applicators • Hazmat certifications • ESC certifications • Stormwater certifications	• Agency provided training programs and certification exams

Attachment B

Sample JCSA Training Goals

Item	Required Knowledge	Adequate (yes or no)
1	Understands basics of Stormwater Pollution Prevention Plan, to include Background & Overview	
2	Knows the appropriate SWPPP Coordinator and Team	
3	Understands the Stormwater Drainage System at the Tewning Road complex	
4	Can identify potential stormwater contaminants & significant material inventory	
5	Knows vehicle and equipment washing and maintenance steps that will prevent pollution from entering the stormwater system	
6	Understands reasoning behind equipment staging and storage requirements	
7	Competent with operations in the fueling area, to include spill prevention and cleanup	
8	Knows pollution prevention requirements concerning outdoor material storage and dumpsters	
9	Understands the harm non-stormwater discharges can cause, and how to better control them	
10	Can explain good housekeeping and related best management practices	
11	Knows basics for management of stormwater runoff	
12	Can explain good spill prevention techniques to include the relayed response actions	

Attachment C

Individual Actions to be Followed by All Employees, Contractors and Vendors

1. **Know where the storm runoff goes:** Rain water gathers in ditches, drains and pipes and ultimately ends up in County waterways. Runoff does not go to a wastewater treatment plant. Anything rain water encounters on its way to a lake or river will be carried along with the water. Trash, leaves, cigarette butts and more end up in our streams. Citizens use waterways for swimming, fishing and boating. No one wants to fish or boat with trash.
2. **It's illegal to dump:** Chapter 18A of the James City County Code makes it illegal to put anything in a storm drain that isn't storm runoff. Use restrooms, trash bins or dumpsters to properly dispose of trash and leftover liquids. Remember - *Only Rain In The Drain*.
3. **Use best practices when fueling:** If you regularly drive a County vehicle, learn how to use the fuel pumps in order to avoid spills. Fueling instructions are placed in each vehicle when the state inspection is performed. Read them and use them.
4. **Act quickly to contain spills:** If you experience a spill at a County fuel site, open the spill kit and use the materials to contain the spill and keep it from migrating. Call the number at the site and help will come.
5. **Be a good steward:** Citizens expect County employees, contractors and vendors to treat public resources in a respectful manner. We have an obligation to be good stewards of the County's resources in accordance with the County values of integrity, collaboration, excellence and stewardship.

Date	Training Materials	Training Topic	# Attended	Personnel Attended
3/18/2014	BMP Workshop	Rain Gardens/Native Plants, BMP Structures and Maintenance, Pollution Prevention	31	General Services Staff/Grounds Crew
4/30/2014	Raincheck Video and Quiz	Pollution Prevention	24	General Services Staff/Grounds Crew
6/16/2014	Raincheck Video and Quiz	Pollution Prevention	10	General Services Staff

James City Service Authority

Standard Operating Procedures for:

Spill Prevention

Purpose: to prevent contamination of stormwater by using proper storage techniques, proper handling techniques, and proper disposal of contained stormwater.

1. Monitor equipment and material storage areas checking for: fluid leaks, uncovered containers, and deteriorating labels and/or containers, and correct any problems that are noted.
   Frequency- daily
2. Inspect secondary containment systems (i.e. oil, fuel storage tanks) as necessary, and empty them as necessary.
   Frequency- weekly
3. Close unneeded floor drains.
   Frequency- when identified or building is modified
4. Monitor storm drain inlets at Tewning Road for excessive amounts of sediment and contaminants. Clean or replace storm drain inlet filters as necessary.
   Frequency – monthly
5. Never leave vehicles/equipment unattended while refueling.
   Frequency - continuous
6. Document any/all inspection activities in the reporting system.
   All inspection information is to be maintained in the Hansen Information Management System (IMS)

Landscaping and Lawn Care

Purpose: to prevent contamination of stormwater by minimizing contact with fertilizer and by using innovative landscaping techniques. JCSA contracts all vegetation management – there are no chemicals applied for fertilization or weed control.

1. Plant vegetation that needs minimal amounts of care (i.e. water and fertilizer) – use WaterSmart techniques.
   Frequency – at time of initial landscaping
2. Implement landscaping techniques that minimize water usage – use WaterSmart techniques.
   Frequency – at time of initial landscaping
3. Water just enough to supplement rainfall – use drip irrigation techniques**.**
   Frequency - always
4. Mow with blades set high, leave grass clippings on turf areas.
   Frequency – always

Equipment Maintenance

Purpose: to prevent contamination of stormwater by using proper maintenance techniques, proper maintenance locations, and retrofitting infrastructure.

1. Conduct maintenance work indoors – seal floor drain systems if present.
   Frequency – continuous, seal at time of construction/replacement or when identified
2. If work is performed outside, protect stormwater drainage conveyances from spills.
   Frequency – continuous
3. Clean up spilled materials immediately, using dry methods (absorbents). When conducting maintenance at operational facilities, any materials spilled would be indoors.
   Frequency – continuous
4. Install oil/water separators where necessary.
   Frequency – at time of construction

Vehicle and Equipment Washing

Purpose: to prevent contamination of stormwater by using proper washing techniques, proper washing locations, and proper disposal of wash water.

1. Wash all vehicles and equipment at the Tewning Road facility wash rack. The wastewater from the wash rack flows to an oil/water separator with pre-treatment provided by a storm drain insert.
   Frequency – continuous
2. Close unneeded floor drains.
   Frequency – at time of construction/modification or when identified
3. Inspect oil/water separator at wash rack periodically to determine maintenance needs.
   Frequency– once/year
4. Wash all vehicles and equipment at the Tewning Road facility wash rack. The wastewater from the wash rack flows to an oil/water separator with pre-treatment provided by a storm drain filter.
   Frequency – continuous
5. Document any/all inspection activities in reporting system.
   All inspection information is to be maintained in the Hansen Information Management System (IMS)

Pavement Maintenance

Purpose: to prevent contamination of stormwater as it flows over debris that is deposited on access roads

1. Clean all fluid leaks immediately.
   Frequency – always
2. Maintain roadside vegetation – all vegetation is maintained under contract and any debris that is generated is removed from the property. No pesticides or fertilizers are to be used.
   Frequency – always

Alternative Discharge Options for Chlorinated Water

Purpose: to prevent contamination of stormwater that may come into contact with treated waters from water tanks

1. Prior to discharge, allow disinfectant to dissipate, or dechlorinate. The target residual is 0.2 ppm or less.
   Frequency – as needed
2. Discharge the water at a slow rate to a vegetated area so that it can be filtered and absorbed, not to a surface water, storm sewer, or ditch where it can potentially harm aquatic life.
   Frequency - as needed
3. Discharge during dry weather conditions only.
   Frequency - as needed

Hazardous and Waste Materials Management

Purpose: to prevent contamination of stormwater by properly storing, handling, and disposing of hazardous and waste materials

1. Store all materials/wastes indoors in closed, labeled containers. If outside storage is necessary, the storage area will be sheltered from the weather.
   Frequency – continuous
2. Designate storage areas away from floor drains (if inside) and storm drain inlets (if outside).
   Frequency – continuous
3. Reduce stocks of materials where viable - use “first in/first out” management techniques.
   Frequency – as needed
4. Use least toxic materials – used organic based materials if possible.
   Frequency - continuous
5. Install secondary containment devices where appropriate.
   Frequency– at time of construction
6. Recycle/dispose of materials properly.
   Frequency – continuous
7. Do not mix dissimilar wastes in the same containers.
   Frequency - continuous
8. Follow procedures contained in the JCSA Hazard Communication Plan to ensure safe handling of all chemicals and hazardous materials
   Frequency – continuous
9. Inspect storage containers checking for: fluid leaks, uncovered containers, and deteriorating labels and/or containers, and correct any problems that are noted.
   Frequency- daily

Operational By Products/Wastes

Purpose: to prevent contamination of stormwater by preventing improper disposal, and by properly storing, handling, and disposing of facility generated and wastes

FOR FACILITY GENERATED WASTES:

1. Instruct all staff to recycle any waste oils/fluids at Fleet Maintenance. Inform the utility operations administrator if new wastes are generated that cannot be recycled at Fleet and determine proper handling and disposal procedures.
   Frequency – initially, followed by annual reviews/updates

FOR JCSA AREAS THAT ARE SUSCEPTIBLE TO ILLEGAL DUMPING:

1. Post/maintain "NO DUMPING" signs, where possible, erect barriers to prevent access, illuminate area at night.
   Frequency – as needed
2. Maintain areas/remove illegally dumped trash/debris after reporting to police.
   Frequency – as needed
3. Document any/all inspection activities in the Hansen IMS reporting system.

WJCC Bus Maintenance Facility

Standard Operating Procedures for:

Spill Prevention

Purpose: to prevent contamination of stormwater by using proper storage techniques, proper handling techniques, and proper disposal of contaminated storm water.

1. Monitor equipment storage areas, materials storage areas, and waste storage areas checking for fluid leaks, uncovered containers, and deteriorating labels and/or containers, and correct any problems that are noted.
   Frequency- daily
2. Inspect secondary containment systems (i.e. waste oil storage tanks) and empty them as necessary.
   Frequency- monthly
3. Inspect oil/water separators at the Bus Maintenance Facility periodically to determine maintenance needs. Pump out separator as needed with a minimum frequency of once per quarter.
   Frequency – monthly inspection/quarterly pumpout
4. Protect all stormwater drainage inlets with filters to address any spills from maintenance or fueling activities. Monitor filters for excessive sediment and contaminants. Clean or replace filters as needed.
   Frequency – inspect monthly/replace as needed
5. Never leave vehicles/equipment unattended while refueling. Install signage at all fueling sites to alert users to this policy/procedure.
   Frequency - continuous
6. Maintain spill kits at all fueling stations. Install signage to alert users to the proper procedure to follow when a spill occurs.
   Frequency - continuous
7. Monitor fuel and oil deliveries to prevent or contain accidental discharge.
   Frequency - continuous
8. Clean up spilled materials immediately using dry methods (absorbents).
   Frequency- continuous
9. Monitor floor drains for excessive amounts of contaminants, and clean out as necessary.
   Frequency – monthly
10. Document any/all inspection activities on the proper forms

Vehicle and Equipment Washing

Purpose: to prevent contamination of stormwater by using proper washing techniques, proper washing locations, and proper disposal of wash water

1. A wash rack is present in the Bus Maintenance Garage. The wastewater from the wash rack drain flows first into a floor drain inlet sump and then into an oil/water separator. Inspect and clean the sump regularly.
   Frequency – weekly inspection/clean out monthly
2. All washing of equipment or vehicles is to occur at the wash rack or an offsite, commercial facility.
   Frequency – continuous
3. Equip hoses with automatic shutoff devices and spray nozzle.
   Frequency – continuous
4. Document any/all inspection activities on the proper forms.

Vehicle and Equipment Maintenance

Purpose: to prevent contamination of stormwater by using proper maintenance techniques, proper maintenance locations, and retrofitting infrastructure

1. Conduct maintenance work indoors. Inspect trench floor drains periodically to determine maintenance needs.
    Frequency – inspect weekly
2. Clean up spilled materials immediately, using dry methods (absorbents).
    Frequency – continuous
3. An oil/water separator is in place at the discharge point of the existing floor drain system in the Bus Maintenance Garage and at the fueling facility. Inspect the separators periodically and pump them out as needed with a minimum frequency of once per quarter.
    Frequency – monthly inspection/quarterly pumpout
4. Document any/all inspection activities on the proper forms.

Hazardous and Waste Materials Management

Purpose: to prevent contamination of stormwater by properly storing, handling, and disposing of hazardous and waste materials

1. Store all materials/wastes in closed, labeled containers. If outside storage is necessary, the storage area will be sheltered from the weather.
    Frequency – continuous
2. Designate storage areas away from floor drains (if inside) and storm receivers (if outside). Maintain supply of dry absorbents in storage area for use in containing any spills.
    Frequency – continuous
3. Maintain the pretreatment system (oil/water separator) where a potential exists for petroleum products to enter floor drains. Inspect the separator periodically and pump out separator as needed with a minimum frequency of once per quarter.
    Frequency – inspect monthly/pumpout as needed or at least quarterly
4. Reduce stocks of materials where viable - use “first in/first out” management techniques. All materials are stored inside.
    Frequency – continuous
5. Use least toxic materials.
    Frequency - continuous
6. Install secondary containment devices where appropriate.
    Frequency – at time of construction/when identified
7. Recycle/dispose of materials properly. Materials stored for disposal by contractor.
    Frequency – continuous
8. Do not mix dissimilar wastes in the same containers.
    Frequency - continuous
9. Document any/all inspection activities on the proper forms.

Operational By Products/Wastes

Purpose: to prevent contamination of stormwater by preventing improper disposal, and by properly storing, handling, and disposing of facility generated and wastes

FOR FACILITY GENERATED WASTES:

1. Develop a list of wastes, with associated procedures for handling/storage/recycling/disposal and provide to staff. Instruct all staff to adhere to this information, and to inform the Shop Foreman of WJCC Schools if new wastes are generated.

   Frequency – initially, with annual reviews/updates

2. Secure the facility to prevent access (fence/lock gates).

   Frequency – at close of business

INSPECTION AND DOCUMENTATION NEEDS

Bus Maintenance Garage

Activity	Frequency
Inspect Secondary Containment Systems	Monthly
Empty Secondary Containment Systems	As needed
Inspect Oil/Water Separator	Monthly
Pump Oil/Water Separator	As needed but at least quarterly
Inspect floor drains	Monthly
Clean floor drains	As needed
Inspect Trench floor drains	Weekly
Clean Trench floor drains	As needed
Inspect Storm Drain filters	Monthly
Replace Storm Drain filters	As needed
Inspect Vehicle Wash Rack Floor Drain Sump	Weekly
Clean out Vehicle Wash Rack Floor Drain Sump	Monthly

General Services

Standard Operating Procedures for:

Spill Prevention

Purpose: to prevent contamination of stormwater by using proper storage techniques, proper handling techniques, and proper disposal of contaminated storm water.

1. Monitor equipment storage areas, materials storage areas, and waste storage areas, checking for: fluid leaks, uncovered containers, and deteriorating labels and/or containers, and correct any problems that are noted.
    Frequency- daily
2. Inspect secondary containment systems (i.e. oil, fuel storage tanks) as necessary, and empty them as necessary.
    Frequency- monthly
3. Inspect oil/water separator at the Fleet Maintenance Garage periodically to determine maintenance needs. Pump out separator as needed with a minimum frequency of once per year.
    Frequency – monthly inspection/annual pumpout
4. Clean up spilled materials immediately using dry methods (absorbents).
    Frequency- continuous
5. Monitor floor drains for excessive amounts of contaminants, and clean out as necessary.
    Frequency - monthly
6. Document any/all inspection activities on the proper forms

Landscaping and Lawn Care

Purpose: to prevent contamination of stormwater by minimizing contact with fertilizer and by using innovative landscaping techniques

1. Plant vegetation that needs minimal amounts of care (i.e. water, fertilizer).
    Frequency – when plant material requires replacement
2. Implement landscaping techniques that minimize water usage.
    Frequency – when plant material requires replacement
3. Water just enough to supplement rainfall. Irrigation is limited to 1 inch per week and rainfall is monitored to verify need for irrigation. Moisture sensors are available on some of the newer fields.
    Frequency - always
4. Minimize fertilizer application, follow nutrient management plan recommendations.
    Frequency – always
5. Mow with blades set high, leave grass clippings on turf areas.
    Frequency – always

Vehicle and Equipment Maintenance

Purpose: to prevent contamination of stormwater by using proper maintenance techniques, proper maintenance locations, and retrofitting infrastructure

1. Conduct maintenance work indoors. Inspect trench floor drain periodically to determine maintenance needs.
   Frequency – weekly
2. If work must be performed outside, protect all stormwater drainage inlets with filters to address any spills.
   Frequency – continuous
3. Clean up spilled materials immediately, using dry methods (absorbents).
   Frequency – continuous
4. An oil/water separator is in place at the discharge point of the existing floor drain in the Fleet Maintenance Garage. Inspect the separator periodically and pump out separator as needed with a minimum frequency of once per year.
   Frequency – monthly inspection/annual pumpout
5. Rinse grass from lawn care equipment over permeable, vegetated areas in the field or if equipment is in the Tewning Road complex, use the wash rack.
   Frequency– continuous
6. Never leave vehicles/equipment unattended while refueling. Install signage at all fueling sites to alert users to this policy/procedure.
   Frequency - continuous
7. Maintain spill kits at all fueling stations. Install signage to alert users to the proper procedure to follow when a spill occurs.
   Frequency - continuous
8. Document any/all inspection activities on the proper forms.

Vehicle and Equipment Washing

Purpose: to prevent contamination of stormwater by using proper washing techniques, proper washing locations, and proper disposal of wash water

1. A wash rack has been installed in the Tewning Road complex. The wastewater from the wash rack drain flows first into a storm drain inlet filter and then into an oil/water separator.
   Frequency – continuous
2. All washing of equipment or vehicles is to occur at the wash rack or an offsite, commercial facility.
   Frequency – continuous
3. Equip hoses with automatic shutoff devices and spray nozzle.
   Frequency – continuous
4. Document any/all inspection activities on the proper forms.

Pavement Maintenance

Purpose: to prevent contamination of stormwater as it flows over debris that is deposited on county owned roads, trails and parking infrastructure

Pavement Maintenance

1. All paving work is done through contract services. Paving is to be accomplished only in dry weather with manholes and catch basins covered prior to paving, patching, etc.
   Frequency – always
2. Maintain roadside vegetation – restrict pesticide use.
   Frequency – whenever possible
3. Sweep roadways, trails and shoulders to remove debris, particulate matter. Vacuum sweep the Tewning Road complex and the school's operation center at least twice per year and document amount of material removed.
   Frequency – sweep whenever possible/vacuum twice per year
4. Document sweeping activity and amount of material removed on proper form.

Hazardous and Waste Materials Management

Purpose: to prevent contamination of stormwater by properly storing, handling, and disposing of hazardous and waste materials

1. Store all materials/wastes in closed, labeled containers. If outside storage is necessary, the storage area will be sheltered from the weather.
   Frequency – continuous
2. Designate storage areas away from floor drains (if inside) and storm receivers (if outside). Maintain supply of dry absorbents in storage area for use in containing any spills.
   Frequency – continuous
3. Maintain the pretreatment system (oil/water separator) where a potential exists for petroleum products to enter floor drains. Inspect the separator periodically and pump out separator as needed with a minimum frequency of once per year.
   Frequency – inspect monthly/pumpout as needed or at least annually
4. Reduce stocks of materials where viable - use "first in/first out" management techniques. All materials are stored inside.
   Frequency – continuous
5. Use least toxic materials.
   Frequency - continuous
6. Install secondary containment devices where appropriate.
   Frequency – at time of construction/when identified
7. Recycle/dispose of materials properly. Materials stored for disposal by contractor.
   Frequency – continuous
8. Do not mix dissimilar wastes in the same containers.
   Frequency - continuous
9. Document any/all inspection activities on the proper forms.

Operational By Products/Wastes

Purpose: to prevent contamination of stormwater by preventing improper disposal, and by properly storing, handling, and disposing of facility generated and wastes

FOR FACILITY GENERATED WASTES:

1. Develop a list of wastes, with associated procedures for handling/storage/recycling/disposal, and provide to staff. Instruct all staff to adhere to this information, and to inform the Administrator of Fleet and Equipment if new wastes are generated.
   Frequency – initially, with annual reviews/updates
2. Secure the facility to prevent access (fence/lock gates).
   Frequency – at close of business

FOR COUNTY PROPERTIES THAT ARE SUSCEPTIBLE TO ILLEGAL DUMPING:

There is not a problem with illegal dumping at county property – this item is not applicable.

Road Deicing Material Storage and Application

Purpose: to prevent contamination of stormwater by using proper storage techniques, and improving application techniques of deicing materials

1. General Services does not store road deicing mixtures onsite. Mixtures are purchased from VDOT on an as-needed basis and used immediately.
   No need to address storage of materials
2. Control spread patterns to concentrate material where it is most effective.
   Frequency – continuous
3. Minimize deicing material usage by calibrating salt application equipment periodically.
   Frequency – weekly during winter months
4. Minimize deicing material spillage by not exceeding capacities of equipment (i.e. front-end loader, truck bed) during loading operations.
   Frequency – always
5. Document calibration activities on the proper forms.

Marina Operations

Purpose: to prevent contamination of stormwater by contact with debris, wastes, fuels, or other materials used at marinas

1. Site boat maintenance areas away from the water and storm sewer receivers.
   Frequency- at time of construction
2. Stabilize shoreline.
   Frequency- as needed
3. Install vegetated buffer strips to minimize impervious areas.
   Frequency- at time of construction
4. Inspect/maintain trashcans, pump out stations, fish cleaning stations.
   Frequency- daily
5. Inspect fueling stations for leaks, spills other problems.
   Frequency- daily
6. Document any/all inspection activities on the proper forms

INSPECTION AND DOCUMENTATION NEEDS

Fleet Maintenance Garage

Activity	Frequency
Inspect Secondary Containment Systems	Monthly
Empty Secondary Containment Systems	As needed
Inspect Oil/Water Separator	Monthly
Pump Oil/Water Separator	As needed but at least annually
Inspect floor drains	Monthly
Clean floor drains	As needed
Inspect Trench floor drains	Weekly
Clean Trench floor drains	As needed

Road Deicing Material Storage and Application

Activity	Frequency
Calibrate deicing equipment	Weekly when in use during winter

Standard Operating Procedures for:
James City County Parks and Recreation

Spill Prevention
Purpose: to prevent contamination of stormwater by using proper storage techniques, proper handling techniques, and proper disposal of contaminated stormwater.

1. Monitor equipment storage areas, materials storage areas, and waste storage areas, checking for: fluid leaks, uncovered containers, and deteriorating labels and/or containers, and correct any problems that are noted.
    Frequency - daily
2. Inspect secondary containment systems (i.e. oil, fuel storage tanks) as necessary, and empty them as necessary.
    Frequency - monthly
3. Document any/all inspection activities on the proper forms

Hazardous and Waste Materials Management
Purpose: to prevent contamination of stormwater by properly storing, handling, and disposing of hazardous and waste materials

1. Store all materials/wastes in closed, labeled containers – if outside storage is necessary, the storage area should be sheltered from the weather.
    Frequency – continuous
2. Designate storage areas away from floor drains (if inside) and storm receivers (if outside).
    Frequency – continuous
3. Reduce stocks of materials where viable - use "first in/first out" management techniques.
    Frequency – as needed
5. Use least toxic materials.
    Frequency- continuous
6. Install secondary containment devices where appropriate.
    Frequency– at time of construction
7. Recycle/dispose of materials properly.
    Frequency – continuous
8. Do not mix dissimilar wastes in the same containers.
    Frequency - continuous
9. Document any/all inspection activities on the proper forms.

Alternative Discharge Options for Chlorinated Water

Purpose: to prevent contamination of stormwater that may come into contact with pool water or with treated waters from municipal systems

1. For each source of chlorinated water that will be discharged, determine whether (or not) a sanitary sewer system is available for that discharge.
    Frequency – at time of construction
2. Prior to draining of swimming pool or other facility with chlorinated water, allow disinfectant in the facility to dissipate, or dechlorinate. The disinfectant will break down more quickly in sunny conditions. Check the residual with the proper test kit – the target residual is 0.2 ppm or less.
    Frequency – as needed
3. If no sanitary sewer is available, discharge the water at a slow rate to a vegetated area so that it can be filtered and absorbed, not directly to a surface water, storm sewer, or ditch where it can potentially harm aquatic life.
    Frequency - as needed
4. Discharge during dry weather conditions.
    Frequency - continuous
5. Document any/all inspection activities on the proper forms

Pet Waste Collection

Purpose: to prevent contamination of stormwater via contact with pet related wastes

1. Provide pet waste disposal facilities, doggi pot stations, in all county parks.
    Frequency - continuous
2. Check to ensure that the biodegradable bags are available in each pet waste facility for use in disposing of pet waste in a trash receptacle.
    Frequency – weekly
3. As part of park inspection, remove visible pet waste from all athletic fields and dispose of in a trash receptacle.
    Frequency – daily

Operational By Products/Wastes

Purpose: to prevent contamination of stormwater by preventing “illegal” disposal, and by properly storing, handling, and disposing of facility generated and wastes

FOR MUNICIPAL AREAS THAT ARE SUSCEPTIBLE TO ILLEGAL DUMPING:

1. Post/maintain “NO DUMPING” signs, erect barriers to prevent access, illuminate area.
    Frequency – as needed
2. Patrol areas.
    Frequency – as needed
3. Maintain areas/remove illegally dumped trash/debris.
    Frequency – as needed
4. Document any/all inspection activities on the proper forms

SPILL PREVENTION CONTROL
AND
COUNTERMEASURE PLAN
(SPCC)

JAMES CITY SERVICE AUTHORITY (JCSA)
FIVEFORKS GROUNDWATER TREATMENT FACILITY
4321 John Tyler Highway
Williamsburg, VA 23188

Original Date of Plan: March 25, 2008
Date of Last Plan Approved/Amendment/P.E. Certification Date: 11/6/08

JAMES CITY SERVICE AUTHORITY

Designated Persons accountable for spill prevention:
Mike Spaetzel
RO Plant Supervisor

CERTIFICATION

I hereby certify that I am familiar with the requirements of this part; I have visited the facility, and being familiar with the provisions of 40 CFR part 112 7, attest that this SPCC Plan has been prepared in accordance with good engineering practices.

Engineer: Michael Vergakis, P.E.

Signature:

Registration Number: 018315

State: Virginia

Date: 11/6/08

COMMONWEALTH OF VIRGINIA
11/6/08
MICHAEL D. VERGAKIS
Lic. No. 018315
PROFESSIONAL ENGINEER

SPILL PREVENTION CONTROL AND COUNTERMEASURE COMPLIANCE INSPECTION PLAN REVIEW PAGE

In accordance with 40 CFR 112.5(b), a review and evaluation of this SPCC Plan shall be conducted at least once every five (5) years. As a result of this review and evaluation, JCSA will amend the SPCC Plan within six months of the review in accordance with the general requirements in Sec. 112.7 to include more effective prevention and control technology if: (1) such technology will significantly reduce the likelihood of a spill event from the facility, and (2) if such technology has been field-proven at the time of review. Any amendment to the SPCC Plan shall be certified by a Professional Engineer within six months after a change in the facility's design, construction, operation, or maintenance occurs which materially affects the facility's potential for the discharge of oil into or upon the navigable waters of the United states or adjoining shorelines.

Review Dates	Signature	Date	Title
1. APRIL 2008		11/4/2008	Plant Supervisor
2. APRIL 2013		12/4/2013	" "
3. APRIL 2018			
4. APRIL 2023			
5. APRIL 2028			
6. APRIL 2033			

* SPCC Plan amended and certified by a Registered Professional Engineer per 40 CFR 112.3(d)

MANAGEMENT APPROVAL

James City Service Authority is committed to the prevention of discharges of oil to navigable waters and the environment, and maintains the highest standards for spill prevention control and countermeasures through regular inspection, review, updating, and implementation of this Spill Prevention and Countermeasure Plan for the FiveForks Groundwater Treatment Facility.

Authorized Facility representative: Larry M. Foster Signature: Larry M. Foster

Title: General Manager Date: 11/7/08

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1. FACILITY OWNER, OPERATOR and LOCATION:

A. Facility Owner, Address, and Telephone:

JAMES CITY SERVICE AUTHORITY
107 TEWNING ROAD
WILLIAMSBURG, VA 23185
(757) 259-4098

B. Facility Operator, Address, Location and Telephone:

FIVEFORKS GROUNDWATER TREATMENT FACILITY
4321 JOHN TYLER HIGHWAY
WILLIAMSBURG, VA 23188
(757)259-5460

Location: Latitude 37° 14' 53.8611" N
Longitude 76° 46' 48.4154" W

C. AMENDED CHANGES:

``I have completed review and evaluation of the SPCC Plan for Five Forks Groundwater Treatment Facility on _____, and (will) (will not) amend the Plan as a result."

This is to certify that, on _____ James City Service Authority has reviewed the SPCC plan the following sections were revised.

-
-
-
-
-

2. FACILITY CONTACT(s):

Name	Title	Telephone
Mike Spaetzel	Plant Supervisor	(757) 259-5460
Bruce Capps	Water Production Superintendent	(757) 259-4098
Michael Vergakis	Chief Water Engineer	(757) 253-6677

*See Emergency Contact Numbers in Section I - page 11 below

3. FACILITY DESCRIPTION:

A. Facility Operations:

James City County is a 144-square mile municipality located at the head of the Virginia peninsula, between the James and York Rivers. James City Service Authority (JCSA) operates the largest solely groundwater based water system in the Commonwealth of Virginia. The majority of its groundwater supply system is derived from the Chickahominy-Piney Point Aquifer. The JCSA's water system currently operates a Central Water System and six Independent Systems.

At this location the Five Forks Water Treatment Facility consists of five on-site wells drawing brackish groundwater from the Middle and Lower Potomac Aquifers. To make the water potable, a reverse osmosis treatment process is used to extract salts and other minerals. This extraction, also known as concentrate, is discharged through a pipeline into the James River near the Ferry Site on Jamestown Road. For five million gallons of potable water to be produced, one to 1.25 million gallons of concentrate will be discharged into the James River. Four reverse osmosis (RO) treatment skids are provided in the treatment facility for desalination of the raw water withdrawn from the Lower Potomac Wells.

Diesel fuel and hydraulic oils are delivered via tank truck and waste oils are stored in used containers and promptly removed offsite for recycling. Hours of operation are 24 hours a day, seven days a week, with two production shifts. The facility currently employs 4 employees staffing approximately 20 hours per day.

This facility was dedicated on April 22, 2005 and has been undergoing system testing expansion and upgrades.

B. Facility Storage:

Tank ID	Volume	Contents
Aboveground Storage Tanks (AST's)		
#1 Diesel Fuel	4,000 gallons	Diesel Fuel
#2 Diesel Fuel	280 gallons	Diesel Fuel

VA REGISTRATION FACILITY ID # **5039439**

Underground Storage Tanks (UST's)
None Currently located on site.

Drums/Containers	Volume	Contents
1 Drum	55 gallons	Lube Oil

Total:* 4,335 *gallons

C. Drainage Pathway and Distance to Navigable Waters

The FiveForks Groundwater treatment facility is located less than 0.3 miles from the Powhatan Creek. The majority of the facilities storm water collection system discharges to a stormwater collection basin (BMP) with a slow release control structure. The NorthWest Side of the facility is bounded by Highway Rt. 5 that has a James City County Municipal Separate Storm Water System (MS4) The MS4 discharges to the Powhatan Creek.

4. SPILL HISTORY [112.7(a)]:

There have been no significant oil spills at the facility.

SPILL HISTORY						
LOCATION/DATE /TIME of SPILL	TYPE & AMOUNT SPILLED	CAUSE	AFFECTED WATERCOURSES	DAMAGES & COST of DAMAGES	CLEANUP COST	CORRECTIVE ACTION

5. POTENTIAL SPILL PREDICTIONS, VOLUMES, RATES, AND CONTROL [112.7(b)]:

SOURCE	TYPE of FAILURE	VOLUME (gallons)	RATE (gallon/hr)	DIRECTION of FLOW	CONTAINMENT VOLUME (gallons)
Aboveground Storage Tanks					
#1 Diesel Fuel Bulk Tank	rupture; leakage	4,000	4,000	North to northwest	n/a secondary containment
#2 Diesel Fuel Day Tank	rupture; leakage	280	280	Contained within facility	n/a secondary containment
Truck Loading/Unloading Operations	rupture; leakage	4,000	4,000	northwest	None
Other Equipment/Storage					
Aboveground Pipelines	rupture;piping failure;valve failure	4,000	120	northwest	None
55 Gallon Drums	leakage;valve failure; drum rupture	55	55	Contained within facility	
Used Oil	drum rupture	55	55	Contained within facility	None

Trajectory Analysis indicates the maximum potential discharge volume of 4000 gallons

6. SPCC PREVENTION MEASURES PROVIDED:

Drainage Control Diversionary Structures and Containment [112.7(c)]

At Five Forks Groundwater Treatment Facility the vessels containing petroleum oil (diesel fuel) have built-in secondary containment that has the following UL listings: UL-142, UL-2085, UL-S655, UL-2244 and UL CAN/ORD-C142.16 & 142.5.

A. Drainage Control [112.7(e)(1)(i-v)]:

(i) Drainage from (secondary retaining) areas:

Accumulation in Area A, That contains AST No. 1 is sheet flow towards a nearby stormwater invert's that leads to the facilities stormwater BMP. The secondary containment is checked weekly to ensure there are no leaks in the secondary containment or associated piping and that the leak detection alarms are functioning properly. A more thorough monthly inspection is recorded as well as a daily visual inspection for leaks and Spills inside and outside the building. Spills could potentially reach the sanitary sewer system and be discharged to the Hampton Roads Sanitation District - Williamsburg plant.

Accumulation in Area B, That contains AST No.2 and the 55-gallon drum (lube and or synthetic oils) would be contained inside the facility. The secondary containment is checked weekly to ensure there are no leaks in the secondary containment or associated piping and that the leak detection alarms are functioning properly.

B. Bulk Storage Tanks/Secondary Containment [112.7(e)(2)(i-xi)]:

(i) Tank compatibility with its contents:

The AST's are constructed of welded steel in accordance with API Standards 650 and 651 and are compatible with the contents that they hold.
Tank No. 1 – Manufactured by: ConVault No. 4000LP, 4109 Zeering Road, Denair, CA 95316

(ii) Tank #2 – Manufactured by: Containment Solutions,Lube Cube No. P-28623, 2400 Augusta Drive, Suite 340, Houston TX 77057.

The tanks are grounded and seismically restrained for Seismic Exposure Group III. C. (*The BOCA National Building Code*). All tanks have interior and exterior coatings.

(iii) Inspection and drainage of rainwater:

Rainwater that collects in Area A flows to the facilities stormwater BMP. Area B is under roof no rain water collects here.
If an oil sheen is observed in Area A, appropriate cleanup measure shall be employed (i.e. sorbent pads, clays, sand).

(iv) Corrosion protection of buried metallic storage tanks:

There are no buried metallic storage tanks at the FiveForks groundwater treatment facility.

(v) Corrosion protection of partially buried metallic tanks:

There are no partially buried metallic storage tanks at the FiveForks groundwater treatment facility.

(vi) Aboveground tank periodic integrity testing:

Facility personnel constantly observe tanks during operating hours. Formal inspections are conducted weekly to examine the exterior of the tanks and the containment areas. These inspections are documented using the report form that can be found in Appendix 3. In accordance with API 653, JCSA contracts a certified inspector every ten years, or more often when necessary based on visual inspections or monitoring results, the AST's will be drained, cleaned, inspected, and repaired, if necessary.

(vii) Control of leakage through internal heating coils:

There are no internal heating coils on storage tanks at the FiveForks groundwater treatment facility.

(viii) Tank installation fail-safe engineered:

Liquid level gauges are utilized on the AST as well as, manually sticking the tanks as a secondary check to ensure that level gauges are working properly.

(ix) Observation of disposal facilities for effluent discharge:

Oil observed on the ground, in a storm water invert, or in the sanitary sewer system shall be cleaned up immediately by plant personnel or an outside contractor. All waste oil shall be disposed of in accordance with Federal, State, Local Laws and regulations.

(x) Visible oil leak corrections from tank seams and gaskets:

Visible oil leaks are reported to the JCSA Support Maintenance department through a work order system, so that they can be fixed immediately. The maintenance department informs the plant supervisor when the repair has been completed or if additional time is needed to obtain parts and remedy the leak. Measures will be taken to minimize and mitigate the leak, while awaiting repair. Any spilled oil is to be cleaned up immediately by plant personnel or an outside contractor where appropriate. Oil spill cleanup supplies are located in a spill kit located in the main facility building in the shop area. Additionally; there are other supplies and tools located throughout the facility such as brooms and squeegee's.

Appropriate position of mobile or portable oil storage tanks:
55-gallon drums, 5-gallon buckets, and 1-gallon containers are stored inside the building off of the emergency generator engine room. All drums are stored on concrete or a spill containment platform and locked area. There are not any sanitary drains in the immediate area that would be affected.

C. Facility Transfer Operations [112.7(e)(3)(i-v)]:

(i) Buried piping installation protection and examination:

The 4,000 gallon AST bulk fuel tank feed's the 280 gallon AST day tank utilizing SIMPLX package pump set and are totally enclosed as well as the underground piping. The fuel piping is fully incased inside a protective secondary pipe casing with leak detection & location system Trace Tek model TTDM-128.

(ii) Not-in-service and service terminal connections:

Terminal connections in the tank truck loading/unloading areas are capped and valve closed/locked when not in use. Pipelines that are out of service are evacuated and blank flanged if not removed from the site. All aboveground piping is marked with product contents, origin, and direction of flow.

(iii) Pipe support design:

Pipe supports are constructed of steel, with concrete foundations. The steel serves as the platform for the piping and has supports to prevent excess movement. Each steel platform has a rubber pad in order to minimize abrasion and corrosion and allow expansion and contraction of the piping.

(iv) Aboveground valve and pipeline examination:

All aboveground piping at the FiveForks Water Treatment Facility is observed at the beginning of each shift during a pre-walkthrough inspection and throughout the day. Aboveground pipelines and valves are also examined during the weekly inspection discussed in Section E. These inspections are documented (see Appendix 4).

(v) Aboveground piping protection from vehicular traffic:

Some aboveground piping is located within the AST area and is protected against impact of vehicular traffic by concrete bollards. These barrier poles protect other aboveground piping. Each area that contains aboveground piping also has signs to warn vehicles about hazards.

D. Facility Truck Loading/Unloading Operations [112.7(e)(4)(i-iv)]:

(i) Loading/unloading procedures meet DOT regulations:

JCSA requires all drivers to comply with DOT regulations in 49 CFR part 177 and facility standard operating procedures. All drivers must be authorized and certified to load/unload product. Unloading of product is performed by an outside fuel supplier. Typically no fuel is transferred from the AST.

(ii) Secondary Containment for vehicles adequate:

Containment booms/pads capable of containing 400 gallon capacity of spilled product are available for the loading/unloading area.

(iii) Warning and barrier systems for vehicles:

Warning signs and bollards are posted in all the loading/unloading areas, to prevent vehicles from inadvertently hitting the AST.

(iv) Vehicles examined for lowermost drainage outlets before leaving:

Contractors are responsible to ensure drainage outlets are free from oils and are capped before exiting the facility.

E. Inspections/Record Keeping [112.7(e)(8)]:

Facility inspection procedures: Formal facility inspections are conducted weekly and records of these inspections are documented and signed by the inspector or plant supervisor. During the weekly inspections, all tanks, containment structures, valves, pipelines, and other equipment are inspected. Every four weeks, spill-prevention devices are inspected during the monthly inspection. The checklist used for these inspections can be found in Appendix 3 & 4.

Length of time records kept:

Inspection, training, and tank integrity testing records are retained for at least three years.

F. Site Security [112.7(e)(9)(i-v)]:

(i) Fencing:

The main operations facility is enclosed by 8' fencing with secured gates. Security cameras monitor gates and AST No.1 diesel fuel tank.

(ii) Flow valves locked:

All tank fill valves are locked when not in use.

(iii) Starter controls locked:

Starter controls automatically alternate between pumps and are called for as the day tank level falls below a preset set point.

(iv) Pipeline loading/unloading connections securely capped:

Pipeline connections are securely capped when they are not in use and blank-flanged when they are in standby service for an extended time. All out of service pipelines are evacuated of their contents.

(v) Lighting adequate to detect spills:

Lights illuminate the AST area, the truck loading/unloading areas and the exterior areas around the facility within the fence. Lighting is adequate to detect spills during nighttime hours and prevent vandalism.

G. Personnel Training and Spill Prevention Procedures [112.7(e)(10)(i-iii)]:

(i) Personnel instructions:

All new hires in the department are required to have spill prevention training that includes a complete review of SPCC Plan. Employees are also instructed and tested on the job. Once a year, refresher training and deployment exercises for spill response are conducted.

(ii) Designated person accountable for spill prevention:

Mike Spaetzel is the designated person accountable for spill prevention at the Five Forks Groundwater Treatment Facility.

(iii) Spill prevention briefings:

During monthly staff meetings, spill prevention techniques are typically discussed. Any near misses or incidents are discussed in these briefings in order to prevent them from recurring. Employee feedback and recommendations are encouraged in spill prevention and operation.

H. Spill Control Equipment:

Spill control equipment on site includes absorbent pads and booms, granular absorbent, absorbent pads, empty drums, brooms. Spill equipment is stored in a nearby tool room. Additional supplies are available from JCSA warehouse.

DESCRIPTION	Quantity
Sand Bags	3 each
Oil Dri Bags	1 each
Oil Up Bags	2 each
Orange Safety Cones	6 each
Caution Tape	1 rolls
Nitrile Gloves	2 pair
Sorbent Pads 18"x18"	100 each
Roll Sorbent Box	1 each
Tyvek Coveralls	2 pair
Sorbent Socks 3"x8'	10 each
Floor Spill Signage	3 each
Pillows 17"x17"	25
Dikes/Socks 3"x4'	15

Additionally, IMS - Environmental Services and PetroChem, Corporation's capabilities and resources are enclosed in Appendix 8.

I. Emergency Contacts:

National Response Center	(800) 424-8802
Virginia Department of Environmental Quality	(757) 518-2000
Virginia Department of Emergency Services	(800) 468-8892
Mike Spaetzel	(757) 259-5460

SPILL CONTRACTORS

Industrial Marine Services – Norfolk, VA	**(800) 229-4671** **(757) 543-5718**
PetroChem – Norfolk, VA	**(800) 723-6951** **(757) 627-8791**

J. Worst Case Discharge Scenario

A.1 SINGLE-TANK FACILITIES

For facilities containing only one aboveground oil storage tank, the worst case discharge planning volume equals the capacity of the oil storage tank. If adequate secondary containment (sufficiently large to contain the capacity of the aboveground oil storage tank plus sufficient freeboard to allow for precipitation) exists for the oil storage tank, multiply the capacity of the tank by 0.8.

(1) FINAL WORST CASE VOLUME: 4000 GAL
(2) Do not proceed further.

Rupture and or failure of the 4,000 gallon Diesel Fuel tank.
A catastrophic release of this proportion would migrate into the facilities stormwater BMP.

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APPENDIX 1

SECONDARY CONTAINMENT CALCULATIONS FOR DIKED STORAGE AREAS

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CONTAINMENT CALCULATION AREA A

Tank No. 1- Not Applicable (double wall welded steel construction)
Secondary Containment

CONTAINMENT CALCULATION AREA B

Tank No. 2- Not Applicable (double wall welded steel construction)
Secondary Containment

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APPENDIX 2

DRAINAGE DISCHARGE REPORT FORMS
AREA A

Tank No. 1- Not Applicable (double wall welded steel construction)
Secondary Containment

DRAINAGE DISCHARGE REPORT FORMS
AREA B

Tank No. 2- Not Applicable (double wall welded steel construction)
Secondary Containment

Note: Any releases into the secondary containment will require clean-up and repairs by a third party and documented as such.

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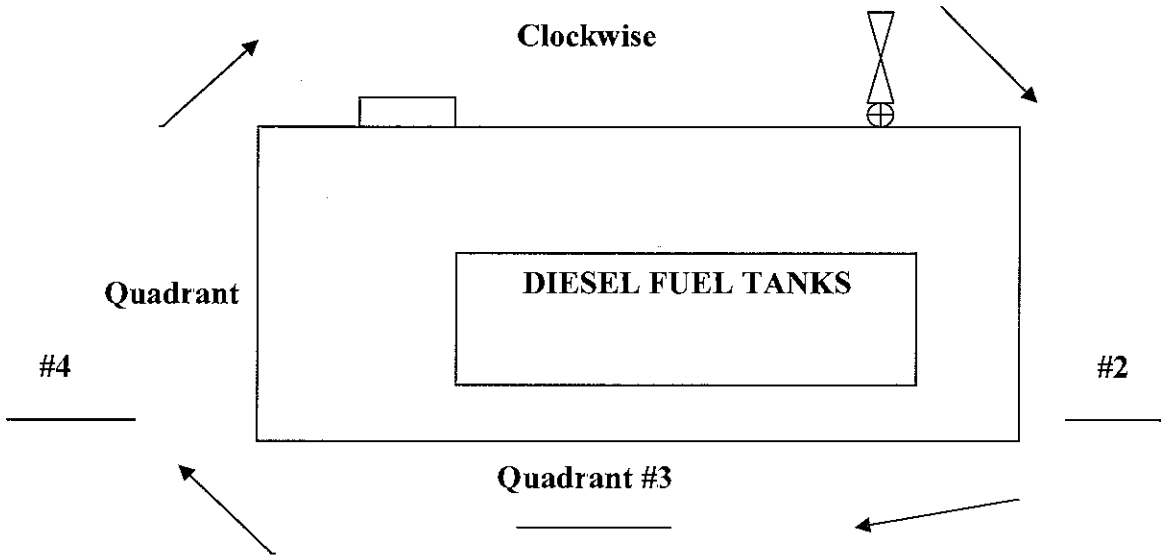
Fuel Tank Inspection Report

Platform

Quadrant #1 _____



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APPENDIX 4

WEEKLY FACILITY INSPECTION REPORT AND CHECKLIST

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WEEKLY FACILITY INSPECTION CHECKLIST

Date: _____ Time: _____ Inspector: _____	X=Satisfactory NA=Not Applicable O=Repair or Adjustment Required C=See comment under Remarks/Recommendations
Drainage ____ Any noticeable oil sheen on runoff. n/a Containment area drainage valves are closed and locked. ____ No visible oil sheen in containment area. ____ No standing water in containment area.	**ASTs** ____Tank surfaces checked for signs of leakage ____ Tank condition good "no rusting, corrosion, pitting". ____ Bolts, rivets, or seams are not damaged. ____ Tank foundation intact. ____ Level gauges and alarms working properly. ____ Vents are not obstructed. ____ Valves, flanges, and gaskets are free from leaks. ____ Containment walls are intact.
Pipelines ____ No signs of corrosion damage to pipelines or supports. ____ Buried pipelines are not exposed. ____ Out-of-service pipes capped. ____ Signs/barriers to protect pipelines from vehicles are in place. ____ No leaks at valves, flanged, or other fittings.	**Truck Loading/Unloading Area** ____Warning signs posted. ____ No leaks in hoses. ____ Drip pans not overflowing. ____ Containment curbing or trenches intact. ____ Connections are capped or blank-flanged.
Security ____Fence and gates intact. ____ Gates have locks. ____ AST's locked when not in use. ____ Starter controls for pumps locked when not in use. ____ Lighting is working properly.	**Training** ____ Spill prevention briefing held. ____ Training records are in order.

Remarks/Recommendations:_____

_____

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FIVEFORKS GROUNDWATER TREATMENT

STORM WATER POLLUTION PREVENTION REPORT

Day Shift Operator : _____ (AM)

DATE_____

Night Shift Operator:: _____ (PM)

Hazardous Chemical Identification	Drums OK	Bulk Tank OK	Day Tank OK	Remarks
280 Gallon Diesel Fuel Day Storage Tank				
4,000 Gallon Diesel Fuel Bulk Storage Tank				
Hypochlorite Storage				
Hydroxide/Caustic Storage				
Corrosion Inhibitor Storage				
Scale Inhibitor Storage				
Miscellaneous Drums				

Five Forks Facility	Initial Day Shift	√	Initial Night Shift	√	Remarks
Perimeter					
Paved Parking					
Ditch					

Plant Grounds	Initial Day Shift	√	Initial Night Shift	√	Remarks
General Condition					
Trash Dumpster					

Instructions:

Visually inspect Hazardous Chemical storage areas daily. Misc. Drums, Barrels, Trash, Cans Without Labels - All Storage Tanks Must Have Labels – Note: And Report Any Spill Especially During Transfer - Note Any Potential Spill Sonrce That Could Contact Storm water Run-Off. Note: Any chemical Liquid spills.

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APPENDIX 3

FUEL TANK INSPECTION REPORT

AST MONTHLY INSPECTION REPORT

Date _____

Location FIVEFORKS GROUNDWATER FACILITY
Liquid Level _____
Tank No. 1 Temp. _____
Capacity 4,000 gallons Length 17'7" Width 8'0" Height 6'5"
Liquid Level _____
Tank No. 2
Capicity 280 gallons Length 4'10" Width 2'10" Height 4'1"

1. Weather Stripping or Flashing
Are all pieces tight against shell? _____
Are any pieces missing or (Photo No. ____) require repairs? _____
2. Hoses & Piping
a. General appearance of PIPING
b. Any leaks? _____ If so, explain
_____
c. Aboveground piping free of leaks?
_____

3. Contamination
a. Is roof free of oil, water and debri? _____If not, indicate percent coverage of each liquid and depth at worst location on attached drawing.

4. Corrosion Control
Note general appearance of shell, roof, and structural members:
_____
Is rusting or pitting occurring on any of the above? If yes, explain where and if repairs are needed immediately. _____
_____
Inspect secondary containments for product or rain water. Note any quantity drained and disposal method.
_____

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Are all ground and/or anode straps in place? If missing or damaged, indicate location on drawing and explain repairs needed: _____

_____

Are Leak Detection alarms functioning properly? _____ Tested to verify?_____

Other Observations
Note anything that would allow escape of vapors or air pollution:

_____
Show any damaged areas or problem area on attached drawing.

Remote and site level gauge working properly?_____ Tested to verify?_____

Check tanks for leaks, specifically looking for:
A. drip marks;
B. discoloration of tanks;
C. puddles containing spilled or leaked material;
D. corrosion;
E. cracks; and
F. localized dead vegetation.

6.Check foundation for:
A. cracks;
B. discoloration;
C. puddles containing spilled or leaked material;
D. settling;
E. gaps between tank and foundation; and
F. damage caused by vegetation roots.

7. Check piping for:
A. droplets of stored material;
B. discoloration;
C. corrosion;
D. bowing of pipe between supports;
E. evidence of stored material seepage from valves or seals; and
F. localized dead vegetation.

8. Check Spill kit Supplies for:
A. Proper quantity of pads/ booms to contain large spill;
B. Safety PPE;
C. Location and availability for quick response with supplies;
D. Training log current;
E. Proper disposal of used supplies;

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APPENDIX 5

CERTIFICATION OF THE APPLICABILITY OF THE SUBSTANTIAL HARM CRITERIA CHECKLIST

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CERTIFICATION OF THE APPLICABILITY OF THE SUBSTANTIAL HARM CRITERIA CHECKLIST

FACILITY NAME: FIVE FORKS GROUNDWATER TREATMENT FACILITY

FACILITY ADDRESS: 4321 JOHN TYLER HIGHWAY,
WILLIAMSBURG, VIRGINIA 23188

Does the facility transfer oil over water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?
Yes __ No _X_

Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation within any aboveground oil storage tank area?
Yes __ No X

Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the formula in Attachment C-III, Appendix C, 40 CFR 112 or a comparable formula[1]) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments? For further description of fish and wildlife and sensitive environments, see Appendices I, II, and III to DOC/NOAA's "Guidance for Facility and Vessel Response Environments" (Section 10, Appendix E, 40 CFR 112 for availability) and the applicable Area Contingency Plan.
Yes __ No X

Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula (Attachment C-III, Appendix C, 40 CFR 112 or a comparable formula) such that a discharge from the facility would shut down a public drinking water intake[2]?
Yes __ No X

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APPENDIX 6

SPCC PLAN CHECKLIST FOR BULK OIL STORAGE FACILITIES

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Continued:_____

1 If a comparable formula is used, documentation of the reliability and analytical soundness of the comparable formula must be attached to this form.

[2] For the purposes of 40 CFR part 112, public drinking water intakes are analogous to public water systems as described at 40 CFR 143.2(c).

Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and has the facility experienced a reportable oil spill in an amount greater than or equal to 10,000 gallons within the last 5 years?
Yes __ No X

CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.

LARRY M. FOSTER	Larry M Foster
Name (please type or print)	**Signature**
GENERAL MANAGER	Nov 6, 2008
Title	**Date**

From 40 CFR 112 Appendix C, Attachment C- II

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SPCC PLAN CHECKLIST FOR BULK OIL STORAGE FACILITIES

I. Operator and Owner Addresses and Phone Nos.
Day-to-day Operations and Facility Background
Receiving Water/Probable Flow Paths (e.g., facility storm drain, street storm drain, WWTP outfall, overland to river or stream, flood control pond)

IV. Copy of SPCC Plan/Site Diagrams
__ Certification of engineer: 112.4 (d).
__ Reviewed within past five years: 11 2.5(b).
__ Full approval of appropriate level management: 112.7
__ Spill history: 112.7(a)
__ Spill predictions: 112.7(b)
__ Diversionary structures and conainment: 112.7(c)

V. SPCC Measures

112.8(b)(1) Facility drainage:
__ i) Dike drainage via valves or manually controlled pumps.
__ ii) No flapper-type drain valves on diked areas. Dike drain valves manual control.
__ iii) Undiked area drains to BMP pond.
__ iv) If no drain prep as above. Diversion system to return oil.
__ v) If drainage water not moved by gravity flow, then redundant lift pump setup.

112.8(c)(2) Bulk storage containers:

__ 1) Material and construction compatible with contents.
__ 2) Secondary containment for largest tank + precipitation, and dikes sufficiently impervious to spilled oil. or trench enclosure draining to BMP pond.
__ 3) Rainwater drainage (into a storm drain or water course) bypassing in plant treatment okay if: bypass valve normally sealed closed, and inspection and compliance with water quality standards, and valve opened under responsible supervision, and records kept of drainage events.
__4) Buried tanks protected against corrosion/regular pressure testing.
__5) Partially buried tanks protected against corrosion.
__ 6) Surface tanks integrity tested via hydrostatic, visual inspection, or nondestructive shell thickness methods. Construction tanks base adequate.
__ 7) Internal heating coils are closed loop or treated and monitored.
__ 8) Fail-safe engineering on all tanks, new and old, via high liquid level alarms or high liquid level pump cutoff devices, or audible/code warning, and regular testing of liquid level sensors.

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__ 9) Water discharge facilities inspected regularly (VPDES STORMWATER).
__ 10) Visible leaks on tanks and piping corrected (Protocol).
__ 11) Secondary containment for largest portable storage tank.
Portable tank area free from periodic flooding or washout.

112.7(h)(3) Facility transfer operations:

__ i) Buried piping protected against corrosion.
__ ii) Out-of-service pipes capped with origin marked.
__ iii) Pipe supports minimize abrasion, corrosion, sagging.
__ iv) Regular inspection of surface pipe and valves.
__ v) Regular pressure testing for pipes with no secondary containment.
__vi) Signs to warn vehicles about piping.

112.7(h)(4) Facility loading/unloading rack:

__ i) Follow DOT procedures for loading/unloading tank cars and tank trucks.
__ ii) Secondary containment for largest vehicle compartment (or quick drainage system).
__ iii) Prevention of early vehicle departure via warning signs, physical barriers, or interlocked warning light.
__ iv) Vehicles examined for leakage at all outlets prior to departure.

112.7(e)(8) Inspections and records:

__ Written procedures records kept for three years of inspections and
__ Records (inspections, discharges, training, briefings) kept for three years.

112.7(g)(9) Security:

__ i) Fully fenced.
__ ii) Gates locked when plant unattended.
__ ii) Master flow and drain valves of tanks locked closed.
__ iii) Starter control locked "off" or located where only the authorized have access.
__ iv) Out-of-service pipelines capped or blank-flanged.
__ v) Lighting adequate for night spill detection and deterring vandals.

112.7(f)(10) Personnel, training and spill prevention procedures:

__ i) Personnel instructed in equipment operation and oil regulations.
__ ii) One person accountable for spill prevention.
__ iii) Owner/operator schedules regular briefings.

___ 112.20(e) Applicability of Substantial Harm Criteria Checklist Completed.

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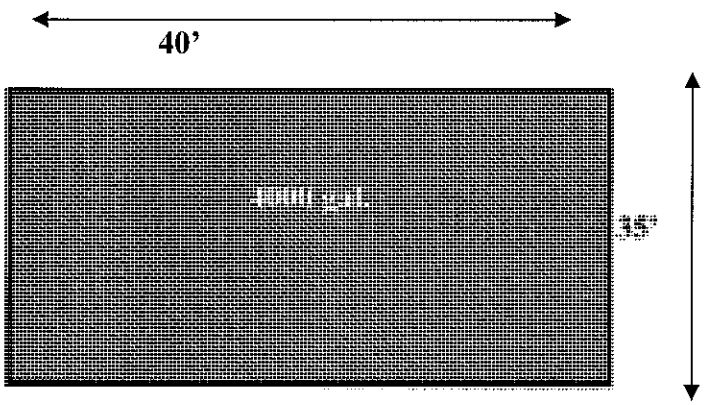
APPENDIX 7

SAMPLE CONTAINMENT VOLUME CALCULATIONS

NOTE: In the following example, the assumption is made that the horizontally mounted tanks do not significantly impinge on available containment volume, because they are typically elevated on supports. If the support system is fairly massive, the amount of volume it displaces should be taken into account.



NOT TO SCALE

1. EXAMPLE OF DESIGN:
HORIZONTAL TANKS ONLY
REQUIRED CONTAINMENT VOLUME:

Entire contents of largest tank (4000 gallons) plus sufficient freeboard for precipitation (100 yr,24-hr storm event)

ASSUMPTIONS:

Dike length = 45 ft.
Dike width = 30 ft.
Sufficient freeboard = 6 in. = .5 ft.

JAMES CITY SERVICE AUTHORITY

1. Volume of Largest Tank (cu. ft.)
= Tank Volume x 0.1337 cu. ft./gal. conversion factor
= 4,000 gals. x 0. 1337 cu. ft./gal. = 534.8 cu. ft.

2. Available Diked Area = 30 ft. x 45 ft. = 1,350 sq. ft.

Height to Contain Tank Volume = (Tank Volume) / (Available Diked Area)
= 534.8 cu. ft. /. 1,350 sq. ft. = .39 ft.

Required Height of Dike Walls = (Height to Contain Tank Volume) + (Sufficient Freeboard)
= .39 ft. + .5 ft. = .896 ft. = 7 in.

In this example, the containment wall must be at least 7 inches in height to provide the required containment capacity for this tank area.

JAMES CITY SERVICE AUTHORITY

APPENDIX 8

SPILL RESPONSE CONTRACTOR'S QUALIFICATIONS AND RESOURCES

Regional Stormwater Training Plan

Training Priorities:

1) IDDE – Public Works, fire department, parks and rec
2) Street and Parking Lot maintenance
3) Pollution Prevention Maintenance and Public Works Yards

Training Strategy/Schedule

HRPDC will create and maintain a Regional Training Library of physical and online videos and other training materials by December 31, 2014.

Localities will create monthly opportunities for necessary staff to attend 30 min-1 hr education sessions on priority topics.

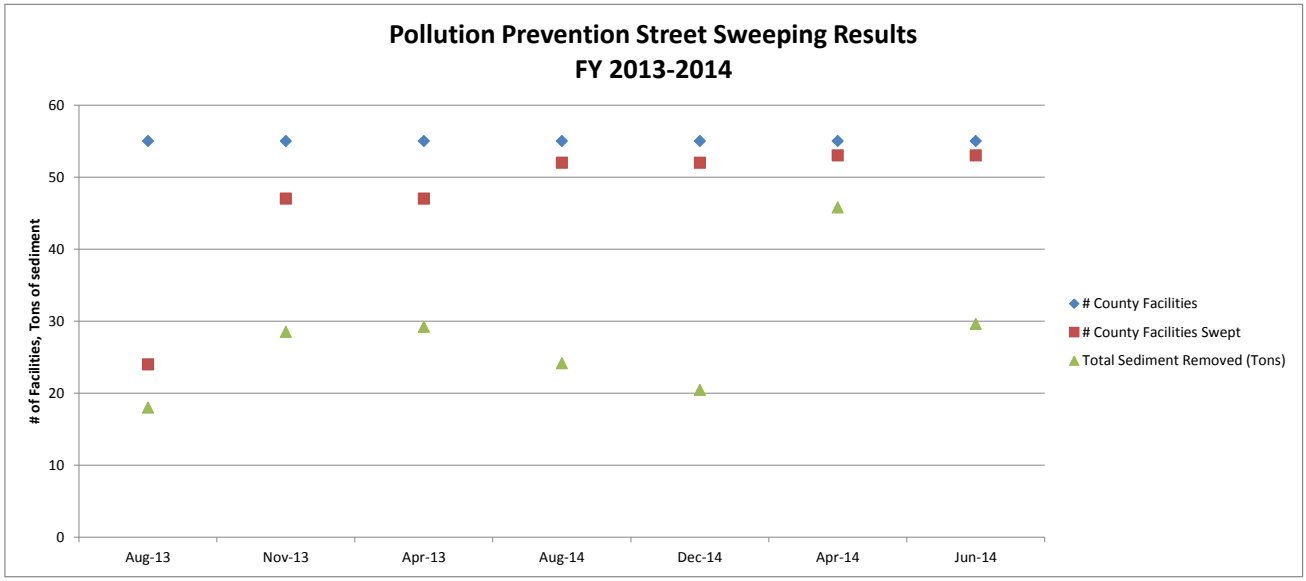
A Regional Training on Pollution Prevention will be held once per permit cycle.

A Regional Training on Construction/E and S will be held once per permit cycle.

Dates Collected	***Tons Collected***
August 19, 2013 - August 26, 2013	24.16
December 2, 2013 - December 9, 2013	20.46
April 7, 2014 - April 14, 2014	45.77
June 16, 2014 - June 23, 2014	29.61

Street Sweeping FY14

Month	***# County Facilities***	***# County Facilities Swept***	***Total Sediment Removed (Tons)***
Aug-13	55	24	18
Nov-13	55	47	28.5
Apr-13	55	47	29.21
Aug-14	55	52	24.16
Dec-14	55	52	20.46
Apr-14	55	53	45.77
Jun-14	55	53	29.61



Turf Love Program

No. of Nutrient Management Plans Issued:			**224**
Residential		101	
Commercial*		123	
(James City County/School Properties = 0**)			
Acres Covered by Nutrient Management Plans:			**114.58**
Residential		19.74	
Commercial		94.84	
(James City County/School Properties = 0)			
Acres in relation to RPA:			
In an RPA		80%	
Residential	5%		
Commercial	95%		
(James City County/School Properties = 0)			
Near an RPA		4%	
Residential	95%		
Commercial	5%		
(James City County/School Properties = 0)			
Not in or near an RPA		16%	
Residential	70%		
Commercial	30%		
(James City County/School Properties = 0)			
No. of Soil Tests Sent to VA Tech:			**188**
Turf Love Program:		188	
Residential	134		
Commercial	54		
(James City County/School Properties = 0)			
No. of Property Owners Contacted			**320**
Residential	315		
Commercial	5		
(James City County/School Properties = 0)			
General Contacts (may not be property owners):			**448**
(Farmers' Market, Super Turf Sat., Turf Love "University," Others)			

* 'Commercial' = non-residential property plus reports to developers

Garden Love Program

No. of Gardens	8
Gardeon Area (SF)	1,494
Surface Area (SF) Treated	44,478
Rebated	$7,800.46

Virginia Cooperative Extension
Virginia Tech • Virginia State University

TITLE: Turf Love/Garden Love Programs (End of FY 14)

RELEVENCE: The Turf Love Program seeks to mitigate damage to the James City County watershed by educating citizens and commercial organizations on sound nutrient management practices for their turf areas. In addition, the Program outlines measures to conserve precious water when caring for lawns. The goal is adherence to the instructions, thereby preserving James City County's delicate watershed and preventing damage to the Chesapeake Bay. The Turf Love Program is the primary vehicle by which James City County is credited for acres protected in the Chesapeake Bay model. The Garden Love Program began in FY 13 and seeks to decrease stormwater runoff by helping citizens install infiltrating rain gardens.

RESPONSE: During FY 14, the Program issued 101 nutrient management plans for residential turf areas. The residential plans cover 19.74 acres, and 41 percent of the properties lie in or near Resource Protection Areas (RPA). "Commercial" plans include business and county properties. Commercial properties (generally golf courses and neighborhood common areas) represent increasing interest in responsible turf management and therefore more requests for plans. In FY 14, we completed 123 commercial nutrient management plans (one golf course, two developers, and one apartment complex). The plans cover 94.84 acres, 89.68 of which are in or near RPAs. At the County's request, in FY 11, we expanded our scope to include county schools and athletic fields; however, none were needed during FY 14. In terms of watershed areas affected by all nutrient management plans, Turf Love Program plans represent coverage in 16 hydrologic zones (zones which represent individual waterways feeding or affecting the Chesapeake Bay). The plans we issued affect 11 watersheds (Powhatan, Ware, College, Yarmouth, Gordon, Mill, Skimino, and Diascund Creeks, and the James, York, and Chickahominy Rivers).

"Lawn Rangers" (Turf Love volunteers) visit client properties, discuss turf practices, and take soil samples. During this period, they visited 320 homeowners. Through educational programs, Farmers' Markets, and other events for the public, we reached 448 persons about the Turf Love and Garden Love Programs.

We began the Garden Love Program in FY 13. Twenty rain gardens were completed in FY 13, and eight (1,494 square feet) more were completed in FY 14. They gather water runoff from 44,478 square feet of surface area.

RESULTS: In FY 14, the Turf Love Program issued 224 nutrient management plans to residential and commercial customers. Nutrient management plans use specific soil analyses from customer properties to develop custom, Virginia Tech research-based instructions on establishment and care of clients' turf. Our survey verified that clients are generally following the instructions and changing their turf care behavior. An example would be if the client now only fertilizes cool-season turf in the fall. If so, this significantly decreases nitrogen run-off into adjacent waterways in the spring when citizens misguidedly feel they should fertilize their lawns. Over half revealed that they had changed their lawn care fertilization to only fertilize in the fall. Almost 80 percent now either return their clippings to their lawns or compost them. This lessens our landfill impact and avoids runoff into storm drains as well as returning valuable organic

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matter to the soil. Three-fourths now water their lawns in the early morning hours and use less water than before. We are also noticing a statistical trend toward more drought-resistant warm-season lawns.

COLLABORATORS: In addition to the Virginia Cooperative Extension Office and Virginia Tech, the Turf Love Program works closely with the Virginia Department of Conservation and Recreation, James City County Service Authority, James City County Stormwater Department, and Colonial Soil and Water Conservation District. Salary funding for two part-time staff is shared by the James City County Service Authority and the James City County Stormwater Department. Through funding by the James City County Stormwater Division, we are collaborating on designing rain gardens.

CONTACT: Mrs. Doris Heath, Unit Coordinator, Virginia Cooperative Extension, James City County Office, 757-564-2170, dheath@vt.edu.

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Facilities Covered Under Permit VAR040037, §II B 6 b (2) –SWPPP Facilities

Type	Number in County	Owner Agency	Activities with High Potential for Discharging Pollutants	High Priority Facility	SWPPPs as of 06/30/14
Convenience Centers	3	JCC	Collection of municipal solid waste, recyclable solid waste, recycle stations for antifreeze, used oil, batteries, etc	Yes	Yes, draft
Fire Stations	5	JCC	Fuel Sites at FS 1, 2, 3, 5; occasional vehicle and equipment washing	Yes, for fuel sites	Yes, draft
Equipment Maintenance Facilities	3	JCC, JCSA, W-JCC Schools	2 have fuel sites, vehicle and equipment maintenance in covered facilities, waste oil collection, equipment storage	Yes	Yes, draft, for JCC & JCSA sites
Grounds Maintenance Facilities	2	JCC/JCSA	Exterior equipment storage	No	No
Marina	1	JCC	Fueling, waste pump out, boat repairs, equipment storage	Yes	Yes, draft
Office buildings or complex, includes JCC library	6	JCC	None – office work	No	No
Parks & Trails	16	JCC	Outside pools, water sports access	No	No
School facilities	13	W-JCC Schools	None - educational activities and playgrounds	No	No

Id	Mang_Turf	ACRES	Contiguous	In2010_UA	UA Acres	PlanDate	EXPDate	InProgress	Plan Priority by FY
32	TOANO MIDDLE SCHOOL	2.3812	YES	YES	2.3812			soil test	2015
33	TOANO MIDDLE SCHOOL	1.2396	YES	YES	1.2396			soil test	2015
34	TOANO MIDDLE SCHOOL	1.9916	YES	YES	1.9916			soil test	2015
11	WARHILL HIGH SCHOOL	2.0016	YES	YES	2.0016			soil test	2015
12	WARHILL HIGH SCHOOL	1.9750	YES	YES	1.9750			soil test	2015
3	WARHILL HIGH SCHOOL	2.4937	YES	YES	2.4937			soil test	2015
43	JCC RECRATION CENTER	1.3881	YES	YES	1.3881	3/14/2012	3/14/2015		2016
44	JCC RECREATION CENTER	1.4516	YES		1.4516	3/14/2012	3/14/2015		2016
46	JCC RECREATION CENTER	1.6473	YES	YES	1.6473	3/14/2012	3/14/2015		2016
45	JCC RECREATION CENTER	1.5988	YES	YES	1.5988	3/14/2012	3/14/2015		2016
15	WARHILL TRACT SPORTS FIELD	1.6260	YES	YES	1.6260	2011	2014		2016
55	WARHILL TRACT SPORTS FIELD	3.0081	YES	YES	3.0081	2011	2014		2016
16	WARHILL TRACT SPORTS FIELD	2.2531	YES	YES	2.2531	2011	2014		2016
35	DJ MONTAGUE ELEMENTARY SCHOOL	1.4666	YES	YES	1.4666				2017
37	JAMESTOWN HIGH SCHOOL	2.3120	YES	YES	2.3120				2017
38	JAMESTOWN HIGH SCHOOL	1.0475	YES	YES	1.0475				2017
39	JAMESTOWN HIGH SCHOOL	2.0985	YES	YES	2.0985				2017
40	JAMESTOWN HIGH SCHOOL	2.2883	YES	YES	2.2883				2017
13	LAFAYETTE HIGH SCHOOL	2.0259	YES	YES	2.0259				2017
18	LAFAYETTE HIGH SCHOOL	2.3032	YES	YES	2.3032				2017
4	BLAYTON ES/HORNSBY MS COMPLEX	2.2871	YES			8/1/2010	8/1/2013		2018
5	BLAYTON ES/HORNSBY MS COMPLEX	1.6191	YES			8/1/2010	8/1/2013		2018
6	BLAYTON ES/HORNSBY MS COMPLEX	2.2749	YES			8/1/2010	8/1/2013		2018
7	BLAYTON ES/HORNSBY MS COMPLEX	2.3052	YES			8/1/2010	8/1/2013		2018
8	BLAYTON ES/HORNSBY MS COMPLEX	2.4319	YES			8/1/2010	8/1/2013		2018
9	BLAYTON ES/HORNSBY MS COMPLEX	1.9054	YES			8/1/2010	8/1/2013		2018
41	JAMES RIVER ES	1.6400	YES						2018
42	JAMES RIVER ES	2.1810	YES						2018
19	MATOAKA ES	1.4539	YES					soil test	2018
21	MATOAKA ES	1.6727	YES					soil test	2018
20	MATOAKA ES	1.5684	YES					soil test	2018
27	STONEHOUSE ES	1.9218	YES						2018
28	STONEHOUSE ES	1.8877	YES						2018
30	STONEHOUSE ES	1.6652	YES						2018
29	STONEHOUSE ES	3.0193	YES						2018
	TOTAL	**68.4313**			**38.5977**				

Appendix D

TMDL Action Plan Development

Updated 1/14/14

James City County
TMDL Action Plan Due Dates

The guidance from DEQ[i] for the due date of TMDL action plans is as follows:

- TMDLs approved by the SWCB prior to July 2008 need action plans completed within 24 months of permit coverage.
- If a TMDL was approved by the SWCB after July 2008 and by the EPA prior to June 2013, then the action plan is due within 36 months of permit coverage.
- If the TMDL was approved by EPA after June 2013, then the action plan is due within 36 months of the EPA approval date.

Dates of approval for James City County TMDLs are as follows:

TMDL	**WLA to VAR040037**	**SWCB approval date**	**EPA approval date**
Skiffes Creek/ Warwick River	yes	4/28/09	2/29/08
Mill/Powhatan	yes	7/27/09	4/28/09
Ware/Taskinas/ Skimino	no	9/30/10	3/25/10

Therefore all of the action plans are due within 36 months of permit coverage, which would be a due date of **July 1, 2016.**

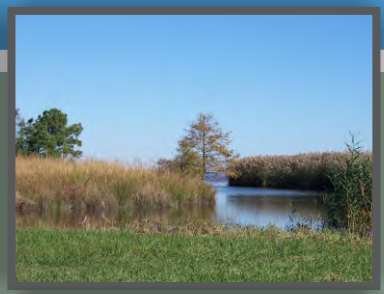
[i] Email from Mark Sauer (DEQ) to Jennifer Tribo (HRPDC) 1/10/14

Appendix E

Hampton Roads Regional Stormwater Management Program
Memorandum of Agreement
June 2013

Hampton Roads Regional Stormwater Management Program

Memorandum of Agreement



HAMPTON ROADS PDC
PLANNING DISTRICT COMMISSION

June 2013

PEP 13-10

HAMPTON ROADS PLANNING DISTRICT COMMISSION
DWIGHT L. FARMER
EXECUTIVE DIRECTOR/SECRETARY

CHESAPEAKE
AMAR DWARKANATH
JAMES E. BAKER
SCOTT MATHESON
DEBBIE RITTER
* ELLA P. WARD

FRANKLIN
* R. RANDY MARTIN
BARRY CHEATHAM

GLOUCESTER COUNTY
* BRENDA G. GARTON
CARTER BORDEN

HAMPTON
MARY BUNTING
WILL J. MOFFETT
* CHRISTOPHER STUART

ISLE OF WIGHT COUNTY
* W. DOUGLAS CASKEY
DELORES DARDEN

JAMES CITY COUNTY
* MARY K. JONES
ROBERT C. MIDDAUGH

NEWPORT NEWS
JAMES M. BOUREY
* MCKINLEY L. PRICE
SHARON P. SCOTT

NORFOLK
ANTHONY L. BURFOOT
* PAUL D. FRAIM
THOMAS R. SMIGIEL
MARCUS JONES
ANGELIA WILLIAMS

POQUOSON
W. EUGENE HUNT, JR.
* J. RANDALL WHEELER

PORTSMOUTH
JOHN L. ROWE, JR.
* KENNETH I. WRIGHT

SOUTHAMPTON COUNTY
* MICHAEL W. JOHNSON
BARRY PORTER

SUFFOLK
* SELENA CUFFEE-GLENN
LINDA T. JOHNSON

SURRY COUNTY
* TYRONE W. FRANKLIN
JOHN M. SEWARD

VIRGINIA BEACH
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BARBARA M. HENLEY
* LOUIS R. JONES
JOHN MOSS
AMELIA ROSS-HAMMOND
JAMES K. SPORE
JOHN E. UHRIN

WILLIAMSBURG
CLYDE A. HAULMAN
* JACKSON C. TUTTLE

YORK COUNTY
* JAMES O. McREYNOLDS
THOMAS G. SHEPPERD, JR.

*EXECUTIVE COMMITTEE MEMBER

PROJECT STAFF

RANDY R. KEATON	HRPDC DEPUTY EXECUTIVE DIRECTOR
WHITNEY KATCHMARK	PRINCIPAL WAER RESOURCES ENGINEER
JENNIFER TRIBO	SENIOR WATER RESOURCES PLANNER
TIFFANY SMITH	WATER RESOURCES PLANNER
MICHAEL LONG	GENERAL SERVICES MANAGER
CHRISTOPHER VAIGNEUR	ASSISTANT GENERAL SERVICES MANAGER
JENNIFER COLEMAN	ADMINISTRATIVE ASSISTANT

MEMORANDUM OF AGREEMENT
ESTABLISHING THE
HAMPTON ROADS REGIONAL STORMWATER MANAGEMENT PROGRAM

WHEREAS, Section 15.2-4200 of the Code of Virginia enables local governments to establish Planning District Commissions; and

WHEREAS, the eighteen local governments that are signatories to this Agreement have acted, in accordance with Section 15.2-4200 of the Code of Virginia, to establish the Hampton Roads Planning District Commission (HRPDC); and

WHEREAS, the HRPDC has been requested and has undertaken various studies to support local government stormwater management programs, including compliance with Virginia Stormwater Management Program (VSMP) Municipal Separate Storm Sewer (MS4) Permits; and

WHEREAS, the signatory local governments have requested the HRPDC to administer and coordinate a regional stormwater management program; and

WHEREAS, pursuant to the Clean Water Act, the U.S. Environmental Protection Agency (EPA) has promulgated implementing regulations, 40 Code of Federal Regulations Part 122, which established the National Pollutant Discharge Elimination System (NPDES) Permits for Municipal Separate Storm Sewer System (MS4) Discharges; and

WHEREAS, pursuant to the Virginia Stormwater Management Act, 10.1-603.1, et. seq. of the Code of Virginia, 1950 As Amended, the Board of Soil and Water Conservation has promulgated implementing regulations 4 VAC 50-60, et. seq., which establish the requirements that localities obtain permits for their MS4 discharges; and,

WHEREAS, the majority of the eighteen signatory local governments are required by their MS4 permits to conduct certain activities, including reporting on their discharges, conducting public information and education programs, and certain other activities; and

WHEREAS, the Water Quality Monitoring and Reporting Act and implementing regulations promulgated by the State Water Control Board establish requirements for the preparation of Total Maximum Daily Load (TMDL) Implementation Plans, which apply to activities conducted by localities in general as well as activities conducted in implementing MS4 permit requirements; and,

WHEREAS, the Chesapeake Bay Preservation Act and the Virginia Erosion and Sediment Control Law and implementing regulations also establish stormwater management requirements that govern one or more of the eighteen signatory local governments; and,

WHEREAS, sixteen local governments and the HRPDC executed the Memorandum of Agreement Establishing the Hampton Roads Regional Stormwater Management Program on September 5, 2003 and that Agreement expired on December 31, 2007; and,

WHEREAS, eighteen local governments and the HRPDC executed the Memorandum of Agreement Establishing the Hampton Roads Regional Stormwater Management Program on March 6, 2008 and that Agreement expires on June 30, 2013,

NOW THEREFORE, the signatory parties enter into the following Agreement.

This Memorandum of Agreement entered into this first day of July 2013, among and between the eighteen local governments in Hampton Roads and the HRPDC, establishes and maintains the Hampton Roads Regional Stormwater Management Program.

BASIC PREMISES

All local governments in Hampton Roads operate stormwater management programs.

The Cities of Chesapeake, Hampton, Newport News, Norfolk, Portsmouth and Virginia Beach received VPDES Permits in 1996. Those permits, which were renewed in 2001, govern the discharges from their MS4s to waters of the state and impose certain operational and reporting requirements on those systems. In 2005, these permits were converted to VSMP permits. These permits must be renewed on a five (5) year basis and the localities applied for renewed permits in 2005. Localities continue to operate programs under administratively continued permits. Permit renewals are expected in 2014.

The Cities of Poquoson, Suffolk and Williamsburg and the Counties of Gloucester, Isle of Wight, James City, and York were all identified by the EPA as requiring VPDES permits under Phase II of the MS4 regulations. Those localities that operate MS4s obtained VPDES permits in March 2003. Those permits also imposed certain operational and reporting requirements on those systems. In 2005, these permits were converted to VSMP permits. These permits must be renewed on a five (5) year basis with the next renewal planned for 2013.

Although Gloucester County was initially identified by the EPA as requiring a Phase II MS4 permit, it was subsequently determined that permit coverage for Gloucester County was not required.

The City of Franklin, the Counties of Gloucester, Southampton and Surry and the Towns of Smithfield and Windsor are governed by stormwater management requirements established under the Virginia Stormwater Management Act and the Virginia Erosion and Sediment Control Law. The Chesapeake Bay Preservation Act also governs Gloucester and Surry Counties and the Towns of Smithfield and Windsor.

As of July 1, 2014, all localities must develop stormwater management programs that meet the minimum requirements established in the Virginia Stormwater Management Act. The Virginia Stormwater Management Act imposes operational and reporting requirements on all localities that are required to implement stormwater management programs.

The local governments are interested in managing stormwater in a manner which

protects and does not degrade waters of the state and which meets locally established quality of life goals and objectives. The Clean Water Act and the VSMP require that stormwater quantity and quality be managed to the maximum extent practicable.

In carrying out their stormwater management responsibilities, the aforementioned local governments have developed a consensus on regional goals to guide the operation of their stormwater management programs. Initially, approved by the HRPDC at its Executive Committee Meeting of September 15, 1999, they are:

1. Manage stormwater quantity and quality to the maximum extent practicable (MEP)

    - Implement best management practices (BMP) and retrofit flood control projects to provide water quality benefits.
    - Support site planning and plan review activities.
    - Manage pesticide, herbicide and fertilizer applications.

2. Implement public information activities to increase citizen awareness and support for the program.

3. Meet the following needs of citizens:

    - Address flooding and drainage problems.
    - Maintain the stormwater infrastructure.
    - Protect waterways.
    - Provide the appropriate funding for the program.

4. Implement cost-effective and flexible program components.

5. Satisfy MS4 stormwater permit requirements:

    - Enhance erosion and sedimentation control.
    - Manage illicit discharges, spill response, and remediation.

This Agreement establishes the administrative framework, which will be used by the local governments in Hampton Roads to address certain stormwater management requirements under the above-cited state and federal laws and regulations.

Eighteen local governments in the Hampton Roads Region will be participants in and signatories to the Agreement.

HRPDC RESPONSIBILITIES

Under the terms of this Agreement, the HRPDC staff is responsible for the following:

- Provide technical support and policy analysis related to stormwater and water quality issues to local government staff.

- Provide the necessary administrative, technical and clerical resources to support program activities in order to ensure that the MS4 permit-holding cities and counties meet applicable stormwater management requirements.

- Prepare an annual work program and budget for the Hampton Roads Regional Stormwater Management Program. The annual work program will be incorporated into the HRPDC Unified Planning Work Program and the annual budget will be incorporated into the HRPDC budget.

- Assist the signatories in coordinating reporting on stormwater related activities to other state and federal agencies to ensure that program requirements are met in a cost-effective manner, which minimizes duplicative reporting and the administrative burden on the signatories.

- Conduct a regional stormwater education program. This will include public education activities and may include outreach to specific economic sectors and groups. The stormwater education subcommittee of askHRGreen.org will be responsible for guiding the development of original materials, including publications, media advertising and promotional items. This may also include development of locality-specific materials or coordination of bulk purchases. The stormwater education subcommittee of askHRGreen.org will coordinate with HRPDC staff on the educational and outreach components of the Hampton Roads Regional Stormwater Management Program.

- Develop and conduct a regional training program for municipal employees, contractors, civic leaders and other interested parties. The training program will emphasize stormwater management, pollution prevention and permit issues.

- Respond equitably and in a timely fashion to requests from all signatory local governments for technical assistance. The time frame for responses will be based on experience, the complexity of individual requests and the overall work load of program staff.

- Provide other technical support, as requested, to the signatory local governments.

- Upon request from one or more participating localities, conduct technical studies to support compliance by the localities with MS4 permit requirements and VSMP program requirements.

- Facilitate development of multi-jurisdictional management plans for shared watersheds, as requested.

- Take steps, in conjunction with the signatory local governments, to obtain financial support for program activities from outside sources, including state, federal and private grants, to the extent that this may be accomplished without creating a conflict of interest, as determined by the signatory local governments.

- Contract with and manage consultants, including both private firms and academic

institutions, to support the regional program, including provision of requested services to local governments in excess of the common program elements.

- Represent the Hampton Roads Regional Stormwater Management Program at federal, state, regional and local governmental, civic, professional and political organizations, agencies, and committees.

- Provide technical and administrative support, as appropriate, to those localities that are required to develop stormwater management programs to meet VSMP requirements, but that are not required to obtain MS4 permits for their stormwater discharges.

- Prepare annual program reports, or components thereof, which comply with the provisions of the MS4 permits and stormwater management programs of the signatory localities.

- Facilitate local government involvement in TMDL studies being prepared through the Virginia Department of Environmental Quality and EPA and facilitate preparation of TMDL Implementation Plans for impaired waters in the Hampton Roads Region as requested.

- Prepare an annual report of activities undertaken through the Hampton Roads Stormwater Management Program. This report will include summaries of related activities undertaken on a cooperative basis by the signatories.

- Identify state and federal regulatory actions that may affect local government stormwater programs, serve on regulatory advisory panels (RAPs) as necessary, conduct policy analysis, and develop policy recommendations on behalf of the HRPDC.

- Coordinate the compilation of regional data for MS4 permit annual reports to the appropriate regulatory authority.

LOCAL GOVERNMENT RESPONSIBILITIES

Under the terms of the Agreement, the signatory local governments are responsible for the following:

- Appoint one voting member and alternates, as appropriate, to the Regional Environmental Advisory Committee to represent the local government stormwater and water quality related concerns. Generally, the voting representative should be the MS4 permit or program administrator.

- Appoint a representative and alternates, as appropriate, to the stormwater education subcommittee of askHRGreen.org.

Provide, in a timely fashion, all locally generated data required by their MS4 permits and such other data as may be necessary to accomplish locally requested services.

- Provide timely technical review of HRPDC analyses and conclusions.

- Participate in regional efforts to conduct public outreach and education activities in regard to the state's TMDL study process and efforts to develop TMDL Implementation Plans for impaired waters lying within the locality or within watersheds that include the locality.

- Provide input on regulatory issues to HRPDC staff and serve on RAPs or provide input to the regional RAP representative as appropriate.

- Support HRPDC efforts to obtain additional funding to support the regional programs, to the extent that this may be accomplished without creating a conflict of interest, as determined by the signatory local governments.

- Provide annual funding to support the agreed-upon regional program.

METHOD OF FINANCING

Program costs will be allocated on a pro-rata basis among the local governments. Annual costs will be allocated according to a formula reflecting the local share of regional population. Costs for additional projects or services will be allocated based on a formula developed by the HRPDC staff and approved by the HRPDC with the concurrence of the signatory local governments. The most current estimate of population developed by the Weldon Cooper Center for Public Service/Virginia Employment Commission will be used as the population base for allocating program costs. Local contributions may be adjusted on an annual basis to reflect program experience and projected program expenditures necessary to satisfy permit requirements and local needs. A locality will not be assessed for any services which it refuses in writing.

Individual local governments may request specific services from the HRPDC, which are in excess of the program elements common to all participants. The cost of such services will be borne by the requesting locality or localities.

Financial support from other entities, such as state and federal agencies, and the private sector, may be sought and obtained to support the activities of the Hampton Roads Regional Stormwater Management Program , to the extent that this may be accomplished without creating a conflict of interest, as determined by the signatory local governments..

AVAILABILITY OF FUNDS

Performance by the HRPDC of its responsibilities under this Agreement is subject to the availability of funding from the signatory local governments. Failure of the local governments to provide the necessary funding to support these activities will constitute a Notice to Modify or Terminate the Agreement.

MODIFICATIONS

Modifications to this Memorandum of Agreement must be submitted in writing, approved by the HRPDC, and accepted by all signatories.

DURATION AND TERMINATION

This Agreement will have a term of five years, extending from the date of full execution of the renewed Agreement by the signatories or June 30, 2013, whichever occurs last through June 30, 2018. To conform to local government charter and Virginia Code requirements, the funding provisions of this Agreement will be subject to annual appropriations.

No later than January 1, 2018, the signatories will institute a formal reevaluation of the Hampton Roads Regional Stormwater Management Program. This reevaluation will serve as the basis for appropriate modification of the Agreement and the Hampton Roads Regional Stormwater Management Program.

Any signatory may terminate its participation in the Hampton Roads Regional Stormwater Management Program by written Notice To Terminate to all other parties. Such termination will be effective with the start of the following Fiscal Year. Depending upon the terms of individual VSMP permits, termination of participation in the Hampton Roads Regional Stormwater Management Program in the middle of a permit term may result in changes to permit conditions and require renegotiation of the individual locality's VSMP permit from the state (Virginia Department of Conservation and Recreation).

OWNERSHIP OF PROPERTY

It is not the intent of the signatories that the Memorandum of Agreement will result in the purchase, ownership, leasing, holding or conveying of any real property.

INDEMNITY

It is the intent of the signatories that no signatory will be held liable for any damage or associated penalties caused by or associated with the failure of any other signatory to discharge its duties or to exercise due diligence in discharging its duties under this Agreement, and that no signatory, by entering this Agreement, waives any defenses or immunities available to it at law, including, but not limited to, those set forth in Section 15.2-970 of the Code of Virginia.

It is the intent of the signatories that no signatory will be held liable for any damage or associated penalties caused by or associated with the failure of any other signatory to comply with the terms and conditions of the signatory's VSMP permit.

IN WITNESS THEREOF, the Chief Administrative Officer of the local governments and the Executive Director of the Hampton Roads Planning District Commission hereby execute this Agreement.

City of Chesapeake

By: _____
City Manager

Date: 5/30/13

James City County

By: _____

Date: 6/28/2012

City of Franklin

By: _____

Date: 8/19/13

City of Newport News

By: _____

Date: 7/22/13

Gloucester County

By: _____

Date: July 3, 2013

City of Norfolk

By: _____
Marcus Jones, City Manager

Date: 6/17/13

City of Hampton

By: _____
Mary B. Bunting, City Manager

Date: 6/13/13

City of Poquoson

By: _____
Mayor

Date: 4/22/13

Isle of Wight County

_____
W. Douglas Caskey
County Administrator

City of Portsmouth

By: _____

Date: JULY 16, 2013

Southampton County

By: _____

Date: 8/28/2013

City of Williamsburg

By: _____

Date: 7/11/13

City of Suffolk

By: _____

Date: 6/6/13

York County

By: _____

Date: 6-14-13

Surry County

By: _____

Date: 7-11-13

Town of Smithfield

By: _____
Peter M. Stephenson
Smith Field Town Manager

Date: June 4, 2013

City of Virginia Beach

By: _____
City Manager or Designee

Date: May 30, 2013

Hampton Roads Planning District Commission

By: _____

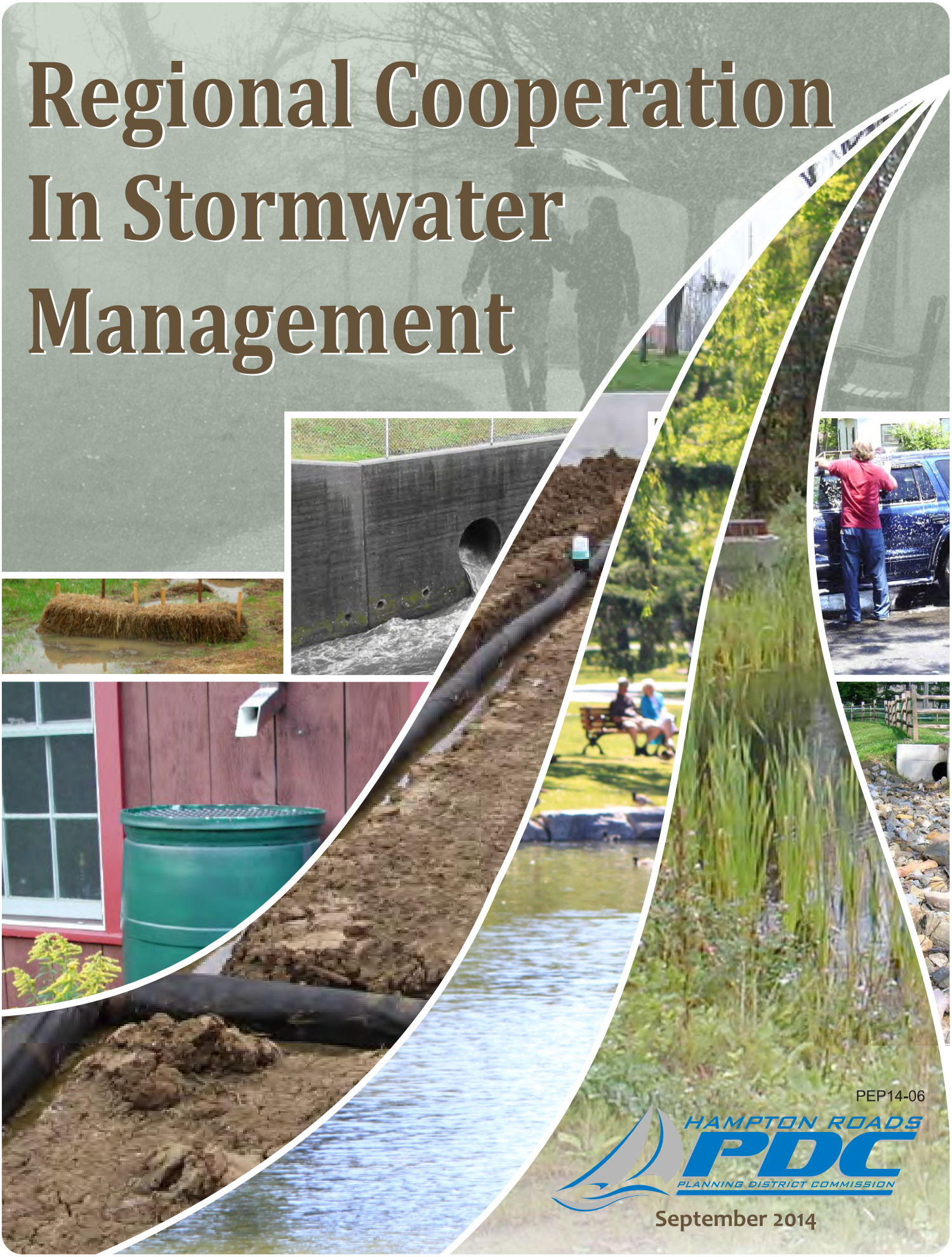
Date: 9/11/13

Revised April 3, 2013

Appendix F

Regional Cooperation in Stormwater Management
Fiscal Year 2013 – 2014, A Status Report
Hampton Roads Planning District Commission

Regional Cooperation In Stormwater Management



PEP14-06

HAMPTON ROADS PDC
PLANNING DISTRICT COMMISSION

September 2014

HAMPTON ROADS PLANNING DISTRICT COMMISSION
RANDY R. KEATON
INTERIM EXECUTIVE DIRECTOR

CHESAPEAKE
JAMES E. BAKER
AMAR DWARKANATH
SCOTT MATHESON
DEBBIE RITTER
ELLA P. WARD

FRANKLIN
BARRY CHEATHAM
R. RANDY MARTIN

GLOUCESTER COUNTY
BRENDA GARTON
JOHN C. MEYER JR.

HAMPTON
MARY BUNTING
WILL J. MOFFETT
GEORGE WALLACE

ISLE OF WIGHT COUNTY
ANNE SEWARD
DELORES DARDEN

JAMES CITY COUNTY
MARY K. JONES
DOUG POWELL

NEWPORT NEWS
JAMES M. BOUREY
McKINLEY L. PRICE
SHARON P. SCOTT

NORFOLK
PAUL D. FRAIM
MARCUS JONES
THOMAS R. SMIGIEL
ANGELIA WILLIAMS
VACANT

Executive Committee Member

POQUOSON
W. EUGENE HUNT JR.
J. RANDALL WHEELER

PORTSMOUTH
JOHN L. ROWE JR.
KENNETH I. WRIGHT

SMITHFIELD
PETER STEPHENSON
T. CARTER WILLIAMS

SOUTHAMPTON COUNTY
MICHAEL W. JOHNSON
BARRY PORTER

SUFFOLK
SELENA CUFFEE-GLENN
LINDA T. JOHNSON

SURRY COUNTY
TYRONE W. FRANKLIN
JOHN M. SEWARD

VIRGINIA BEACH
ROBERT M. DYER
BARBARA M. HENLEY
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JOHN E. UHRIN

WILLIAMSBURG
CLYDE A. HAULMAN
JACKSON C. TUTTLE

YORK COUNTY
JAMES O. McREYNOLDS
THOMAS G. SHEPPERD JR.

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JILLIAN C. SUNDERLAND	WATER RESOURCES PLANNER
MICHAEL LONG	GENERAL SERVICES MANAGER
CHRISTOPHER W. VAIGNEUR	ASSISTANT GENERAL SERVICES MANAGER
JENNIFER COLEMAN	ADMINISTRATIVE ASSISTANT

REGIONAL COOPERATION IN STORMWATER MANAGEMENT

FISCAL YEAR 2013-2014

A STATUS REPORT

This report was included in the HRPDC Work Program for FY 2013-2014, approved by the Commission at its Executive Committee Meeting on April 18, 2013

Prepared by the staff of the
Hampton Roads Planning District Commission
in cooperation with the
Regional Stormwater Workgroup

September 2014

REPORT DOCUMENTATION

TITLE:
Regional Cooperation in Stormwater Management Fiscal Year 2013-2014: A Status Report

REPORT DATE
September 2014

GRANT/SPONSORING AGENCY
LOCAL FUNDS

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ABSTRACT

This document describes cooperative activities related to stormwater management undertaken by Hampton Roads local governments during Fiscal Year 2013-2014. Activities described include the regional information exchange process, public information and education, legislative and regulatory issues, cooperative regional studies and related programs. This document is used by the region's twelve localities with stormwater permits to assist them in meeting their permit requirements.

ACKNOWLEDGMENTS

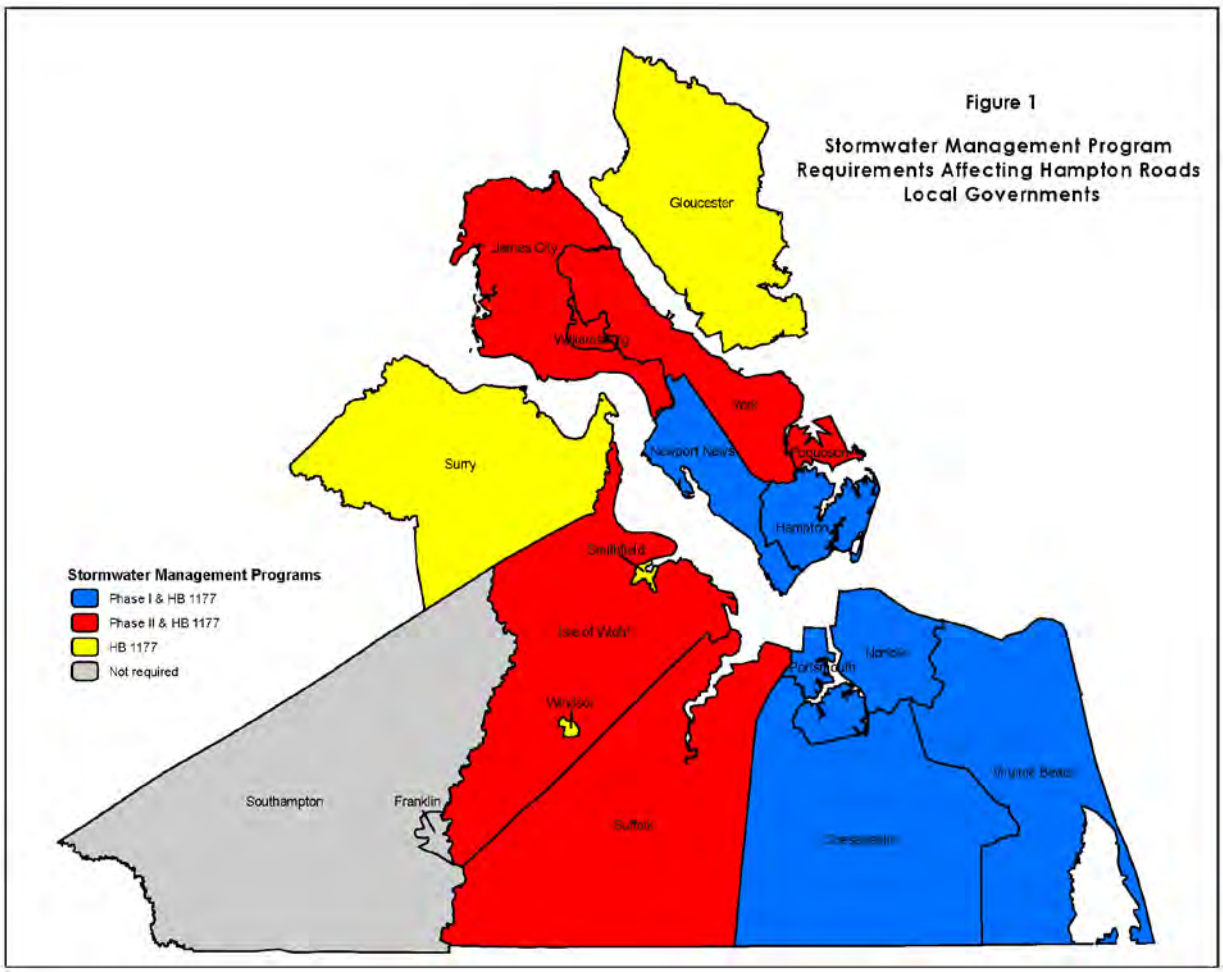
The Hampton Roads Planning District Commission, in cooperation with the regional Stormwater Workgroup, prepared this report.

Preparation of this report was included in the HRPDC Unified Planning Work Program for FY 2013-2014, approved by the Commission at its Executive Committee Meeting of April 18, 2013.

The sixteen member local governments through the HRPDC Regional Stormwater Management Program provided funding.

INTRODUCTION

Working through the Hampton Roads Planning District Commission, the region's sixteen member cities and counties (Figure 1) cooperated on a variety of stormwater management activities during Fiscal Year 2013-2014. This cooperative effort has been underway as a formal adjunct to the Virginia Pollutant Discharge Elimination System Permits (VPDES) for Municipal Separate Storm Sewer Systems (MS4) held by the Cities of Chesapeake, Hampton, Newport News, Norfolk, Portsmouth and Virginia Beach since Fiscal Year 1995-1996. The Cities of Suffolk, Poquoson, Williamsburg, and James City County, Isle of Wight County, and York County joined in 2002 to coordinate Phase II MS4 permit applications. Cooperative activities documented in this report represent a continuation of an ongoing effort, which has involved concerted activity since 1992.



REGIONAL STORMWATER MANAGEMENT PROGRAM GOALS

The HRPDC and local stormwater staffs undertook a comprehensive effort in FY 1998-1999, called the Regional Loading Study. The project included developing a set of regional stormwater management goals to guide the regional program. The goals were presented to

and adopted by the HRPDC at its Executive Committee Meeting in September 1999. They were reaffirmed in the January 2003 approval of the "Memorandum of Agreement (MOA) Establishing the Hampton Roads Regional Stormwater Management Program" and the renewal of the MOA in 2008 and 2013. The adopted Regional Stormwater Management Program Goals, which guide the regional program, are:

- Manage stormwater quantity and quality to the maximum extent practicable (MEP).
  - Implement BMPs and retrofit flood control projects to provide water quality benefits.
  - Support site planning and plan review activities.
  - Manage pesticide, herbicide and fertilizer applications.
- Implement public information activities to increase citizen awareness and support for the program.
- Meet the following needs of citizens:
  - Address flooding and drainage problems.
  - Maintain the stormwater infrastructure.
  - Protect waterways.
  - Provide the appropriate funding for the program.
- Implement cost-effective and flexible program components.
- Satisfy VPDES stormwater permit requirements.
  - Enhance erosion and sedimentation control.
  - Manage illicit discharges, spill response, and remediation.

THE REGIONAL PROGRAM

The Regional Stormwater Management Program initially focused on activities that supported the permit compliance efforts of the six communities with Phase I VPDES Stormwater System Permits, technical assistance to the region's non-permitted communities and regional education and training to support all of the communities. The program has expanded to include the needs of the six communities with Phase II VPDES MS4 permits and the development of locally administered Stormwater Programs which were required starting July 1, 2014.

Phase I Localities

The efforts of the Phase I localities this year have focused on tracking regulatory changes to the Construction General Permit and preparing for local program changes required by revisions of the Virginia Stormwater Management Regulations. Localities have continued to follow the Phase I MS4 permit renewal process in Virginia. The Department of Environmental Quality (DEQ) has reissued the Arlington County permit and set a schedule to reissue all the Phase I

MS4 permits by December 31, 2014. HRPDC staff worked with the localities to review draft permits.

Phase II Localities

In addition to participating in regional efforts related to the Chesapeake Bay TMDL and the revision of the Virginia Stormwater Management Regulations, the Phase II localities followed the development of the Chesapeake Bay TMDL Special Condition Guidance. The Phase II General Permit was reissued on July 1, 2013 and required localities to develop an Action Plan within 48 months to address their waste load allocations in the Chesapeake Bay TMDL. Hampton Roads' Phase II localities were represented on DEQ's technical advisory committee, and HRPDC submitted comments on several drafts on behalf of the localities. During 2013-2014, the Phase II localities also focused on revising their program plans, developing a training plan for stormwater staff, and meeting new education and outreach requirements. HRPDC staff developed a regional training strategy for pollution prevention and will develop a regional training library in FY2015. AskHRgreen.org piloted regional media campaigns for pet waste reduction, proper lawn maintenance, and reduction of fats, oils, and grease. These campaigns will serve to meet Phase II permit requirements for education and outreach for the remainder of this permit cycle.

INFORMATION EXCHANGE

The cornerstone of the Regional Stormwater Management Committee's activities continues to be the exchange of information. This is accomplished through regular monthly meetings to address topics of regional importance, as well as crosscutting issues that affect local stormwater, planning, public works and public utilities staff. In addition, various agencies and organizations utilize this regional forum to engage and inform local governments, as well as to gather feedback.

Monthly Meetings

The sixteen communities participate in the HRPDC Regional Stormwater Program and their staffs meet twice a month. The Stormwater Workgroup meetings provide an opportunity for local stormwater managers to exchange information about successful program activities, utility structures and policies, and technical challenges. The HRPDC Joint Environmental Committee, now referred to as the Regional Environmental Committee, meetings include local stormwater and planning staff plus cooperating agencies such as Department of Conservation and Recreation (DCR), Department of Environmental Quality (DEQ), Virginia Department of Transportation, Hampton Roads Sanitation District, and the US Navy.

Increasingly, the region's localities are affected by and involved in the state's TMDL (Total Maximum Daily Load) Studies and Implementation Plan processes for the Chesapeake Bay and locally impaired water bodies. Issues associated with these programs are also addressed during the monthly meetings. In FY14, the Stormwater Workgroup discussed and provided input to DEQ on the PCB TMDL for the Lower James and Elizabeth River and the bacteria TMDL for the Back and Poquoson Rivers.

State and Federal Agency Program Briefings

Representatives of state and federal agencies frequently brief the Committee on developing issues, regulatory guidance and technical programs. During the year, the Committee was briefed by representatives of the U.S. Army Research and Development Center on the risks to Naval Station Norfolk from sea level rise and climate change, by DEQ staff on the development of TMDLs for local waters, and by DEQ staff on the new Chesapeake Bay Watershed Agreement.

Watershed Roundtables

The Watershed Roundtable approach is Virginia's program to encourage collaboration and information sharing between the public and private sector on nonpoint source pollution management. HRPDC leads the Lower James River (Hampton Roads) Watershed Roundtable and participates in the York River Watershed Council, the Middle James River Roundtable, and the Albemarle-Chowan Roundtable. Members of the Stormwater Workgroup participate in the Hampton Roads Roundtables, along with representatives from other local government departments, regional and state agencies, Soil and Water Conservation Districts and private organizations.

PUBLIC EDUCATION

askHRgreen.org

To support development and operation of the stormwater education program, the HR STORM committee consisting of local stormwater education/public information staff was established in 1997. Beginning in FY11, the HRPDC environmental education programs were combined into a single public awareness program and central resource for environmental education in Hampton Roads known as askHRgreen.org. In June 2011, the askHRgreen.org website launched. The website contains information on earth-friendly landscaping ideas and pointers for keeping local waterways clean, recycling tips, and simple steps to make local living easy on the environment. It also includes a blog written by a team of local experts who work in the region's municipal utility and environmental divisions.

The stormwater subcommittee continues to meet on a monthly basis to discuss education priorities for stormwater. In FY14, the subcommittee focused on ensuring that the regional education campaign fulfills the outreach requirements on the current Phase II General Permit issued July 1, 2013. The subcommittee also started a program to distribute pet waste stations to interested community members throughout Hampton Roads. The activities conducted through the askHRgreen.org campaign for the year are summarized in the askHRgreen.org Annual Report.

TRAINING

Since 2004, the HRPDC staff has worked with the six Phase II communities to develop and conduct training programs for local government staff. This year HRPDC coordinated with DEQ

to host training linked to new local program requirements and certifications. HRPDC hosted several webinars on stormwater BMP design and maintenance and emerging policy approaches like green infrastructure. These webinars allow localities to save money by registering once as a group and local staff has an opportunity to discuss the webinar's recommendations and their applicability to the region.

Training Topic	Last Offered	Previous Dates
Fleet Maintenance	March 2005	
Landscaping	March 2006	
IDDE	Oct 2009	Feb 2008, May 2007
General Pollution Prevention	May 2013	March 2004, Feb 2009
Parks & Open Space Mgt.	March 2011	
LID Practices	June 2010	
Erosion & Sediment Control	May 2013	
Pollution Prevention and Spill Response for Municipal Operations	May 2013	

LEGISLATIVE & REGULATORY MONITORING

This element of the program involves monitoring state and federal legislative and regulatory activities that may impact local stormwater management programs. Based on this monitoring, the HRPDC staff develops briefing materials for use by the localities, including consideration by the governing bodies. As appropriate, the HRPDC staff in cooperation with the Committee develops consensus positions for consideration by the Commission and local governments. The level of effort devoted to this element has increased significantly over the past six years. During 2013-2014, the regional emphasis was on preparing to rollout local stormwater programs and the development of the draft Chesapeake Bay TMDL Action Plan Guidance.

Virginia Stormwater Regulations

Revisions to the Stormwater Regulations were approved by the Soil and Water Conservation Board in May 2011 and were implemented by localities prior to July 1, 2014. In FY14, HRPDC and local government staff continued to serve on the State Stormwater Local Government Advisory Committee. The committee provided input to DEQ on implementation of Local Stormwater Programs including challenges related to the management of grandfathered permits and defining the permit process for "common plans of development".

The region is also currently represented on the State Stormwater BMP Clearinghouse Committee which continues to discuss BMP listing criteria, Clearinghouse website content, and database design. Regional input has been focused on defining the proposed role of the Clearinghouse in approving non-proprietary BMP pollutant removal efficiencies.

HRPDC and local staff have also participated in the regulatory advisory panels for the

Construction General Permit and Nutrient Trading. In each case, the panel representative from the region provided updates to the Stormwater Technical Workgroup or Regional Environmental Committee, collected input, and made recommendations to the panel.

Chesapeake Bay TMDL and Virginia Phase II Implementation Plan

The Environmental Protection Agency established a Total Maximum Daily Load for the Chesapeake Bay on December 29, 2010. In November 2010, Virginia submitted its Phase I Watershed Implementation Plan (WIP) that outlined the statewide strategies that would be implemented by each source sector. The Phase II WIP outlined the management actions that will be implemented by local governments. Virginia submitted its final Phase II WIP to EPA on March 30, 2012.

Virginia asked localities to submit input for the Phase II WIP including resource needs. As part of the regional input, the "Hampton Roads Regional Planning Framework, Scenario, and Strategies" report was submitted to the state. In FY14, several issues identified in the report were addressed by the Chesapeake Bay Program. HRPDC and local staff participated in workgroups and expert panels to support research on these alternate BMPs and incorporation of local land use data into the Bay model. During FY14, HRPDC staff participated in the advisory committee for the development of guidance for the Chesapeake Bay TMDL Action Plan provision being placed in MS4 permits to meet TMDL requirements. During the 2014 General Assembly, HRPDC staff worked to allocate funds from the Water Quality Improvement Fund (WQIF) for the development of statewide high resolution land use/land cover data. This data will be utilized by the Chesapeake Bay Program to improve the representation of land use in the Bay Watershed Model.

REGIONAL STUDIES

Water Quality Monitoring Study

In FY14, the HRPDC and the Phase I localities partnered with the USGS and HRSD to kick-off a water quality monitoring study. The purpose of the study is to develop more accurate Coastal Plain nutrient and sediment loading rates and a basic understanding of how these loads vary by land use type. This information will be compared to the loading rates in the Chesapeake Bay Watershed Model and used to improve the accuracy of the Model in the Coastal Plain. It is anticipated that the monitoring site locations will be selected and the stations installed during FY15. Samples will be collected and analyzed for at least five years.

Stormwater Program Matrix

A comprehensive stormwater program matrix, including Phase I and Phase II communities, was developed in FY 2000 which addresses both utility and programmatic issues. HRPDC staff coordinates with local government stormwater program staff to update the information in the matrix annually.

Land and Water Quality Protection Study

In FY13, HRPDC worked on the first and second phase of the Land & Water Quality Protection

study. During the first phase of the project, HRPDC staff analyzed the local consequences of the new water quality requirements for urban and transitional communities and identified available tools to enable localities to meet these requirements while avoiding negative impacts on natural resources. The second phase of the project focused on working with two pilot localities to identify the most appropriate tools and test their application. In FY14, HRPDC staff worked on the third and final phase of the project, which will result in a coastal plain BMP guidance, recommendations for changes to plans and ordinances in the pilot localities, and a modeling effort to evaluate the water quality impacts of various growth scenarios. The study will be completed in FY15.

TECHNICAL ASSISTANCE

The HRPDC continues to serve as a clearinghouse for technical assistance to the localities, as well as a point of contact in arranging short-term assistance from one locality to another. The HRPDC Committee process also provides a forum, allowing state regulatory agency staff to meet with the region's localities to discuss evolving stormwater management regulations. In addition, the HRPDC staff provides technical information and advice to all of the participating localities on a wide variety of issues upon request. In FY14, technical assistance to localities was focused on disseminating information related to the Chesapeake Bay TMDL, Virginia's new stormwater regulations, and evaluating the real world challenges of interpreting and implementing the local stormwater programs.

MEMORANDUM OF AGREEMENT

The Regional Stormwater Management Program was established in 1996 as a formal program of the Hampton Roads Planning District Commission with support and participation from the sixteen member local governments. A Memorandum of Agreement (MOA) was created that outlines the basic regulatory and programmatic premises for the cooperative program, incorporating the Regional Program Goals, described earlier in this report. The MOA establishes a division of program responsibilities among the HRPDC and the participating localities, addresses questions of legal liability for program implementation, and includes other general provisions. The MOA is reauthorized by the signatories every five years and was renewed in 2013.

PERMIT ADMINISTRATION AND REPORTING SYSTEM (PARS)

In an effort to streamline reporting and capture data more effectively for local governments, the twelve permitted localities have pooled resources to develop the Permit Administration and Reporting System, or PARS. The region contracted with URS Corporation to develop a web-based data tracking and reporting system. The system is being utilized by local governments to catalog development sites and their associated best management practices (BMPs). The system also enables localities to capture inspection information, catalog stormwater outfalls, document illicit discharge investigations and record public education information. Users can query a variety of reports to satisfy the reporting requirements of their

stormwater permits. In FY12 and FY13, the Stormwater Workgroup reviewed the potential for PARS to track and report the implementation of Chesapeake Bay TMDL strategies, as the Chesapeake Bay Program and DEQ continued to refine the data reporting requirements for BMPs. In FY14, the Stormwater Workgroup expressed interest in obtaining a quote from URS to update PARS to meet their current needs. URS submitted a scope of work in July 2014 that was approved by the Regional Environmental Committee in August 2014.

RELATED PROGRAMS AND PROJECTS

In various combinations, the twelve (12) MS4 communities, as well as their non-permitted counterpart communities, participate in a wide variety of related programs. These programs are noted here because of their relationship with stormwater management.

Chesapeake Bay Program

Over the past several years, the Hampton Roads Region has devoted considerable attention to the ongoing Chesapeake Bay Program (CBP). To facilitate local government participation in Chesapeake Bay Program activities, HRPDC and locality staff have participated in the deliberations of many CBP committees and work groups dealing with urban stormwater, land development, watershed planning, land use development, modeling and local government's role in the Bay Program. Since the development of the Chesapeake Bay TMDL in December 2010, HRPDC staff has continued to follow the activities of the CBP primarily through participation in the Urban Stormwater Workgroup. In FY 2014, local government stormwater staff served on the Street sweeping and IDDE panels that develop Bay Program efficiencies for new stormwater best management practices. HRPDC staff co-chaired the Bay Program's Land Use Workgroup.

Chesapeake Bay Preservation Act Program

Fourteen of the sixteen member localities continue to implement programs in response to the Virginia Chesapeake Bay Preservation Act. Stormwater management is one component of those programs. Although the CBPA is not formally part of the multi-state Chesapeake Bay Program, described above, it serves as one element of local government implementation actions to comply with their MS4 Permits and to meet the goals of the Bay Program.

Water Quality Management Planning

The state is developing a substantial number of TMDL (Total Maximum Daily Load) Studies and subsequent development of TMDL Implementation Plans. This work follows from the classification of the waters by the state as meeting or failing to meet water quality standards. Water bodies that fail to meet water quality standards are classified as "impaired," triggering the requirement to prepare the TMDL study. The HRPDC staff has coordinated regional involvement in the "impaired waters" listing process. This has entailed providing opportunities through the Regional Environmental Committee for education of local government staff on the TMDL process, development of technical comments on the "impaired waters" list and response to the development of TMDLs themselves.

To assist the region's localities in addressing this requirement and ensuring that Implementation Plans are feasible, the HRPDC staff is working with DEQ to devise a cooperative regional partnership to coordinate the TMDL study process with the localities and to develop the required Implementation Plans. This year, Chesapeake, Norfolk, Portsmouth, and Virginia Beach partnered with DEQ, HRPDC, and HRSD to collect stormwater samples from the Elizabeth River watershed and analyze them for PCB concentration. The information will be used in the development of the Lower James and Elizabeth River PCB TMDL.

Sanitary Sewer Overflows

In late 2004, HRPDC staff began implementing an electronic reporting and record keeping system known as the Sanitary Sewer Overflow Reporting System (SSORS). SSORS enables localities to communicate information about sanitary sewer overflows across departmental lines, allowing for easier reporting. The regional fats, oils, and grease abatement program (HR FOG) was created to help wastewater utilities by decreasing overflows due to FOG blockages. However, the FOG education program also benefits the stormwater program because of the potential for FOG to cause illicit discharges to the stormwater system.

CONCLUSION

Through the Hampton Roads Planning District Commission, the sixteen localities of Hampton Roads have established a comprehensive Regional Stormwater Management Program. This program provides technical assistance, coordination, comprehensive technical studies and policy analyses and stormwater education. The Regional Stormwater Management Program enables the region's localities to participate actively and effectively in state and federal regulatory matters. It has enhanced the ability of the twelve localities with VPDES Permits for their Municipal Separate Storm Sewer Systems to comply with permit requirements.

The Regional Stormwater Management Program provides a mechanism through which the strengths of the sixteen local stormwater programs can be mutually supportive. It allows for cost-effective compliance with permit requirements, resolution of citizen concerns with stormwater drainage and water quality matters, and achievement of improved environmental quality throughout the Hampton Roads Region.