

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

Program Year Five Annual Report

July 2012 – June 2013

James City County



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INTRODUCTION

In accordance with guidance contained in a letter dated June 29, 2009, from the Department of Conservation and Recreation (DCR), an annual report is hereby submitted for James City County's General Permit for Small Municipal Separate Storm Sewer Systems (MS4). As additional guidance was not received from DCR for Program Years 2 through 5 (PY2 through PY5), the PY1 (July 1, 2008 to June 30, 2009) format is being used to prepare the PY5 annual report.

The report presents the information requested in items (a) through (m) of the DCR letter. The majority of the report is a response to item (b) of the letter and consists of an update to the MS4 Program Plan spreadsheet developed and submitted to DCR in January 2009, as revised on June 28, 2010. The spreadsheet presents updates to the various Program Plan measureable goals with the accomplishments of Program Year 5 beginning on July 1, 2012, and extending to June 30, 2013. Several of the updates required elaboration that was beyond the ability to place in the spreadsheet and are included in Appendices C-1 through C-6. 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 Five – July 1, 2012 to June 30, 2013
- 3) There are no modifications to the County's roles and responsibilities under the permit.
- 4) There have been four new MS4 outfalls added within the County during this fifth permit year at the new Fire Administration building, Jamestown High School, and Mid-County Park. 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 |
|------------------------|-----------------|------------|-------------------------|
| Fire Admin Building | MC070 | JL33 | 3.1 |
| Jamestown High School | PC287 | JL31 | 0.2 |
| Mid-County Park | PC273 | JL31 | 7.1 |
| Mid-County Park | PC288 | JL31 | 1.0 |
| TOTAL | | | 11.4 |

- 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 sampling data collected are showing a larger, more diverse population than has been noticed here in the past. The data suggests that, at this time, the stream maintains a marginal rating for the 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) - The benthic community has grown such that analysis can be performed due to a relative abundance of organisms. The increase in benthic population by itself is an improvement as the previous samples were too small to score properly. Unfortunately, the results of biomonitoring reveal unacceptable water quality.
- 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 consistently scored well, but the last season of monitoring showed reduced water quality.

d. *Planned stormwater activities.* The following stormwater activities are programmed to be undertaken during the next reporting cycle – July 1, 2013 to June 30, 2014.

1. MCM # 1 – Public Education and Outreach on Stormwater Impacts
 - a. With assistance from the citizen members of the Stormwater Program Advisory Committee, finalize development of the County’s public education plan addressing three high-priority 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 JCCPRIDE 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. Update public participation plan to meet new requirements.
3. MCM # 3 – Illicit Discharge Detection and Elimination
 - a. Begin 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 document procedures and protocols used to detect and address illicit discharges to the MS4.
 - e. Evaluate and refine field screening priorities and schedule, based on revised MS4 mapping.
 - f. Review follow-up and enforcement procedures to ensure compliance with permit.
 - g. Continue sanitary sewer system improvements in accordance with the SSO consent order.

4. MCM # 4 – Construction Site Stormwater Runoff Control
 - a. Continue to implement existing program, while updating the program to meet new 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 existing program, while updating the program to meet new state regulations.
 - b. Continue documenting policies and procedures for inspection, plan review, and enforcement.
 - c. Consider and develop any needed policies and procedures to address maintenance of stormwater management facilities on individual lots.
 - 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 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. Identify high priority municipal facilities with potential to contribute pollutants to the MS4 and begin to develop stormwater pollution prevention plans for each facility.
 - b. Evaluate applicable lands where nutrients are applied for nutrient management planning.
 - c. Continue implementing current nutrient management plans.
 - d. Continue employee training activities.
 - e. Develop an enhanced training plan for municipal employees, customizing training to specific work-related needs.
7. TMDL Special Conditions
 - a. Upon receipt of final guidance from DEQ, begin 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. Upon receipt of final guidance from DEQ, begin development of a TMDL action plan for the Chesapeake Bay TMDL, addressing nitrogen, phosphorus and sediment.
8. *Program changes.* There have been no program plan changes for FY 2013. The following changes in best management practices and measureable goals were made prior to this reporting year (PY5). The Program Plan contained in Appendix B incorporates the changes described below.
 1. On May 5, 2010, DCR evaluated James City County’s Program Plan. In response to that meeting, a revised Program Plan was submitted to DCR on June 28, 2010. The detailed response to that review is included in Appendix F.
 2. Item 5.2 – fact sheet/checklist development for the encouragement of LID was transferred from a PY2 requirement to a PY4 and now to a PY5 requirement

primarily in response to the delays in promulgating the state stormwater management regulations and the Runoff Reduction method.

9. *Reliance on other entity.* James City County is relying on the Hampton Roads Planning District Commission (HRPDC) to satisfy some of the permit requirements related to minimum control measure (1) Public Outreach and Education. HRPDC will continue to develop and conduct required training for minimum control measures (3) Illicit Discharge Detection and Elimination, (4) Construction Site Stormwater Runoff Control, (5) Post Construction Stormwater Management, and (6) Pollution Prevention/Good Housekeeping for Municipal Operations. This arrangement is formalized in the Hampton Roads Regional Stormwater Management Program Memorandum of Agreement executed by James City County on June 25, 2013. (See Appendix D.)
10. *Replacement programs.* There are no programs operated by James City County that are intended to replace any of the Minimum Control Measures contained in Section II B of the General Permit.
11. *Section I B 9 requirements.* No requirements at this time as no TMDLs were approved by the State Water Control Board in James City County before the July 9, 2008 effective date of the permit.
12. *Illicit Discharges identified.* The number of illicit discharges identified and the narrative on how they were controlled or eliminated are included in Appendix C-3.
13. *Land disturbing activities.* Information on regulated land-disturbing activities is reported in Appendix C-4.
14. *Stormwater management facility data.* Appendix C-5 of this report contains information on the permanent stormwater management brought online during PY5. Contained within Appendix C-5 of the PY1, PY2, PY3 and PY4 Annual Reports submitted to DCR in the three previous years are the remainder of all the known permanent stormwater management facilities in the MS4 permitted area of James City County.
15. *Agreements.* There are no new or terminated signed agreements between James City County and any other third party to implement all or portions of the permit's minimum control measures.
16. *Written comments.* There are no written comments received during a public comment period regarding the MS4 Program Plan.

| 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 | <i>Regional Cooperation</i> | 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). |
| 1.1b | <i>askHRgreen.org</i> | 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 |
| 1.1c | <i>Stormwater Phase II Subcommittee</i> | 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 | Educate citizens on techniques to reduce impacts of stormwater pollution on public waterways with an emphasis on impaired waters. | | | | | |
| 1.2a | <i>James City County PRIDE (Protecting Resources in Delicate Environments) Program</i> | 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 |
| 1.2b | <i>Distribute educational materials developed through askHRgreen.org</i> | Distribute materials developed through askHRgreen.org to target audience in locality. | Number of materials distributed | Stormwater Division | Ongoing | Education materials |
| 1.2c | <i>Maintain and enhance askHRgreen.org website</i> | 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 | |
| 1.2d | <i>Run regional media campaigns</i> | 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 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 | Demographic, reach and frequency | askHRgreen.org Stormwater Education Subcommittee | PY 1 | Copies of ads |
| 1.2e | <i>Author Green Living Tab</i> | 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 |

| BMP | BMP Description | Measurable Goals | Metric | Responsible Party | Timeline | Associated Documents |
|------|---|--|--|--|-----------------------------------|---|
| 1.2f | <i>Promote "Scoop the Poop" campaign</i> | Make "Scoop the Poop" information and giveaways available where citizens receive animal licenses and at pet-related events as appropriate | Number of giveaways distributed | Locality | PY 1 | Rack cards, dog waste bag holders |
| 1.2g | <i>Promote Lawn Care Campaign</i> | 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 |
| | <i>Turf Love Nutrient Management Planning for Homeowners and Community-owned lands</i> | 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 |
| 1.3 | Illicit Discharge Elimination Education | | | | | |
| 1.3a | <i>Educate homeowners on hazards and legal implications of illegal discharges and improper disposal of waste.</i> | 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 |
| 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 |
| | | 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 |
| | | Post volunteer opportunities on askHRgreen.org/calendar | Number and types of events submitted | HRPDC Environmental Educator | Annually | askHRgreen.org website |
| 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 Permit VAR040037 | Outreach plan |
| 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 |

| 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 | Participate in local activities to improve water quality | | | | | |
| 2.3a | <i>JCCPRIDE Implementation Projects</i> | Conduct JCCPRIDE implementation projects that promote water quality improvement | Conduct at least one project annually | Stormwater Program Advisory Committee | Annually | Project documentation |
| 2.3b | <i>Volunteer Water Quality Monitoring</i> | 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 |
| | <i>Volunteer Water Quality Monitoring</i> | Volunteer monitoring using coliscan screening of TMDL watersheds | Number of sites monitored | Stormwater Division | monthly | Monitoring Results |
| 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 |
| 2.5 | Update public participation plan to meet requirements of permit effective on July 1, 2013 | TBD | TBD | Stormwater Division | As prescribed in the Permit VAR040037 | Participation plan |
| 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 |

| BMP | BMP Description | Measurable Goals | Metric | Responsible Party | Timeline | Associated Documents |
|------|--|--|---|-------------------------------------|---|---|
| 3.1 | Storm Sewer System Map | Update map of all known outfalls based on 2010 census urbanized area | Number of outfalls catalogued and mapped | Stormwater Division | Complete 25% of needed updates in PY1 | Map |
| 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 | | 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 |
| 3.3b | | Track illicit discharge detection and elimination activities. | Number of investigations and actions taken | Stormwater Division | Ongoing | PARS |
| 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 |
| 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 |
| 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 |
| 3.6 | Report all spills that reach state waters to the DEQ and DCR | | | | | |
| 3.6a | <i>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.</i> | 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 |
| 3.6b | <i>Report Sanitary Sewer Overflows through SSORS database.</i> | Continue to utilize SSORS to report Sanitary Sewer Overflows | Number of overflows | James City Service Authority (JCSA) | As necessary | |
| 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 |
| 3.8 | Update IDDE plan to meet requirements of permit effective on July 1, 2013 | TBD | TBD | Stormwater Division | As prescribed in the Permit VAR040037 | IDDE Program Plan |
| 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 |

| BMP | BMP Description | Measurable Goals | Metric | Responsible Party | Timeline | Associated Documents |
|-----|--|---|--|--|---------------------------------------|---|
| 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 |
| | | "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 |
| | | 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 |
| 4.2 | 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 |
| 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 |
| | | 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 |
| 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 |
| 4.5 | Update Construction plan to meet requirements of regulations effective on July 1, 2013 | TBD | TBD | Engineering and Resource Protection Division | As prescribed in the Permit VAR040037 | IDDE Program Plan |
| 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 |

| BMP | BMP Description | Measurable Goals | Metric | Responsible Party | Timeline | Associated Documents |
|-----|---|---|---|--|---|---|
| 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 |
| 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 |
| 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 |
| 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 |
| | | 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 |
| 5.5 | Site Inspection and Enforcement | Conduct site inspections | Number of Inspections & Reinspections; enforcement actions | Stormwater Division | Ongoing | Stormwater Database |
| 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 |
| 5.7 | Update Post Development plan to meet requirements of permit effective on July 1, 2013 | TBD | TBD | Stormwater Division | As prescribed in the Permit VAR040037 | Post Development Program Plan |
| 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 |

| BMP | BMP Description | Measurable Goals | Metric | Responsible Party | Timeline | Associated Documents |
|-----|---|---|---|--|---|--|
| 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 Phase II Localities | PY1 | Training schedule |
| | | 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 | PY1 | E-newsletter, training materials |
| 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 |
| | | 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 |
| | | 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 |
| 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 |
| | | 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 |
| | | 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 |
| | | 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 |
| 6.4 | Update Municipal Facilities plan to meet requirements of permit effective on July 1, 2013 | TBD | TBD | Stormwater Division | As prescribed in the P VAR040037 permit | Municipal Facilities Program Plan |
| 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 |

| BMP | BMP Description | Measurable Goals | Metric | Responsible Party | Timeline | Associated Documents |
|------|---|---|--|---------------------|---------------------------------------|---------------------------------|
| SC-1 | TMDL Action Plans | | | | | |
| | <i>Skiffes Creek (Warwick River) Bacterial TMDL (JL35)</i> | Upon receipt of final guidance from DEQ, begin development of TMDL action plan for the Warwick River (Skiffes Creek) bacteriological TMDL, approved by EPA on February 29, 2008. | TBD | Stormwater Division | As prescribed in the Permit VAR040037 | TMDL Action Plan |
| | <i>Mill Creek (JL33) and Powhatan Creek (JL31) Bacterial TMDL</i> | Upon receipt of final guidance from DEQ, begin development of TMDL action plan for the Mill Creek and Powhatan Creek watershed bacteriological TMDL, approved by EPA on April 28, 2009. | TBD | Stormwater Division | As prescribed in the Permit VAR040037 | TMDL Action Plan |
| SC-2 | Chesapeake Bay TMDL Action Plan | Upon receipt of final guidance from DEQ, begin development of Chesapeake Bay TMDL action plan | TBD | Stormwater Division | As prescribed in the Permit VAR040037 | Chesapeake Bay TMDL Action Plan |
| SC-3 | 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 |

Appendix A

Signed Certification Statement



Administration
101-D Mounts Bay Road
P.O. Box 8784
Williamsburg, VA 23185-8784
P: 757-253-6728
jamescitycountyva.gov

September 30, 2013

Department of Environmental Quality
Tidewater Regional Office
5636 Southern Blvd.
Virginia Beach, VA 23462

RE: VSMP General Permit for Small MS4s, VAR040037, James City County

Dear Mr. Sauer:

In accordance with 4 VAC §50-60-1240 Section II(E)(3) and VSMP permit, VAR040037, enclosed is one copy of James City County's Year Five Annual Report. This report summarizes the County's activities taken toward meeting its measurable goals during the period of July 1, 2012 through June 30, 2013.

"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."

If you have any questions or need additional information, please do not hesitate to contact Ms. Frances C. Geissler, Stormwater Director, at (757) 259-1440.

Sincerely,

Robert C. Middaugh
County Administrator

CC: Frances C. Geissler

Appendix B

**Status of Compliance with Permit Conditions
MS4 Program Plan Spreadsheet with 2013 Updates**

1. Public Outreach and Education - James City County

| BMP | BMP Description | Measurable Goals | Metric | Responsible Party | Timeline | Associated Documents | FY 2013 Status |
|------|--|---|--|---------------------|-----------------|---|--|
| 1.1 | Participate in regional committees: HRSTORM, HR GREEN, Regional Stormwater Management Committee (RSMC), and SW Phase II Subcommittee | | | | | HR STORM Annual Report, MOA, HRPDC Regional Cooperation in Stormwater Management | Regional Cooperation in Stormwater Management, Fiscal Year 2012-2013, A Status Report is in Appendix E. |
| 1.1a | <i>Regional Cooperation</i> | Renew MOA with the HRPDC to participate in the regional processes, including the Regional Stormwater Management Program, the Stormwater Phase II Subcommittee and HR STORM. | Maintain valid MOA | HRPDC | Ongoing | Hampton Roads Regional Stormwater Management Program Memorandum of Agreement (MOA). | MOA updated in PY5. See Appendix D for current copy. |
| 1.1b | <i>HR STORM and HR GREEN</i> | Participate in at least 50% of monthly HR STORM meetings | Number of meetings attended/Number of meetings held | Stormwater Division | Annually | Attendance List in Appendix C-1 | 5 meetings attended / 8 meetings held See Appendix C-1 |
| | | Participate in annual HR GREEN meetings and subcommittee meetings as appropriate. | Number of meetings attended | Stormwater Division | Annually | Attendance List in Appendix C-1 | 3 meetings attended / 3 meetings held See Appendix C-1 |
| | | Participate in the development of regional Strategic Plans and Communication Plans for HR STORM and HR GREEN. | Participation | Stormwater Division | Annually | Strategic Plan; Communication Plan | 8 meetings attended / 11 meetings held See Appendix C-1 |
| 1.1c | <i>Stormwater Phase II Subcommittee</i> | Participate in at least 50% of monthly SW Phase II Subcommittee Meetings. | Number of meetings attended/Number of meetings held | Stormwater Division | Annually | Attendance List in Appendix C-1 | 11 meetings attended / 12 meetings held. See Appendix C-1 |
| | | Participate in identifying stormwater education needs and priorities through the HRPDC Phase II Subcommittee. | Participation | Stormwater Division | Annually | | Locality staff identified education priorities at a Phase II stormwater committee meeting in September 2011. These priorities are reviewed and updated annually by the stormwater education subcommittee of askHRGreen. Annual media campaigns and outreach efforts are focused on these priorities. |
| 1.2 | Educate citizens on techniques to reduce impacts of stormwater pollution on public waterways with an emphasis on impaired waters. | | | | | | |
| 1.2a | <i>James City County PRIDE (Protecting Resources in Delicate Environments) Program</i> | Distribute County-specific information to citizens and identified target audiences through an updated PRIDE website | Number of target audiences included on site and improved visitation levels | Stormwater Division | PY2 and ongoing | Website content | Website updated in PY5; Water Quality Reports and JCCPride grant information added. Program updates will continue into next permit cycle. |
| 1.2b | <i>Distribute educational materials developed through HR STORM.</i> | Distribute materials developed through HRSTORM to target audience in locality. | Number of materials distributed | Stormwater Division | Ongoing | Education materials | 2,355 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. Public Outreach and Education - James City County | | | | | | | |
|--|---|--|--|--|--------------|--|---|
| BMP | BMP Description | Measurable Goals | Metric | Responsible Party | Timeline | Associated Documents | FY 2013 Status |
| 1.2c | Maintain and enhance HR STORM Website, coordination with other educational programs, and distribution of e-newsletter. | 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 | | New askHRGreen.com website launched in August 2011. |
| 1.2d | Ensure distribution of regional environmental tabloid to all 6 th graders and teachers' guides to all 6 th grade teachers | Develop and Distribute environmental tabloids | Number of tabloids distributed | HRPDC and Stormwater Division | Permit Cycle | Tabloid | Environmental tabloids developed and distributed to all 6th graders in Williamsburg/James City County public schools in PY5 |
| 1.2e | Regional Media Campaign | Participate in the HR STORM regional media campaign which will make impressions with a stormwater message via print, television (local municipal access, cable and local affiliate), and radio with a target of reaching 72% of adults (25-54) three times over. | Demographic, reach and frequency | HRSTORM | Annually | Copies of ads | Details of the Hamton Roads media campaign for FY2012 is located in the askHRGreen Annual Report in Appendix C-1. |
| 1.2f | "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 | Annually | | Over 940 Scoop the Poop giveaways and fliers distributed. See Outreach Activities Spreadsheet in Appendix C-1. |
| 1.2g | "Chesapeake Club" Plant More Plants Campaign | | | | | | |
| | 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 | 168 soil tests, 191 nutrient management plans covering 34.04 acres, 894 citizen contacts. See spreadsheet in Appendix C-1. |
| | Target Homeowners and Landscapers | Recruit landscaping and lawn care companies to participate as a Chesapeake Club partner by offering the Chesapeake Club treatment option at least once during permit cycle. | List of participating landscaping companies | Stormwater Division | Permit Cycle | | This was a state led effort but lawncare company recruitment was not successful. DCR redesigned this educational campaign. |
| | Target Homeowners | Educate homeowners on the benefits of reducing turf grass and increasing other plants on their property. | Number of materials distributed, number of web hits, and number of media spots. | HRGreen | PY3-PY4 | Copy of materials distributed. | Continue to publicize program through website, social media, and blog articles and distribute giveaways provided by DCR at events. Lawn care and fertilizer education campaign run in October 2012. See Outreach spreadsheet and brochure in Appendix C-1 |
| | Target Restaurant Owners and Patrons | Recruit restaurants to participate as a Chesapeake Club partner, promoting the message of reduced fertilizer use at least once during permit cycle. | List of participating restaurants | Stormwater Division | Permit Cycle | DCR program was ended in FY10 and replaced by Plant More Plants. | Even though program ended, coasters continue to be used at County offices. |

1. Public Outreach and Education - James City County

| BMP | BMP Description | Measurable Goals | Metric | Responsible Party | Timeline | Associated Documents | FY 2013 Status |
|------|---|--|--|---------------------|------------------------------------|---|--|
| | <i>Target Garden Centers and Retail Nurseries</i> | Encourage local garden centers and retail nurseries to sign up for DCR's program. | Number of local business members | DCR/HRGreen | PY4-PY5 | Copy of materials distributed. | Four landscape professionals and five nurseries are listed as partners on the plant more plants website. |
| 1.3 | Illicit Discharge Elimination Education | | | | | | |
| 1.3a | <i>Educate public employees on hazards and legal implications of illegal discharges and improper disposal of waste.</i> | Identify and prioritize education and training needs for County employees through the HRPDC Phase II Subcommittee. | Prioritized list of training needs and number of employees that need training. | Stormwater Division | End of PY1 | Prioritized needs list | List completed in PY1. Number of employees needing training: Good Housekeeping - 100; IDDE - 50 |
| | | Conduct 2 trainings per permit cycle | Number of trainings, and number of attendees | HRPDC | Permit Cycle | Description of training - see Appendix C-1 | Pollution Prevention training was provided by HRPDC on May 1 and 2, 2013. See Appendix C-1 for spreadsheet summary. |
| | | Ensure at least 20% of appropriate employees attend IDDE training(s) coordinated by the HRPDC. | Number of participants/ Number of identified appropriate employees | Stormwater Division | Permit Cycle | List of attendees in Appendix C-1 | 5 trainings were held for individual departments and public entities. Training was conducted by stormwater staff using Raincheck program for all General Services Employees February 2013. See Appendix C-1 for spreadsheet summary. |
| 1.3b | <i>Target local commercial, industrial, and institutional entities likely to have significant stormwater impacts.</i> | Identify and prioritize education needs for businesses, and residential behaviors according to relative risk for producing illicit discharges through the HRPDC Phase II Subcommittee. | List of entities and priorities | Stormwater Division | Within first 2 years of Permit | Priority list and materials developed | Priority List: Business - Restaurants; Residential - Turf management and home mechanics |
| 1.3c | <i>Educate business owners on hazards and legal implications of illegal discharges and improper disposal of waste.</i> | Distribute educational materials developed through the HRPDC to groups with high risk for producing illicit discharges. | Number of materials distributed. | Stormwater Division | Permit Cycle | Education materials and distribution list. | County distributed 6 brochures to area food service establishments on the proper techniques for grease trap cleaning. Also provided brochures to 15 residents on proper pool discharge techniques. See appendix C-1 for brochures. |
| 1.3d | <i>Educate homeowners on hazards and legal implications of illegal discharges and improper disposal of waste.</i> | Promote 58-STORM info line for appropriate contacts in each locality for citizens to report illicit discharges. | Number of calls | HRPDC and locality | Post new info in PY1 | Script, updated contact lists, phone bill with numbers of calls, logs on any follow up actions. | The 58-Storm line has been discontinued. Locality specific numbers to report illicit discharges are listed on the askHRGreen website. |
| | | Investigate possibility of regional 800 number for illicit discharge reporting. | Establish regional line/ number of calls | HRPDC Staff | If feasible, establish line in PY2 | | This was not deemed to be a feasible alternative. Localities each have their own reporting numbers, and those numbers are referenced on the askHRGreen website. |

| 1. Public Outreach and Education - James City County | | | | | | | |
|--|--|---|--|------------------------------|----------------|---|---|
| BMP | BMP Description | Measurable Goals | Metric | Responsible Party | Timeline | Associated Documents | FY 2013 Status |
| 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 James City County Stormwater website and Virginia Master Naturalist's website |
| | | Submit articles for HR GREEN regional e-newsletter for public participation in water quality improvement initiatives. | Number and types of events submitted | Stormwater Division | As needed | E-newsletter | 3 articles submitted to JCC electronic news letter. See Appendix C-1 for Outreach Spreadsheet and jamescitycountyva.gov. |
| | | Post volunteer opportunities through HR STORM and/or HR GREEN | Number and types of events submitted | HRPDC Environmental Educator | Annually | websites | See www. askHRGreen.org |
| 1.5 | Diversify strategies to target local MS4 specific audiences. | Expand fact sheet series | Identify and prioritize targets | HR STORM | PY 2 | Factsheets, e-newsletters, and websites | completed |
| | | | Produce specific fact sheets | HR STORM | PY 3-5 | Factsheets, e-newsletters, and websites | Car wash rack card for fundraising car washes and residential good housekeeping brochure were developed in FY11, and continued to be distributed through FY13. The askHrgreen.org website contains information on stormwater friendly practices at home and in the yard. Articles on responsible stormwater practices are regularly featured on the website's blog. |
| | | Target HOA and civic groups in the watersheds of Impaired Waters | Number and type of outreach activities | Stormwater Division | As needed | Documentation on outreach activity | Ware Creek Watershed Stakeholders meeting. See Appendix C-1 for Outreach Spreadsheet. |
| 1.6 | Improve outreach program to address concerns of target audience as well as minorities, disadvantaged audiences, and minors . | Improve outreach to school-aged children | Reprint of HR STORM tabloid size newspaper for elementary schools | HR STORM/ HR Green | PY 1, 3, and 5 | Newspaper | Environmental tabloids developed and distributed to all 6th graders in Williamsburg/James City County public schools in PY5 |
| | | Improve outreach to disadvantaged and minority audiences. | Targeted ads through channels such as CW, BET, and urban radio stations. | HR STORM | Annually | Affidavits from TV and radio | See askHRGreen Annual Report in Appendix C-1 |
| 1.7 | 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. |

| 2. Public Involvement/Participation - James City County | | | | | | | |
|---|--|--|--|--|-------------------------------|--|---|
| BMP | BMP Description | Measurable Goals | Metric | Responsible Party | Timeline | Associated Documents | FY 2013 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 | As necessary | Virginia Code reference, updated plan | Program Plan on County website. |
| 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 | PRIDE Implementation Projects | Conduct PRIDE implementation projects that promote water quality improvement | Conduct at least one project annually | PRIDE Team | Annually | Project documentation | Pride grants were awarded to 7 neighborhoods for BMP 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 | Three times per year per site | Monitoring Results | 4 sites on county property - see spreadsheet in Appendix C-2 for locations |
| | | Expand volunteer monitoring programs to include coliscan screening of TMDL watersheds | Number of sites monitored | Stormwater Division | Beginning in PY2, monthly | Monitoring Results | Program developed - 2 citizens monitoring 3 sites in Powhatan Creek |
| 2.3c | TMDL Participation | Actively involve citizens in the development of TMDLs and TMDL Implementation Plans | Notification of meetings/Number of attendees | Stormwater Division | As appropriate | | No TMDL Implementation Plans developed this year. County Staff participated in James River PCB TMDL development. |
| 2.3d | 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 | | Partnered with the Chesapeake Bay Foundation in the annual Clean the Bay Day - Over 1400 lbs of trash collected. 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, 2 meetings of the JCCPRIDE subcommittee, 2 strategic planning sessions; see spreadsheet in Appendix C-2 |
| 2.5 | 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. |

| 3. Illicit Discharge Detection and Elimination - James City County | | | | | | | |
|--|--|---|--|-------------------------------|---|---|---|
| BMP | BMP Description | Measurable Goals | Metric | Responsible Party | Timeline | Associated Documents | FY 2013 Status |
| 3.1 | Storm Sewer System Map | Map all known outfalls (all existing known outfalls from the MS4 were mapped in 2007/2008) | Number of outfalls catalogued and mapped | Stormwater Division | Map new outfalls within 180 days of project completion | Map | 66 systems have been mapped - this is the entire amount operated by James City County. |
| | | Map surface waters and impaired waters. Estimate MS4 acreage discharging to each HUC and impaired water. | Impaired waters with HUCs | Stormwater Division | PY1 | Registration Statement; Map | See spreadsheet in Appendix C-3 for detail; total MS4 acreage discharging to impaired water is 505.3 acres |
| 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 | 5 investigations, 4 unable to determine compliance, 1 illicited an in-office effort to improve BMPs for power washing. Staff produced flyers. See 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. | Develop regionally consistent protocol for responding and investigating IDDE | HRPDC and Phase II Localities | PY1 | Investigation forms | 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 | 5 investigations, 4 unable to determine compliance, 1 illicited an in-office effort to improve BMPs for power washing. Staff produced flyers. See Appendix C-3 |
| 3.3c | | Perform dry weather screening of MS4 outfalls on an annual basis. | Number of outfall screened annually | Stormwater Division | Screen all within permit cycle, perform a minimum of 15% annually | Inspection Reports | 28 outfalls have been screened out of a total of 66 (total # of outfalls regardless of size) in PY5 (FY13). See spreadsheet in Appendix C-3. 100% screened to date in permit cycle. |

| 3. Illicit Discharge Detection and Elimination - James City County | | | | | | | |
|--|---|--|---|-------------------------------------|---|------------------------------|---|
| BMP | BMP Description | Measurable Goals | Metric | Responsible Party | Timeline | Associated Documents | FY 2013 Status |
| 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 | Follow up continues on results of PY3 Municipal Operations Analysis, see summary 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 | VDOT notified in PY1 - see Appendix C-3, GIS map developed |
| 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 | 6 internal reports were filed by the fire department. Spills (gas and oil) totaled less than 15 gallons. None entered a storm drain. |
| 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 | | 51 overflows reported to DEQ in FY13. 8 caused by Hurricane Sandy and 12 caused by Tropical Storm Andrea. 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 | 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. |

| 4. Construction Site Storm Water Runoff Control - James City County | | | | | | | |
|---|--|---|--|--|---|---|--|
| BMP | BMP Description | Measurable Goals | Metric | Responsible Party | Timeline | Associated Documents | FY 2013 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 | Environmental Division (renamed Engineering and Resource Protection in FY11) | Annually | Environmental Division database; PARS is being developed to track these items as well | Number of inspections - <u>3109</u> ; number of plan reviews - <u>501</u> plans (development = <u>147</u> , single family = <u>354</u>); number of enforcement actions - <u>54</u> on development projects, <u>347</u> 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 | Environmental Division (renamed Engineering and Resource Protection in FY11) | Ongoing; as needed, implement any corrective actions for deficiencies identified by DCR in accordance with an agreed upon CAA | 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 | Environmental Division (renamed Engineering and Resource Protection in FY11) | Annually | Tracked in Environmental Division database and PARS | Number of calls/requests - <u>59</u> number of site visits - <u>59</u> |
| 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. | Environmental Division (renamed Engineering and Resource Protection in FY11) | Ongoing; require permit registration statements or actual permits by PY2 | Copies of permits and registration statements | All 37 applicants notified of state permit requirement. Procedure for Land Disturbing Permit issuance changed in PY2 to require evidence of registration for VSMP General Permit for Discharge of Stormwater from Construction Activities prior to issuance of County's permit. |

Annual Report Appendix B: Status of Compliance with permit conditions and program plan elements - FY2013 - PY5

| 4. Construction Site Storm Water Runoff Control - James City County | | | | | | | |
|---|---------------------------|---|--|--|----------------------|--|---|
| BMP | BMP Description | Measurable Goals | Metric | Responsible Party | Timeline | Associated Documents | FY 2013 Status |
| 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 | County contractor E&S training held 5/30/2013 |
| | | Ensure that plan reviewers, inspectors, and program administrators obtain the appropriate certifications as required under the Erosion and Sediment Control Law | Certifications obtained | Environmental Division (renamed Engineering and Resource Protection in FY11) | Ongoing | Copies of certificates | Total of 5 certified inspectors (1 renewal), 4 certified plan reviewers (1 renewal), 2 combined administrators (0 renewals) |
| 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 | Environmental Division (renamed E & RP in FY11) | Annually | Annual Report | 20 agreements secured of the 37 land-disturbing permits issued; 125.48 acres disturbed - see appendix C-4 for detail |
| 4.5 | Evaluation and Assessment | Evaluate and assess progress towards meeting measurable goals. | In accordance with Section I E of 4VAC50-60-1200 | Environmental (E & RP in FY11) and Stormwater Divisions | Annually | Annual report | Compliance with this measurable goal is met through the submission of this annual report. |

5. Post Construction Storm Water Management in New Development and Redevelopment - James City County

| BMP | BMP Description | Measurable Goals | Metric | Responsible Party | Timeline | Associated Documents | FY 2013 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 | Environmental Division (renamed Engineering and Resource Protection in FY11) | Ongoing implementation, ordinance updates as needed | Chesapeake Bay Preservation - Chapter 23, and Erosion and Sediment Control - Chapter 8 of the County Code | No ordinance updates for PY5. |
| 5.2 | Encourage the use of Low-Impact Development (LID) | Encourage the use of LID as appropriate to local/regional conditions. | Conduct LID workshop for Hampton Roads localities | HRPDC | PY2 | Materials about bioretention facilities in the County. See handout in Appendix C-5 | Completed a project using a National Fish & Wildlife Foundation Chesapeake Bay Restoration Garden Love Grant to promote and install rain gardens in established neighborhoods as runoff reducing retrofits. See Appendix C-5. |
| | | Develop fact sheet/checklist to help developers and local staff determine appropriateness of LID for project(s) | Checklist developed | HRPDC & Regional Stormwater Management Committee | PY2 PY5 | Fact sheet | LID factsheet was produced in FY13 . See Appendix C-5. |
| 5.3 | 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. | Environmental Division (renamed Engineering and Resource Protection in FY11) | Ongoing; require permit registration statements or actual permits by PY2 | Copies of permits and registration statements | All 37 applicants notified of state permit requirement. Procedure for Land Disturbing Permit issuance changed in PY2 to require evidence of registration for VSMP General Permit for Discharge of Stormwater from Construction Activities prior to issuance of County's permit. |
| 5.4 | BMP Maintenance Agreements | Require BMP maintenance agreements as required by the Chesapeake Bay Preservation Ordinance. | Number of agreements and inspection schedules | Environmental Division (renamed Engineering and Resource Protection in FY11) | Ongoing | Maintenance Agreements and schedules | 20 Agreements executed during PY4. See Appendix C-5 for detail. |
| 5.5 | 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 PY5. |
| | | 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 | PARS | Number of inspections - 66 which is the total number of County-owned facilities. |
| 5.6 | Site Inspection and Enforcement | Conduct site inspections | Number of Inspections & Reinspections; enforcement actions | Stormwater Division | Ongoing | PARS | 35 SWMF inspections , notices of non-compliance issued to owners of BMPs needing immediate repair. See letter in Appendix C-5. |
| 5.7 | 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 | Annually | PARS | 34 BMPs added in PY4. See spreadsheet with detailed information on BMPs added in Appendix C-5. |

5. Post Construction Storm Water Management in New Development and Redevelopment - James City County

| BMP | BMP Description | Measurable Goals | Metric | Responsible Party | Timeline | Associated Documents | FY 2013 Status |
|-----|---------------------------|--|--|---------------------|----------|----------------------|---|
| 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. |

| 6. Pollution Prevention/Good Housekeeping for Municipal Operations - James City County | | | | | | | |
|--|----------------------------------|---|---|----------------------------------|--------------------------------|-------------------------------------|--|
| BMP | BMP Description | Measurable Goals | Metric | Responsible Party | Timeline | Associated Documents | FY 2013 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 Phase II Localities | Once during permit cycle | Training schedule | Training on pollution prevention for General Services employees was held 2/28/13. See training agenda and attendance, and Training Matrix in Appendix C-6. |
| | | Develop training materials to eliminate illicit discharges from storage yards, fleet and maintenance shops, outdoor storage areas, rest areas, waste transfer stations, and other municipal facilities. | Develop fact sheets | HRPDC | Permit Cycle | Training documents | Standard Operating Procedures reviewed. Site visits and follow-up training provided to Fleet employees. See SOPs in Appendix C-6. |
| | | Develop and distribute training materials to inform employees on proper waste disposal techniques. | Develop fact sheets | HRPDC | Permit Cycle | Training documents | Standard Operating Procedures reviewed. Site visits and follow-up training provided to Solid Waste employees. See SOPs in Appendix C-6. |
| | | Educate local government employees on protecting soluble and erodible materials from exposure or precipitation. | Develop fact sheets | HRPDC | Permit Cycle | Training documents | Pollution prevention training was held in May 2013 by HRPDC |
| | | Educate James City County employees on proper techniques for fertilizer and pesticide application. | Participate in nutrient management training through HRPDC | HRPDC | PY3 | Training documents | (3) certified fertilizer application, (1) certified and (3) recertified pesticide application with VA Dept of Agriculture and Consumer Services in PY5 |
| | | Distribute pollution prevention educational materials developed through the HRPDC/HR STORM 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 | Annually | E-newsletter, training materials | Training on pollution prevention for General Services employees was held 2/28/13. Used "Rain Check" program developed by Excal Visual LLP |
| | | Participate in at least one regional annual training workshop for municipal employees engaging in operations with a high risk of discharging pollutants into the MS4 coordinated by the HRPDC Phase II Subcommittee. | Number of employees attending | Stormwater Division | Annually | Training outline | See training agenda and attendance, and Training Matrix for the above workshop in Appendix C-6. |
| 6.2 | Spill Prevention & Control Plans | Develop plans describing spill prevention and control procedures for municipal facilities by end of PY 3. | Standard Operating Procedure (SOP) | Stormwater Phase II Subcommittee | PY3 | 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 Matrix in Appendix C-6 |
| 6.3 | Operations & Maintenance Program | Document formal 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 | By the end of the permit cycle | O&M Plan | SWMF O&M Plan involves annual inspection, and annual maintenance of vegetation and debris removal |

| 6. Pollution Prevention/Good Housekeeping for Municipal Operations - James City County | | | | | | | |
|--|---------------------------|---|---|---|--------------------------------|---------------------------|---|
| BMP | BMP Description | Measurable Goals | Metric | Responsible Party | Timeline | Associated Documents | FY 2013 Status |
| | | Nutrient Management Plans will be developed for 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 | By the end of the permit cycle | Nutrient Management Plans | No new plans written in FY13. Total number of plans remains 12 covering 62.895 acres. See Turf Love Summary in Appendix C-6 |
| | | Develop 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 | By the end of the permit cycle | O&M Plan | Standard Operating Procedures Developed. SOP in Appendix C-6 |
| | | Develop 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 | By the end of the permit cycle | O&M Plan | Standard Operating Procedures Developed. SOP in Appendix C-6 |
| 6.4 | Evaluation and Assessment | Evaluate and assess progress towards meeting measurable goals. | In accordance with Section I E of 4VAC50-60-1200 | Stormwater Division | Annually | | Compliance with this measurable goal is met through the submission of this annual report. Also, see memo in Appendix C-6. |

Appendix C-1

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

| | 12-Jul | 12-Aug | 12-Sep | 12-Oct | 12-Nov | 12-Dec | 13-Jan | 13-Feb | 13-Mar | 13-Apr | 13-May | 13-Jun | |
|------------------------------|----------------------------------|------------------|------------------|--------------------------|----------------------------|------------|------------------|--|------------------|------------------|--------------------------|----------------------------------|---------------|
| Chesapeake Gloucester | Elizabeth Vaughn | Elizabeth Vaughn | Elizabeth Vaughn | Elizabeth Vaughn | Elizabeth Vaughn | No meeting | Elizabeth Vaughn | | Elizabeth Vaughn | | | Elizabeth Vaughn | |
| Hampton | Cris Ausink | Cris Ausink | Cris Ausink | | Cris Ausink | | Cris Ausink | Cris Ausink | Cris Ausink | Cris Ausink | | | Cris Ausink |
| Isle of Wight | | | Melissa Lindgren | Andy Reed | Erin Belt | | Erin Belt | Erin Belt, Melissa Lindgren | Melissa Lindgren | Melissa Lindgren | Melissa Lindgren | Erin Belt, Melissa Lindgren | |
| James City County | Suzanne Dyba, Dawn Oleksy | | Suzanne Dyba | | Suzanne Dyba | | Suzanne Dyba | Dawn Oleksy | Suzanne Dyba | | | Dawn Oleksy | Suzanne Dyba |
| Newport News | David Kuzma | | | | | | David Kuzma | | David Kuzma | David Kuzma | David Kuzma | David Kuzma | |
| Norfolk | | Gina Shaw | Fleta Jackson | Fleta Jackson, Gina Shaw | Fleta Jackson, Gina Shaw | | Fleta Jackson | Fleta Jackson, Gina Shaw | | | Fleta Jackson | | |
| Poquoson | Sherry Coffey | Sherry Coffey | Sherry Coffey | | | | Sherry Coffey | | | | | | |
| Smithfield | | Zach Jones | Zach Jones | Zach Jones | | | Zach Jones | Zach Jones | | | Kari Lynch, Kelsey Crist | Kari Lynch, Kelsey Crist | Zach Jones |
| Suffolk | Erin Rountree | Ed Heide | Ed Heide | Ed Heide | Ed Heide | | Ed Heide | Ed Heide | Ed Heide | Erin Rountree | Ed Heide | Erin Rountree | Shinon Clark |
| Virginia Beach | Bill Johnston, Helen Kuhns | Bill Johnston | | Bill Johnston | Bill Johnston, Helen Kuhns | | Bill Johnston | Bill Johnston | | | Bill Johnston | Bill Johnston | Bill Johnston |
| Williamsburg | Tammy Rojek | | | Tammy Rojek | | | Aaron Small | Aaron Small | Tammy Rojek | | | Tammy Rojek | Tammy Rojek |
| York | Amy Green | Amy Green | Amy Green | | Brandi McCoy | | | Brandi McCoy | Brandi McCoy | Brandi McCoy | Brandi McCoy | Amy Green, Brandi McCoy | |
| | All-Hands askHRgreen.org Retreat | | | | | | | All-Hands askHRgreen.org Research Mtg. | | | | All-Hands askHRgreen.org Meeting | |

Phase I and Regional SW Regional SW Regional SW
 II II II II II II II II II Workgroup Workgroup Workgroup

| Meeting Dates | 7/18/2012 | 8/15/2012 | 9/18/2012 | 10/17/2012 | 11/14/2012 | 12/19/2012 | 1/16/2013 | 2/20/2013 | 3/21/2013 | 4/17/2013 | 5/15/2013 | 6/19/2013 | # Meetings | % Attended |
|-----------------------------|-----------|-----------|-----------|------------|------------|------------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|
| Phase II Localities: | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 12 | 100% |
| Isle of Wight County | 1 | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 | - | 1 | 1 | 10 | 83% |
| James City County | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | - | 1 | 1 | 1 | 11 | 92% |
| Poquoson | 1 | 1 | 1 | 1 | - | 1 | 1 | 1 | 1 | 1 | - | - | 9 | 75% |
| Suffolk | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 12 | 100% |
| Williamsburg | - | 1 | 1 | - | - | - | 1 | 1 | 1 | 1 | 1 | 1 | 8 | 67% |
| York Co. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 12 | 100% |

SM SM

Phase II Stormwater Training Topics

Referenced in the following Program Plan Components: 1.1c, 1.3a, and 6.1

| Topic | Last offered | Previous dates | Planned | Notes |
|---|--------------------------------------|--------------------|---------|---|
| Landscaping | Mar 2006 | | | |
| IDDE | Oct 2009 | May 2007, Feb 2008 | | |
| General Pollution Prevention | (2) Nov 2012, (2) Dec 2012, Feb 2013 | Mar 2004, Feb 2009 | | Individual meetings with Fleet, Solid Waste, Custodial, and Facilities Mgmt Staff. All day meeting with General Services. |
| Parks & Open Space Mgt. (Nutrient Management) | Mar 2011 | | | |
| Pollution Prevention for Municipal Staff | May 2013 | | | Offered by HRPDC |

Note: Training topics are reviewed and prioritized at least twice during the permit cycle. Topics were reviewed and prioritized most recently at the September 2011 Ph II meeting, as documented in the meeting summary kept on file at the HRPDC.

2012 College Creek Watershed

Water Quality Report



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 have begun in the College Creek watershed at a headwater site east of Ironbound Road, in the Ironbound Village Neighborhood. The Fall 2011 and Spring 2012 samplings have provided results that are considered to be marginally acceptable for water quality standards. Further monitoring with new sampling methodology should reinforce and better explain water quality data 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.

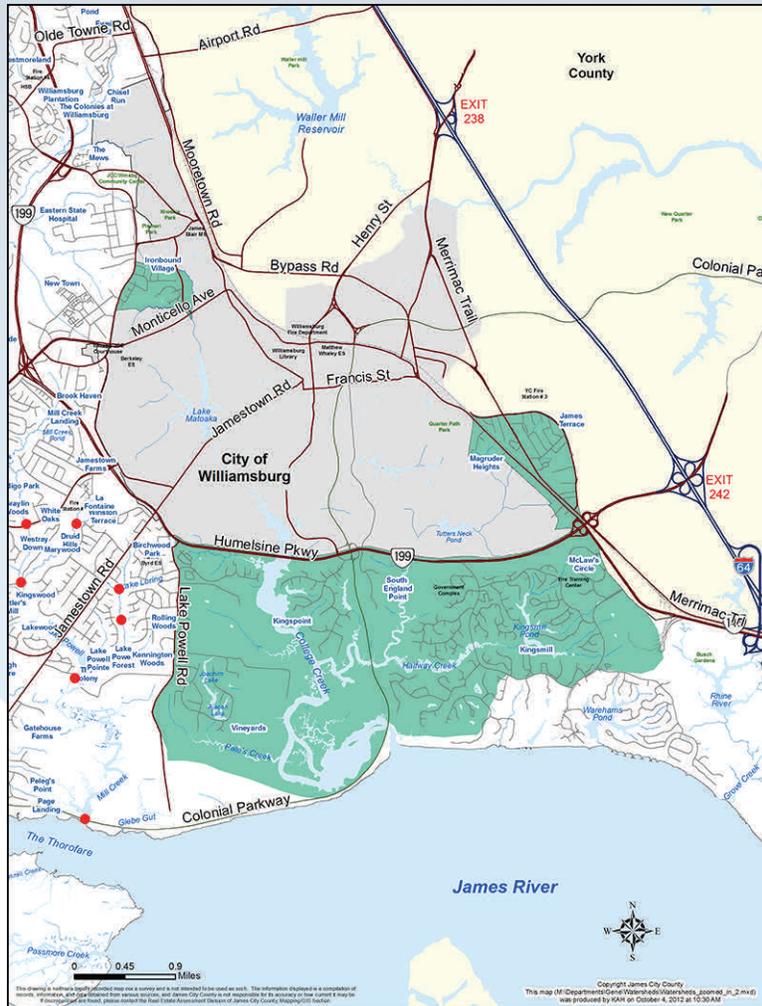
Completed Studies and Plans

- ◆ 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 jamestownva.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.

2012 Diascund Creek Watershed

Water Quality Report



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,

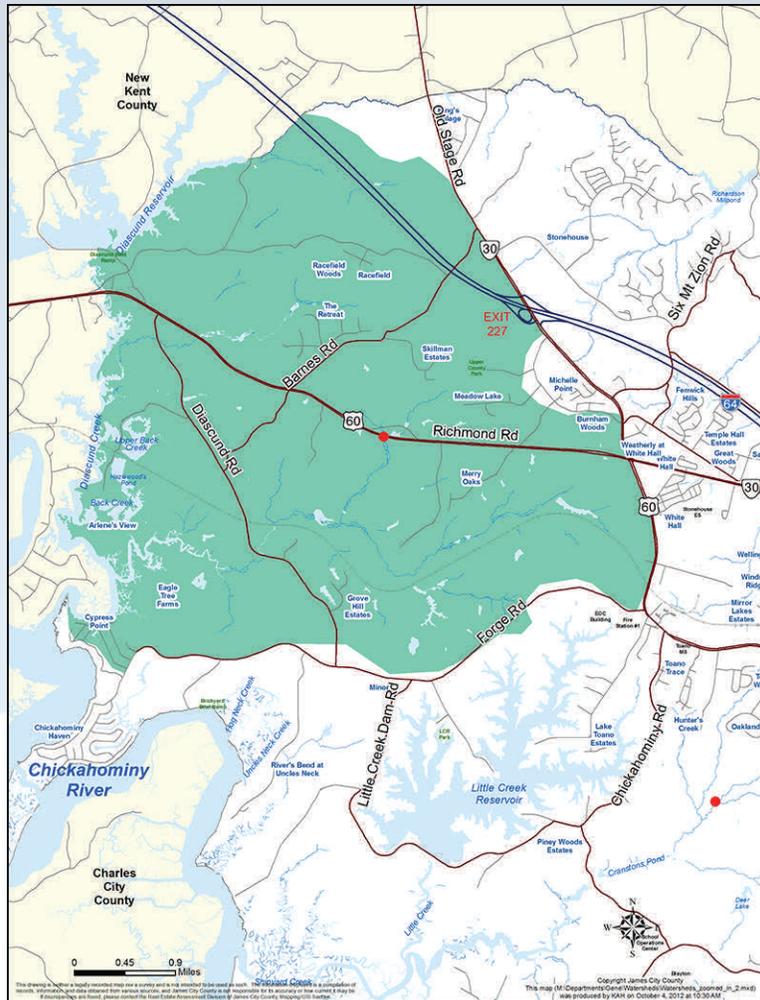
which indicates that people could get sick if they swim in the creek and are advised not to do so.

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.

Diascund Creek Watershed Map



For More Information

If you are interested in more information, go to jamestownva.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.

2012 Gordon Creek Watershed

Water Quality Report



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.

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.

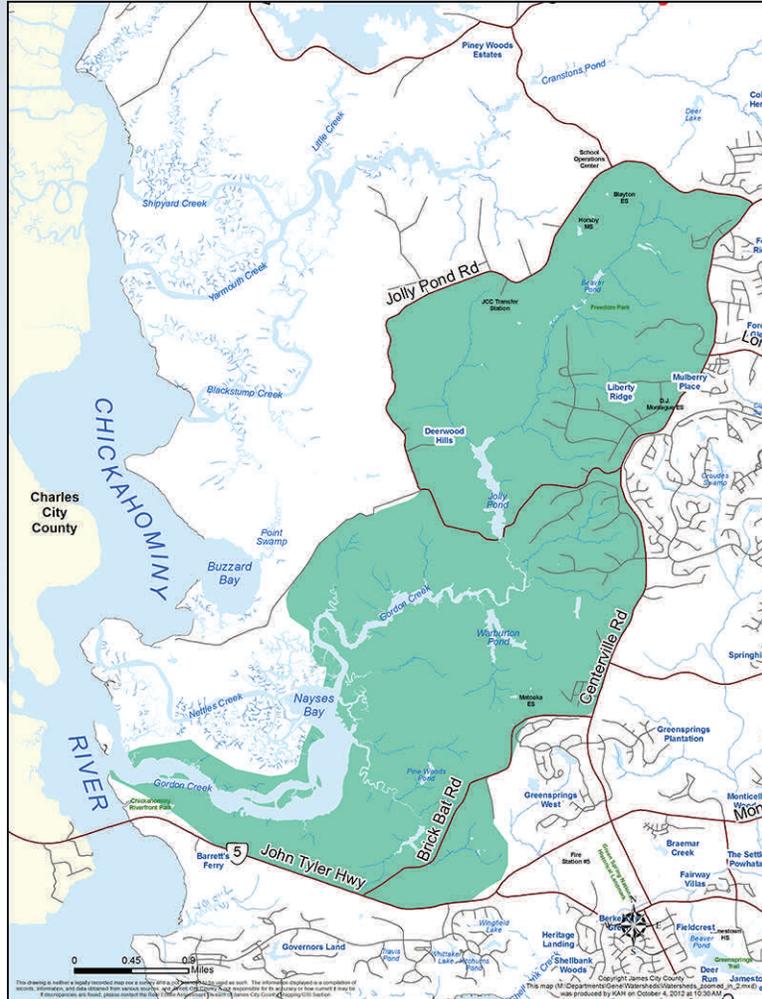
Completed Studies and Plans

- ◆ 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.
- ◆ Leave a natural plant buffer around streams or stormwater ponds. Vegetation filters pollutants before they get to the water.
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Gordon Creek Watershed Map



For More Information

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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.

2012 Mill Creek Watershed

Water Quality Report



Stormwater

jamescitycountyva.gov/jccpride

James City County Water Quality Strategies

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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 turns out to be unacceptable 75% of the time, while the remaining 25% score as only marginally acceptable. 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.

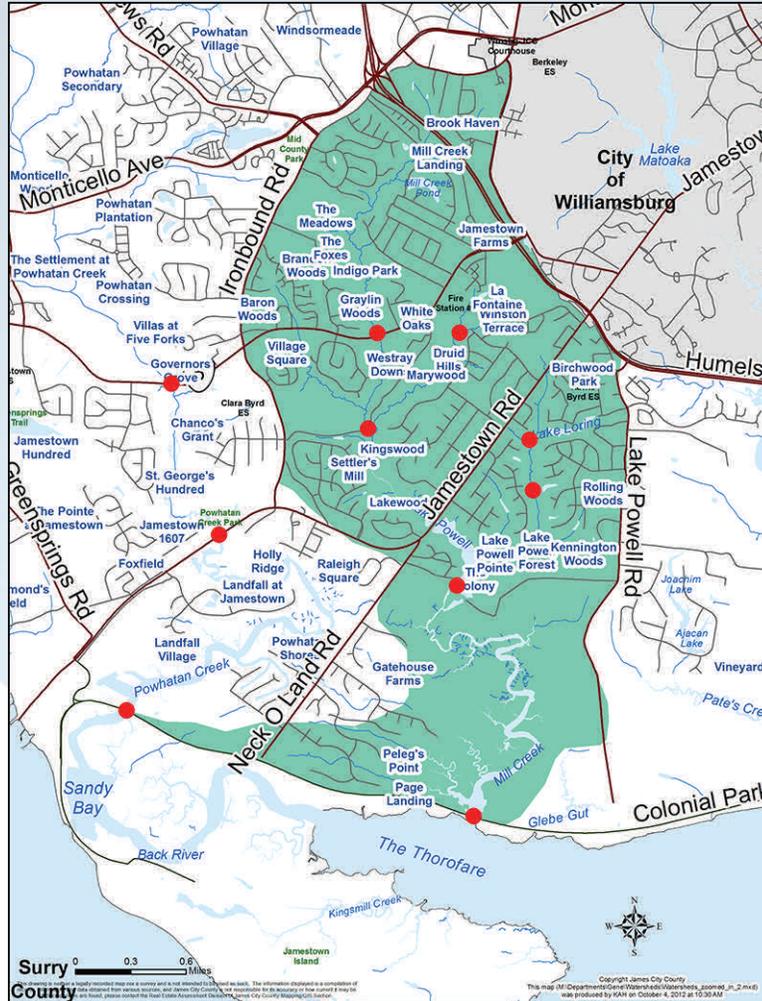
Completed Studies and Plans

- ◆ 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?

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Mill Creek Watershed Map



For More Information

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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 Mill Creek Watershed is protected for generations to come.

2012
Powhatan Creek
Watershed
Water Quality Report



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.

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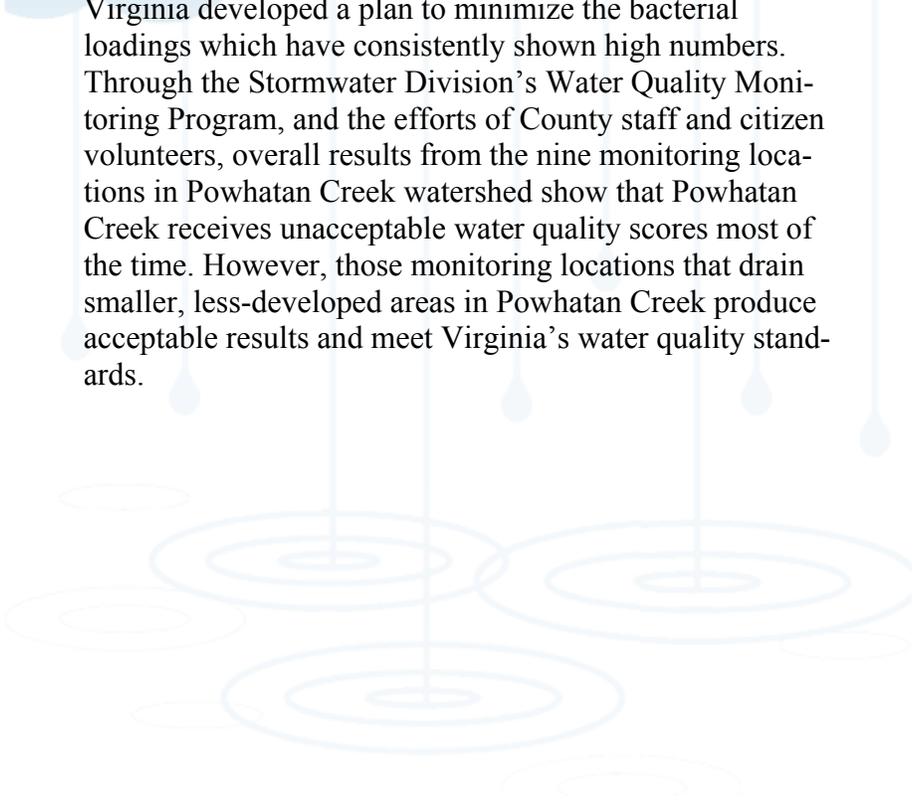
Powhatan Creek Watershed

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.



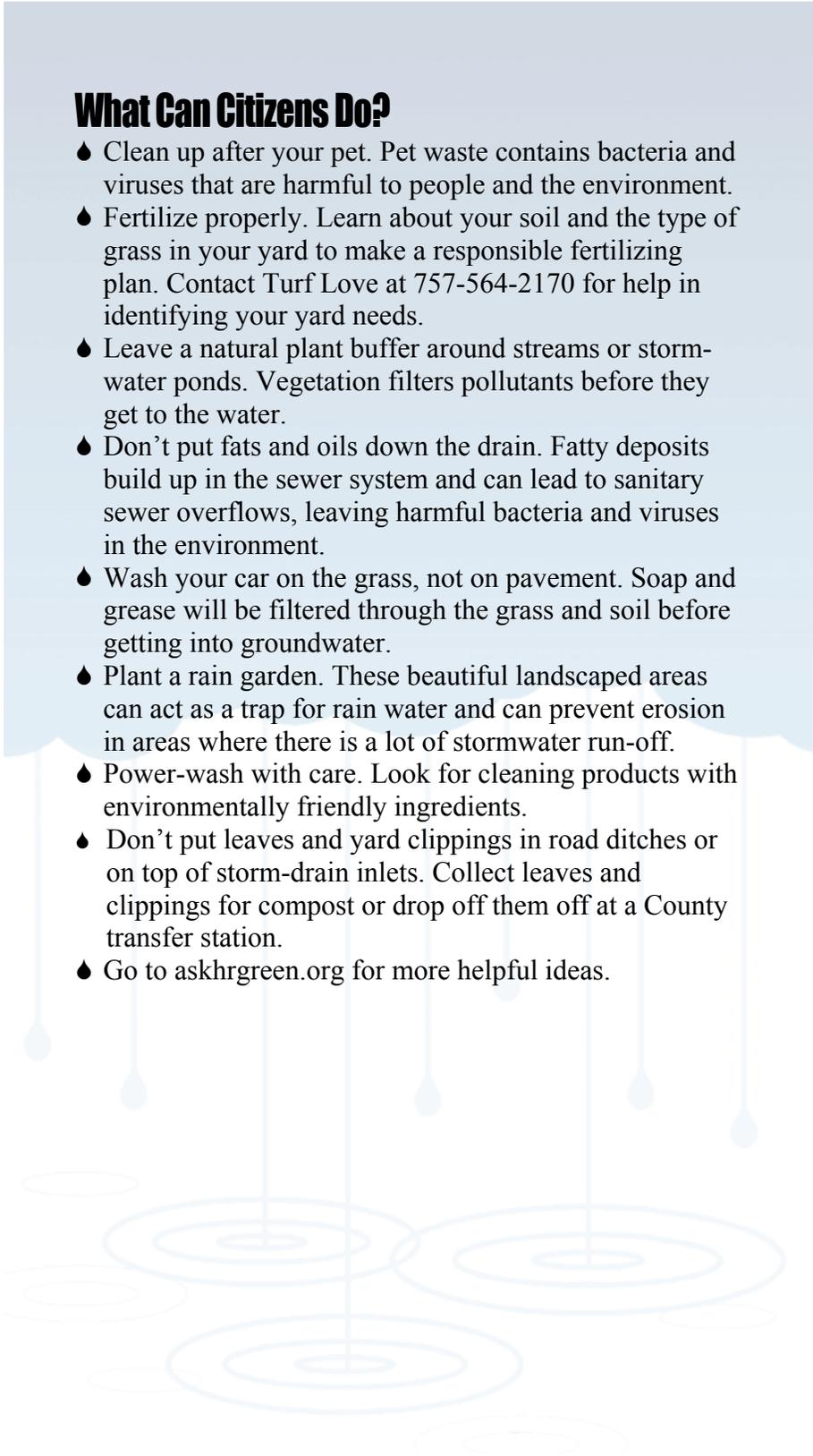
Problems in the Watershed

- ◆ 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.

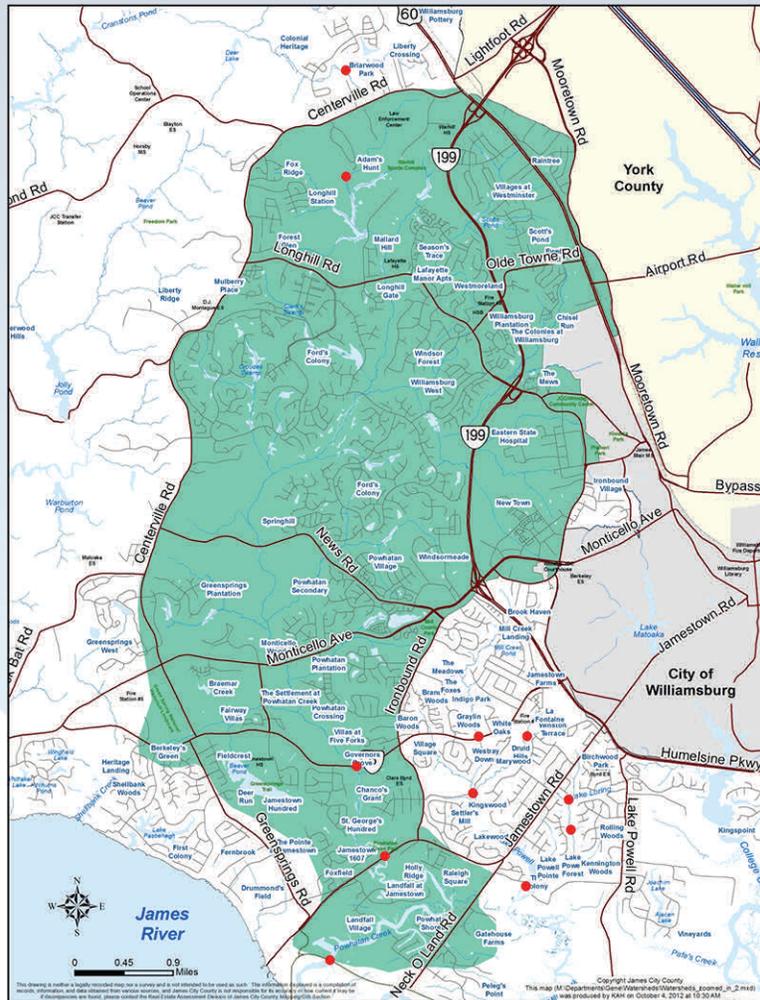
Completed Studies and Plans

- ◆ 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 jamestownva.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 Powhatan Creek Watershed is protected for generations to come.

2012 Skiffes Creek Watershed

Water Quality Report



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 marginally acceptable. Future monitoring will provide additional information.

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.

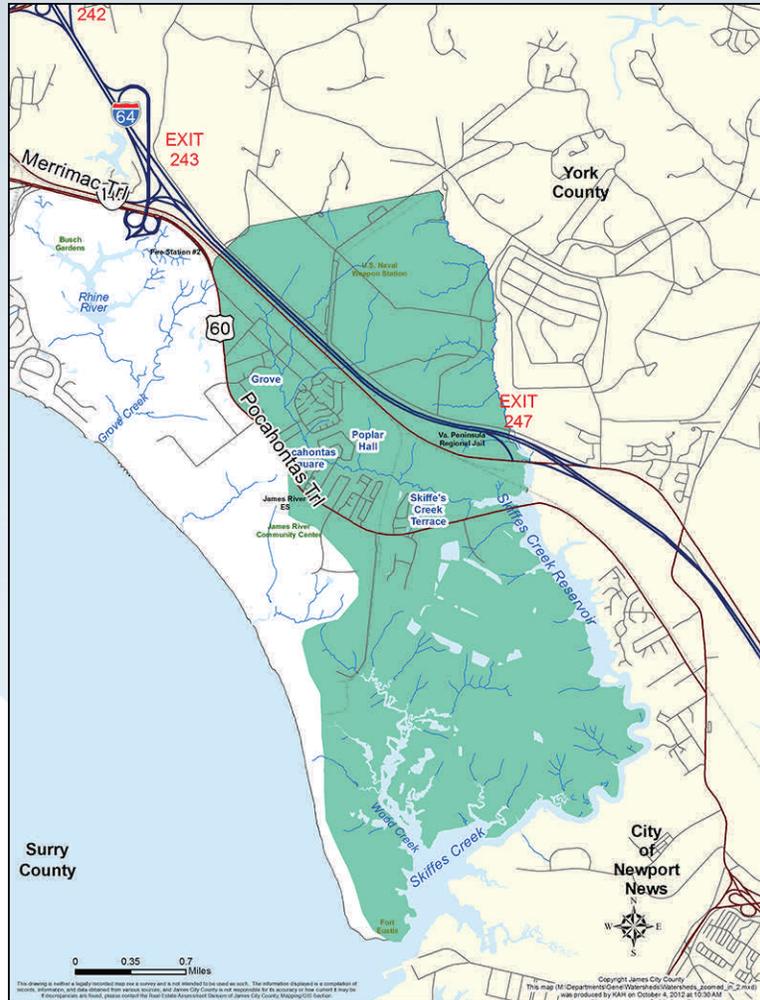
Completed Studies and Plans

- ◆ 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.
- ◆ Go to askhrgreen.org for more helpful ideas.

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.

2012

Ware Creek Watershed

Water Quality Report



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, water clarity 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, water clarity, 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 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, three sites within the watershed are monitored, and the results indicate that overall Ware Creek water quality ranges from marginally acceptable to acceptable and 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.

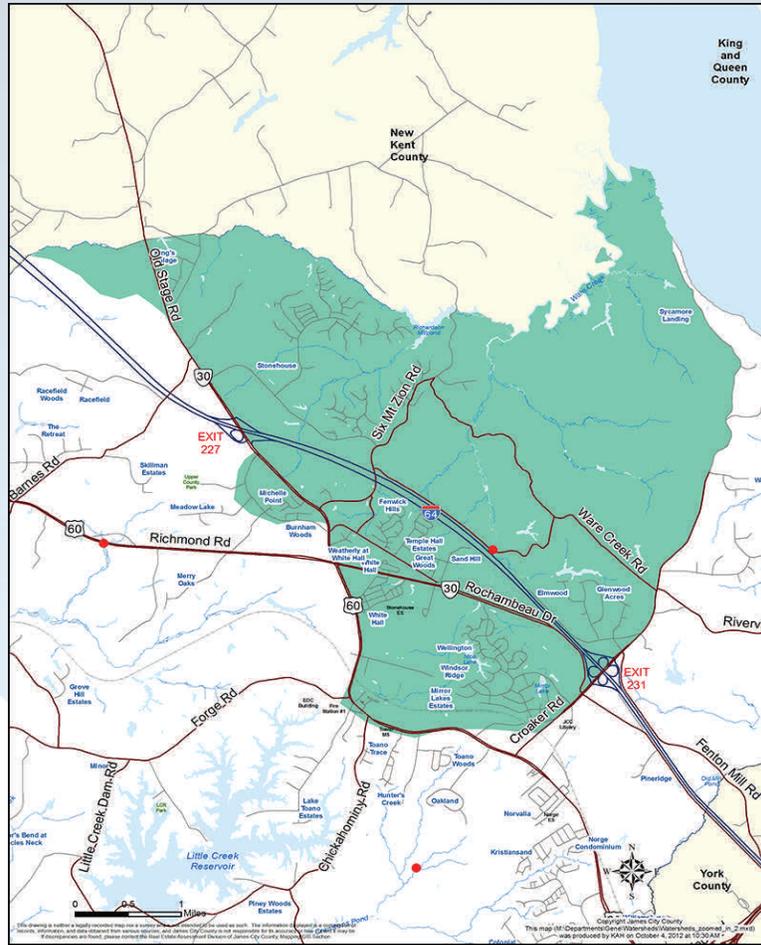
Completed Studies and Plans

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.
- ◆ 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.

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.

2012 Yarmouth Creek Watershed Water Quality Report



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 sampling in 2012 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.

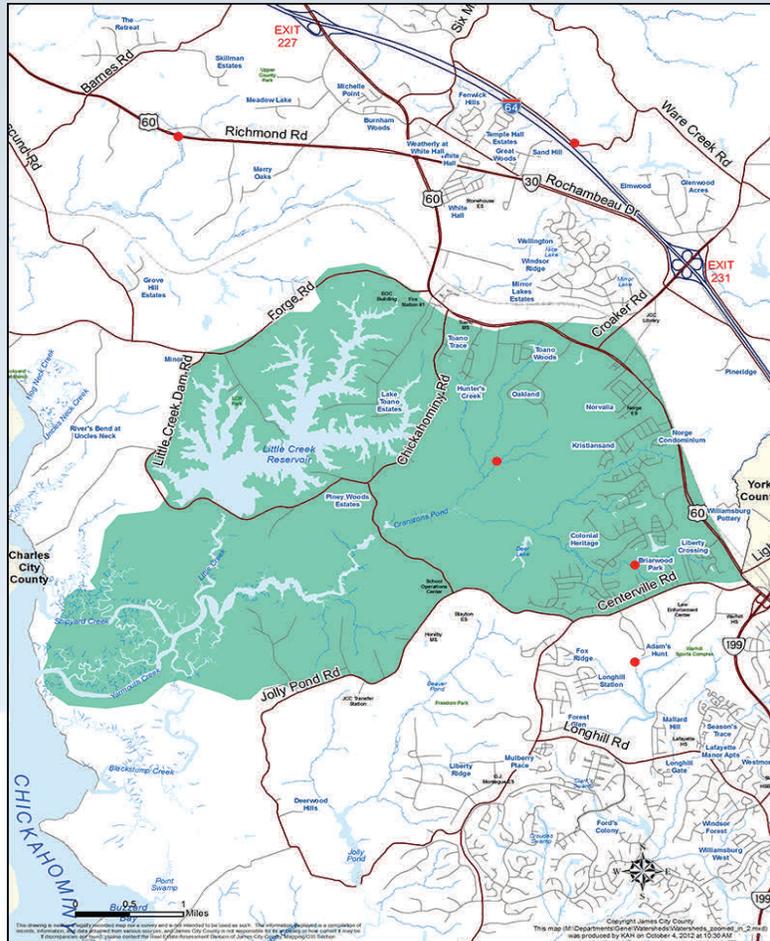
Completed Studies and Plans

- ◆ 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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- ◆ 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.

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 two options for applicants to consider:

Plant More Plants is designed to encourage qualified organizations to incorporate more plant species that are healthy for our environment while helping maintain or restore our water quality.

Stormwater Management Improvements 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.

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.
- Applicants agree to maintain the project for 5 years.
- Approved and completed projects will be awarded a 12-inch x18-inch PRIDE sign that reads: "Protected with PRIDE in James City County." The signs are mounted on a 5-foot pole and are to be located at the project site.
- Projects must be completed by June 30, 2013 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; and if a grant is awarded, applicants will be notified the amount at that time.
- Advance payments up to 50 percent of the award may be requested up to 60 days in advance of the initiation of the project. The reason for the request should be outlined in the "Project Application Form" and the "Grant Advancement Request" section must be completed.
- Full or final payment will be made upon project completion and resubmission of the "Project Budget Form" and receipts detailing the final materials and billed labor costs.



James City County PRIDE Grant Program Application Package

| Category | Plant More Plants | Stormwater Management Improvements |
|---|---|---|
| Monies available | Up to \$500 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 organization located within James City County including: HOAs, neighborhoods, businesses, associations and clubs |
| Program description | To promote and plant species that are healthy for our environment and maintain or restore our water quality | To enhance structural components to existing BMPs or add new BMP's that will improve our water quality |
| Examples | Tree plantings, erosion control, slope stabilization, streambank stabilization, wetland planting, removal/replacement of invasive species, and vegetative shoreline restorations, or educational activities | 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 | Beautification projects or projects without a water quality benefit | Routine maintenance, projects involving VDOT "Right of Way", projects that do not result in a water quality benefit |
| Program match | 75% JCC (up to \$500) 25% 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. |
| Amount of grant money available from 7/1/12 to 6/30/13 | \$2,000 | \$8,000 |
| Application deadline | May 17, 2013 | May 17, 2013 |
| Award timing | May 24, 2013 | May 24, 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):

Plant More Plants Stormwater Management Improvements

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

| Fiscal Year | DATE | Event | Staff | Display | Presentation | Audience | # Attending | Materials Distributed | Amounts | Message Focus |
|-------------|------------|---|--|---------|--------------|-----------------------------------|-------------|--|-------------|--|
| 2013 | 7/2/2012 | EFYI | | | | GENERAL PUBLIC | 1295 | ELECTRONIC NEWSLETTER | | Swimming Safety |
| 2013 | 8/2/2012 | General Services Dept Safety Training | Fran Geissler | no | yes | public works employees | 60 | Only Rain in the Drain shopping bags | 60 | Pollution Prevention - protect storm drains from maintenance activities |
| 2013 | 8/11/2012 | Super Turf Saturday Turf Love 911 | Fran Geissler, Allen Ayers (SPAC), Pat Menichino | yes | no | motivated DIY lawn care folks | 100 | 30 gardener's knee pads, 30 shopping bags, 60 native plant seeds w/Plant More Plant cards,30 hand sanitizers, 20 rain garden guides | see amounts | plant more (native) plants, only rain in the drain, scoop the poop |
| 2013 | fall 2012 | Master Gardeners Landscape Love homeowner consultations | volunteer Master Gardeners | no | no | motivated DIY lawn care folks | 70 | Plant More Plants cards w/native seeds, rain garden guides | 70 | plant more (native) plants, rain gardens can make a difference |
| 2013 | 9/26/2012 | County Open House | Suzanne Dyba, Paul Cuomo, Pat Menichino, Fran Geissler | yes | no | GENERAL PUBLIC | 100 | 40 Only Rain in the Drain bags, 40 Scoop the Poo handsanitizers, 40 bags on board, 25 message pens, 25 plant more plants seeds, 15 clean home brochure w/seeds, 30 knee pads | see amounts | plant more (native) plants, only rain in the drain, scoop the poop |
| 2013 | 11/1/2012 | EFYI | | | | GENERAL PUBLIC | 1295 | Electronic newsletter | | only rain in the drain - leaves in ditches and road gutters can cause flooding and increase pollutants |
| 2013 | 11/29/2012 | Ware Creek Watershed Stakeholders Meeting | Fran Geissler | yes | yes | Ware Creek Watershed Stakeholders | 20 | 10 Message Pens, 10 HRGreen bags, 10 Only Rain in the Drain bags | see amounts | General Watershed Health |
| 2013 | 2/15/2013 | EFYI | | | | GENERAL PUBLIC | 1295 | ELECTRONIC NEWSLETTER | | Love your Turf - great turf, less fertilizer |

| | | | | | | | | | | |
|------|-----------|--|---|-----|----------------------------------|--------------------------------|-----|--|-------------|--|
| 2013 | 3/4/2013 | James City County Concerned Citizens | Fran Geissler, Scott Thomas | no | yes | local advocacy group | 20 | 20 only Rain in the Drain bags, 20 message pens, 20 bags-on-board | see amounts | how local environmental programs work |
| 2013 | 4/20/2013 | James River Fest | Suzanne Dyba, Paul Cuomo, Pat Menichino, Fran Geissler | yes | yes (EnviroScape, WQ Monitoring) | GENERAL PUBLIC | 200 | 100 rain garden brochures, 150 bags-on-board, 150 scoop the poop hand sanitizers, 50 HRPDC reusable bags, 50 scoop the poop frisbees, 150 Save the Fish snacks | see amounts | local water quality information and how runoff pollution begins |
| 2013 | 4/27/2013 | Bark-in-the-Park (Heritage Humane Society) | Fran Geissler, Leah Hardenbergh, Paul Cuomo | yes | no | Pet Owners | 250 | 150 bags-on-board, 150 scoop the poop hand sanitizers, 50 HRPDC reusable bags, 50 scoop the poop frisbees, 150 Save the Fish snacks | see amounts | scoop the poop |
| 2013 | 5/17/2013 | Berkeley Middle School Stormwater Education Presentation | Suzanne Dyba | yes | yes | 6th graders and their teachers | 300 | None- information session and hands-on demonstration | | Water quality, runoff pollution, only rain in the drain, scoop the poop, plant more plants |
| 2013 | 6/8/2013 | Williamsburg Farmers Market | Fran Geissler, Pat Menichino, SPAC representatives (Allen Ayers, Nitant Desai, Phil Doggett, Doug Haller, Roger Schmidt, Bob Winters) | yes | no | Pet Owners | 400 | 150 bags-on-board, 150 scoop the poop hand sanitizers, 50 HRPDC reusable bags, 50 scoop the poop frisbees, 150 save the Fish snacks | see amounts | scoop the poop |

askHRgreen.org



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

Annual Report & Fiscal Year 2013

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EXECUTIVE DIRECTOR/SECRETARY

CHESAPEAKE

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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

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* MCKINLEY L. PRICE
SHARON P. SCOTT

NORFOLK

ANTHONY L. BURFOOT
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THOMAS R. SMIGIEL
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* JAMES O. McREYNOLDS
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*EXECUTIVE COMMITTEE MEMBER

PROJECT STAFF

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JULIA B. HILLEGASS
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LISA HARDY
REBEKAH EASTEP

HRPDC DEPUTY EXECUTIVE DIRECTOR
PUBLIC INFORMATION AND COMMUNITY AFFAIRS ADMINISTRATOR
SENIOR ENVIRONMENTAL PLANNER
PHYSICAL AND ENVIRONMENTAL PLANNER
ENVIRONMENTAL PLANNER

MICHAEL LONG
CHRISTOPHER VAIGNEUR
RICHARD CASE
JENNIFER COLEMAN

GENERAL SERVICES MANAGER
ASSISTANT GENERAL SERVICES MANAGER
FACILITIES SUPERINTENDENT
ADMINISTRATIVE ASSISTANT

Report Documentation

TITLE:

askHRgreen.org Annual Report for Fiscal Year 2012-2013

REPORT DATE

August 2013

GRANT/SPONSORING AGENCY

Local Funds

AUTHORS:

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Lisa Hardy

Julia Hillegass

**ORGANIZATION NAME,
ADDRESS AND TELEPHONE**

Hampton Roads Planning

District Commission

723 Woodlake Drive

Chesapeake, Virginia 23320

(757) 420-8300

www.hrpdcva.gov

ABSTRACT

This report provides a summary of the second year of the askHRgreen.org public outreach and education initiative. The report contains seven major sections. The first section provides background about askHRgreen.org. The second section describes campaign research. The third section provides an overview of campaign results for fiscal year 2012-2013. The fourth through seventh sections provide an overview of the individual initiatives and results from each of the four askHRgreen.org subcommittees: Stormwater Education, Recycling & Beautification, 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 2012-2013, approved by the Commission at its Quarterly Meeting of April 19, 2012.



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about askHRgreen.org

about askHRgreen.org

askHRgreen.org was developed to help Hampton Roads residents find their inner green with just the click of a mouse. For years, the 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 storm-water 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 larger environment. askHRgreen.org is powered by the 16 cities and counties of Hampton Roads, HRSD, and the Hampton Roads Planning District Commission.

You can “like” askHRgreen.org on Facebook 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.



Dear friends and members,

askHRgreen.org turned two this year – and what a couple of fun years it has been! What began as a region-wide public awareness and education campaign is quickly becoming a local green movement among residents from Williamsburg to Virginia Beach, and from Isle of Wight County to Poquoson. This year’s success would not have been possible without the dedication and involvement of our committee members from the cities of Chesapeake, Franklin, Hampton, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Virginia Beach and Williamsburg; the counties of Gloucester, Isle of Wight, James City, Southampton, Surry and York; and HRSD – thank you!

Julia

Julia Hillegass

*Public Information & Community Affairs Administrator
Hampton Roads Planning District Commission*



askHRgreen.org campaign research

In the fall of 2012, EAB Research conducted a second online survey (the first survey was conducted in fall 2010) to measure how the askHRgreen.org campaign was performing. Four-hundred residents of the region's 16 cities and counties participated in the study.

Overall, the 2012 survey revealed that the askHRgreen.org campaign has proven effective in educating and modifying the behavior of its target audiences. In addition, those who are aware of askHRgreen.org are more likely to seek information, have more knowledge and report positive behaviors. Highlights of the survey found that:

- 12% of those surveyed have heard about askHRgreen.org.
- Online was reported to be the largest source for awareness.
- 33% of "askHRgreen.org aware" respondents have visited the website.
- Overall self-perceived knowledge of local environmental issues has increased. The largest increases are among:
 - single females, under \$75,000 income
 - those aware of askHRgreen.org
- People aware of askHRgreen.org are the most frequent information seekers.

Since the 2010 benchmark study, there have been significant increases in the general use of and frequency of reusable bags as opposed to store-provided bags. Pouring fats, oils and grease down the drain or in the yard decreased 12 points from the 2010 survey, and the perceived harm rose 12 points - showing improvement in both the behavior of the action and the understanding that it is harmful.

While there were improvements in certain environmental areas, the findings revealed a "disconnect" between some behaviors and the personal impact of those actions, especially with regard to the effects of over fertilizing lawns and leaving pet waste on the ground.

- 65% of those surveyed understood that over fertilizing lawns leads to excesses of nitrogen and phosphorus in area waterways. Yet, only 7 percent of these respondents knew that this action results in discolored and foul-smelling waterways that are not desirable for swimming and boating.
- 23% of respondents who are using fertilizer are applying it 3 or more times a year.
- 55% of the people surveyed knew that leaving pet waste on the ground leads to bacteria being carried to local waterways through the storm drain. Of this total, 62% knew this would lead to contaminated waterways. Of the 62%, only 20% knew that contaminated waterways meant you couldn't swim at the beach or eat local seafood.

Over the next year, the askHRgreen.org team will use the survey results to make adjustments to the overall campaign to focus more on showing the connection between negative environmental behaviors and the resulting consequences, in addition to driving more people to the website.



highlights  **2012-2013**

942 Facebook Likes

**32,697 Website Visitors from
July 2012 – June 2013**

**Over 65 Million Opportunities
to See or Hear askHRgreen.org
in the Media**

**30,000 Green Learning Guides
Distributed to Sixth Graders**

**185,349 Green Living Inserts
Distributed through
The Virginian-Pilot & Daily Press**

**\$12,175 Environmental Education
Mini-grants Awarded to
31 Schools/Groups in 10 Localities**

fy 2012-2013 campaign schedule & results



Ten environmentally-themed media campaigns ran throughout FY13 for a total of 17 weeks of exposure.

| Campaign | Media | jul | aug | sep | oct | nov | dec | jan | feb | mar | apr | may | jun |
|--------------------------------------|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Garbage Disposal | R-O-FB | | | | | | | | | | | | |
| Tap vs. Bottled Water | R-P-O-FB | | | | | | | | | | | | |
| Fertilizer Use | R-O-FB | | | | | | | | | | | | |
| Green Learning Guide | P-O | | | | | | | | | | | | |
| askHRgreen.org Media | B-FB | | | | | | | | | | | | |
| Thanksgiving | R-O-FB | | | | | | | | | | | | |
| Electronics Recycling Events | R-FB | | | | | | | | | | | | |
| Fix-a-Leak Week | R-O-FB | | | | | | | | | | | | |
| Fertilizer/Outdoor Watering | R-P-O-FB | | | | | | | | | | | | |
| Drinking Water Week | R-O-FB | | | | | | | | | | | | |
| Green Living Newspaper Insert | P-O | | | | | | | | | | | | |
| askHRgreen.org E-Newsletter | | | | | | | | | | | | | |
| Public Relations | | | | | | | | | | | | | |
| Research | | | | | | | | | | | | | |
| askHRgreen.org Maintenance & Updates | | | | | | | | | | | | | |

Media Key: R = Radio P = Print O = Online FB = Facebook

| Total Advertising Weeks | | 17 |
|--|--|--------------|
| Impressions | | |
| Billboard | | 9.8 million |
| Newspaper | | 511,992 |
| Radio* | | 2.8 million |
| askHRgreen.org website | | 72,270 |
| Online Newspaper (The Virginian-Pilot & Daily Press) | | 3.7 million |
| Facebook | | 26.2 million |
| Media Added Value | | 18 million |
| Public Relations | | 4.6 million |
| Total Media Budget | | \$144,614 |
| Total Public Relations & Creative Budget | | \$73,500 |
| Value | | |
| Media Added Value | | \$149,114 |
| Public Relations | | \$368,604 |
| Total Exposure Value | | \$755,832 |
| Totals | | |
| Impressions | | 65.7 million |
| Cost per Thousand Impressions | | \$3.32 |
| Return on Investment | | 3.5 : 1 |

| askHRgreen.org Website Statistics | |
|-----------------------------------|--------|
| Visits | 32,697 |
| Unique Visitors | 25,092 |
| Average Page Views | 2.21 |
| Average Time on Site | 2:11 |
| Bounce Rate | 61% |

| askHRgreen.org E-Newsletter Statistics | |
|--|-------|
| Subscribers (as of June 2013) | 1,869 |
| Total Emails Sent | 19 |
| Open Rate | 13.9% |
| CTR (Click Through Rate) | 2.0% |
| Bounce Rate | 15.2% |

*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.

billboards & facebook

The askHRgreen.org campaign ran billboard ads across Hampton Roads for four paid weeks. The campaign achieved full market coverage with a total of 62 billboards: 52 on the southside and 10 on the peninsula. As an added bonus, many of the billboards remained in place for eight additional weeks. To increase exposure, a Facebook ad campaign ran simultaneously.

| askHRgreen.org Billboard & Facebook Campaign | |
|--|--------------|
| Paid Media (4 weeks) | |
| Billboards | |
| Impressions | 9.8 million |
| Facebook | |
| Impressions | 10.3 million |
| Clicks | 1,656 |
| CTR (Click Through Rate) | 0.016% |
| Unpaid Media | |
| Billboards | |
| Added Value Impressions | 18 million |
| Added Value | \$76,203 |
| Overall Campaign | |
| Total Impressions | 38 million |
| Total Budget | \$50,000 |
| Total Exposure Value | \$126,203 |
| Return on Investment | 2.5 : 1 |
| Cost per Thousand Impressions | \$1.31 |



green learning

In fall 2012, askHRgreen.org distributed over 21,000 Green Learning Guides to all sixth graders in Hampton Roads public schools. Written according to Virginia SOL guidelines by a team of experts who work in the region's public works and public utilities departments, Green Learning connects students to their environment by combining educational information with colorful maps, bold graphics, puzzles and fun activities. Green Learning allows students to explore watersheds and what it means to live in the Chesapeake Bay watershed; learn how to prevent stormwater pollution and identify ways to help keep waterways clean; and analyze daily water use to learn ways they can conserve resources to become environmental stewards at home and at school. The Green Learning Guide, and accompanying teacher's guide, can be downloaded online at askHRgreen.org/Green-Learning



"Thank you for producing this valuable information for our students."

Katrice Krebs

Great Bridge Middle School
Chesapeake, VA

"Incorporating green learning with science SOLs is great and I think both the teacher's guide and educational guide along with the activities is an awesome way to assist students in better understanding and retaining the information."

Patricia Bell

Northside Middle School
Norfolk, VA

green living

This was the second year for the *Green Living* newspaper insert. The insert was created in partnership with *The Virginian-Pilot* and included ads from local businesses in the green sector and contained over seven full pages of editorial content plus four half-page ads. The editorial content was packed with articles to get citizens thinking about how the actions they take (fertilizing lawns, raking leaves into the street, recycling, even flushing the toilet) impact the environment here in Hampton Roads. In addition, readers could:

- Explore our Hampton Roads watershed and see why the time to improve our region’s water quality is at hand.
- Go beyond the big blue bin and examine the business of recycling.
- Learn tips for keeping a “green” yard from a true garden guru, Jim Orband.
- Follow the path of water through our vast (and often forgotten) infrastructure.
- Learn why it’s time to “break up” with a common household appliance.



The insert was included in the April 17, 2013 edition of both *The Virginian-Pilot* and the *Daily Press*. In addition, members of askHRgreen.org received 10,000 overprints to distribute as needed.

| Green Living 16-page Insert | |
|---|-----------|
| Total Circulation (Virginian-Pilot & Daily Press) | 185,349 |
| Total Readership | 501,993 |
| Online Impressions | 80,002 |
| Overprints | 10,000 |
| Total Impressions | 581,995 |
| Total Budget | \$14,862 |
| Total Open Rate Value (based on rate card) | \$27,456 |
| Public Relations Value | \$293,439 |
| Total Insert Value | \$322,918 |
| Return on Investment | 22 : 1 |

“let’s talk green...” blog

The askHRgreen.org website features a blog written by committee members and guest bloggers covering everything from easy green tips to implement around the house to community events and local volunteer opportunities. The blog is interactive as readers are able to respond to posts with questions and comments. In FY13, askHRgreen.org bloggers published over 100 interesting posts through the “let’s talk green” blog.

askHRgreen.org 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 FY13, 19 e-newsletters covering seasonal “green” tips, events and askHRgreen.org campaign updates were sent to 1,869 subscribers. Looking ahead to FY14, the recipient list is already up to over 2,754 subscribers.



social media

In FY13, social media was a key source for public outreach. Facebook, Twitter, YouTube, and Pinterest were all used to share information, promote the blog and upcoming events, and hold contests.



media ambassadors

This year, askHRgreen.org hosted a two-part media ambassador training for eleven team members. The training included an in-depth review of campaign messaging and the role of an ambassador, tips on how to prepare for an interview, and mock interviews with WVEC-TV Anchor LaSalle Blanks. Below is the list of askHRgreen.org media ambassadors who received the training and are now well-prepared to handle any future media inquiries:

- Chris Ausink, Hampton
- Donna Corbus, Portsmouth
- Katie Cullipher, HRPDC
- Lisa Hardy, HRPDC
- Laurie Halperin, York
- Deidre Harmon, Norfolk
- Julia Hillegass, HRPDC
- Elizabeth Vaughn, Chesapeake
- Brianna Venner, Hampton
- Lori Woolman, Newport News
- Tiffany Wright, Virginia Beach

regional 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 FY13, committee members represented askHRgreen.org at 28 community events.



| 2012-2013 Regional Events | | |
|---------------------------|---|----------------|
| 7/7 | VMI Community Health Day | Norfolk |
| 7/20 | Latin Fiesta | Virginia Beach |
| 8/4 | Beacon Light Civic League Berkley Reunion | Norfolk |
| 9/8 - 9/9 | Hampton Bay Days | Hampton |
| 9/13 - 9/16 | Isle of Wight County Fair | Windsor |
| 9/23 | Go Green Expo - NN Master Gardeners | Newport News |
| 9/28 - 9/29 | Hampton Roads Sustainable Living Expo | Virginia Beach |
| 10/4 - 10/7 | Peanut Festival | Suffolk |
| 10/13 | Lynnhaven River Now Annual Fall Fest | Virginia Beach |
| 10/18 | Greenbrier Intermediate Event | Chesapeake |
| 10/20 | Williamsburg Farmer's Market | Williamsburg |
| 2/8 - 2/10 | PHBA Hampton Roads Home & Garden Show | Hampton |
| 2/16 - 2/17 | Sustainable Living Fair | Norfolk |
| 3/1 - 3/3 | TBA Mid-Atlantic Home & Garden Show | Virginia Beach |
| 3/9 | Trash Bash 2.0 | Virginia Beach |
| 3/9 | SEVA CA Day | Virginia Beach |
| 3/23 | Community Day @ Mack Benn Elementary | Suffolk |
| 4/13 | Williamsburg Farmer's Market | Williamsburg |
| 4/20 | Earth Day Celebration | Newport News |
| 4/22 | NASA Earth Day Event | Hampton |
| 4/23 | "Big Blue Goes Green" - ODU event | Norfolk |
| 4/27 | RiverFest | Norfolk |
| 5/18 | Hampton Environmental Summit | Hampton |
| 5/18 | Hampton Master Gardeners | Portsmouth |
| 5/23 | Sensible Seafood Festival | Virginia Beach |
| 6/6 | NASA Safety & Health Expo | Hampton |
| 6/26 | Environmental Fair at Busch Gardens Brewery | Williamsburg |
| 6/29 | Olden Days | Smithfield |

mini-grant program

askHRgreen.org offers grants of up to \$500 for environmentally-themed projects in schools and with youth groups. To be eligible, the project must be in-line with one or more of the askHRgreen.org messages (waste reduction, water conservation, recycling, watershed education, soil erosion, etc.). In FY13, a total of \$12,175* was awarded to 31 schools/groups in 10 localities.

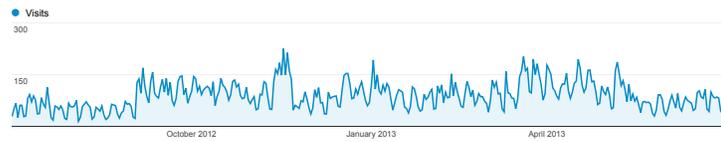


2012-2013 Environmental Education Mini-Grants

| | | | |
|---|---|----------------|-------|
| Western Branch Middle Oyster & Trout Restoration | Corporate Landing Middle School | Chesapeake | \$500 |
| Monarch Butterfly Conservation | Ware Academy | Gloucester | \$234 |
| Going Green | Forrest Elementary School | Hampton | \$240 |
| Rain Barrels for Vegetable Garden | Spratley Gifted Center | Hampton | \$160 |
| Recycling and the 3Rs | Spratley Gifted Center | Hampton | \$280 |
| Graph How Much We Reduce | Point Option Nontraditional High School | Newport News | \$425 |
| Oysters Saving Our Bay | Trinity Lutheran School | Newport News | \$500 |
| South Ave Beautification | NN Green Foundation | Newport News | \$500 |
| United Campus Ministries Beautification | United Campus Ministries - CNU | Newport News | \$500 |
| Green Team Waterwise Gardening | Sewells Point Elementary School | Norfolk | \$500 |
| Oyster Restoration | Norfolk Christian Lower Schools | Norfolk | \$220 |
| Value in Vermicomposting | Oceanair Elementary School | Norfolk | \$420 |
| Watershed Impact on Sea Turtle Survival | Azalea Gardens Middle School | Norfolk | \$275 |
| We Care About the Earth Buttons | James Monroe Elementary School | Norfolk | \$500 |
| Wetland Restoration Project | Booker T. Washington High School | Norfolk | \$550 |
| Worm Watchers | Norview Middle School | Norfolk | \$420 |
| Do the Rot Thing | Westhaven Elementary School | Portsmouth | \$420 |
| I Speak for the Trees | The Elizabeth River Project | Portsmouth | \$500 |
| Planting Seeds for a Healthy Watershed | Parkview Elementary | Portsmouth | \$500 |
| Water Monitoring, Testing & Oil Spill Cleanup Methods | Smithfield Packing Company Inc. Environmental & Wastewater Division | Smithfield | \$200 |
| Environmental Showcase | John F. Kennedy Middle School | Suffolk | \$225 |
| Battery Recycling: Glenwood Gators Get a Charge From Helping Mother Earth | Glenwood Elementary School | Virginia Beach | \$310 |
| Operation Oysters | Strawbridge Elementary School | Virginia Beach | \$370 |
| Oyster Reef Restoration | Norfolk Christian Schools | Virginia Beach | \$110 |
| Oyster Restoration | Va. Beach Middle School Environmental Club | Virginia Beach | \$450 |
| Oysters RULE | Trantwood Elementary School | Virginia Beach | \$500 |
| Pearls of Educational Wisdom | Linkhorn Park Elementary School | Virginia Beach | \$465 |
| Rain Barrel for the Teaching Gardens | Bettie F. Williams Elementary School | Virginia Beach | \$95 |
| Water Quality in the Watershed | Corporate Landing Middle School | Virginia Beach | \$420 |
| Worms Love Our Leftovers | Bullfrogs and Butterflies | Virginia Beach | \$500 |
| Monarch Butterfly Garden Coventry Elementary | Coventry Elementary School | Yorktown | \$437 |
| Monarch Initiative | Youth Environmental Programs VCE-York/Poquoson | Yorktown | \$500 |

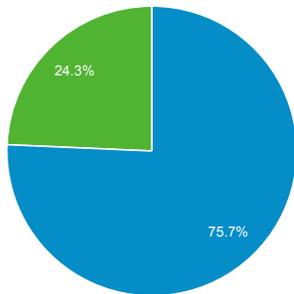
*Recycling & Beautification Subcommittee awarded \$4,699 • Stormwater Education Subcommittee awarded \$5,879 • Water Awareness Subcommittee awarded \$1,597

askHRgreen.org results



| askHRgreen.org Website Statistics | | |
|-----------------------------------|-----------------|-----------------|
| | 2011-2012 | 2012-2013 |
| Visits | 27,424 | 32,697 |
| Unique Visitors | 19,920 | 25,092 |
| Pageviews | 67,047 | 72,270 |
| Pages per Visit | 2.44 | 2.21 |
| Average Visit Duration | 2 mins, 22 secs | 2 mins, 11 secs |
| Bounce Rate | 61.24% | 61.27% |
| % New Visits | 72.49% | 75.65% |

■ New Visitor ■ Returning Visitor



Top Ten Website Traffic Sources:

- Google organic
- Direct
- Pilotonline.com
- Facebook
- e-Newsletters
- VBgov.com
- Google.com
- DailyPress.com
- Bing organic
- Pinterest.com

in the news...

askHRgreen.org was all over the media in FY13. In total, we...

- Issued 15 news releases.
- Facilitated 16 print and online articles.
- Participated in 15 television interviews.
- Achieved a total publicity value of \$368,604.





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: Electronics Recycling

Target Audience: Adults; Age 18+

The proper management and handling of unwanted electronics continued as a campaign message again in FY13. Two electronics recycling events (one on the southside, one on the peninsula) were held in conjunction with Keep America Beautiful's "America Recycles Day." The Peninsula event was held at The Home Depot in Newport News on Monday, November 12. The Southside event was held on Saturday, November 17 in Virginia Beach. The Arc of the Virginia Peninsula and Synergy Recycling donated their time to provide free electronic recycling, and Stealth Shredding donated its time to provide free document shredding services. Special effort was given again this year to reach out to small businesses.

askHRgreen.org

**INVITES YOU TO GIVE YOUR
UNWANTED ELECTRONICS
A PROPER SEND-OFF!**



MARK YOUR CALENDAR FOR THESE FREE ELECTRONICS RECYCLING EVENTS:

Virginia Beach Collection Site Results

- 250 vehicles
- 15,000 pounds of electronics
- 8,000 pounds of paper

Newport News Collection Site Results

- 156 vehicles
- 12,773 pounds of electronics
- 4,000 pounds of paper

This year Cox Conserves partnered with our electronics recycling efforts by providing a \$20,000 media schedule at no charge. As a result, Cox aired 1,105 30-second TV spots over nine weeks to promote responsible electronics recycling in Hampton Roads.

Electronics Recycling Events Media & Public Relations

Paid Media (0.5 weeks)

| Radio | |
|-------------------------|-----------|
| Impressions | 103,311 |
| Reach | 30.3% |
| Frequency | 4.4 |
| Facebook | |
| Impressions | 1,269,593 |
| Clicks | 257 |
| CTR (Clickthrough Rate) | 0.020% |

Unpaid Media

| | |
|--|---------|
| Added Value | NA |
| Added Value Impressions | NA |
| Articles and Interviews | 5 |
| Public Relations Impressions | 222,968 |
| Public Relations Value (unpaid coverage) | \$1,905 |

Overall Campaign

| | |
|-------------------------------|-----------|
| Total Impressions | 1,622,872 |
| Total Budget | \$2,500 |
| Total Exposure Value | \$4,405 |
| Return on Investment | 1.76 : 1 |
| Cost per Thousand Impressions | \$1.54 |

Focal Area: Christmas Tree Recycling

Target Audience: Entire Hampton Roads Community

The majority of localities in Hampton Roads provide Christmas tree pickup and recycling. In FY13, askHRgreen.org helped to get the word out about each locality's

service by issuing a news release, featuring the information prominently on the website, and promoting it via Facebook. The information was well received by the media as it was featured in both *The Virginian-Pilot* and *AltDaily* and broadcast on the WVEC-TV 13 News 12 p.m. newscast and WAVY-TV 10 News 6 p.m. newscast, for a total public relations exposure value of \$7,590.



Focal Area: Great American Cleanup™

Target Audience: Entire Hampton Roads Community

askHRgreen.org supported and promoted the Great American Cleanup efforts taking place across Hampton Roads from April through June 2013 by issuing news releases, featuring the information prominently on the website and events calendar, promoting the local events via Facebook, and taking part in television interviews on Suffolk TV-8's "On the Scene" program, Norfolk TV-48's "Norfolk Perspectives," and WVEC-TV 13's "Dialogue" for a total public relations exposure value of \$3,000.





stormwater education subcommittee

The Stormwater Education Subcommittee is a cooperative partnership of the region's sixteen 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: Pet Waste

Target Audience: Women; Age 18-49; Not College Graduates

In an effort to educate Hampton Roads' dog owners on the importance of picking up after their pets, a rack card was developed and produced in FY13. The "Poop! Bag it! Trash it!" rack cards, along with dog waste bag holders, were distributed at various community events in FY13, particularly those that were identified as dog-friendly. They were also delivered to animal shelters and veterinarian offices for distribution.



Focal Area: Lawn Care**Target Audience:** Men; Age 35-64; College Graduates; All Household Income Ranges

Based on the target audience information from the fall 2010 survey, the subcommittee ran the "Fall Yard Challenge" radio and online campaign from October 1-14, 2012. The promotions reminded people to "know their grass and test their soil before fertilizing, and that stormwater runoff washes fertilizer chemicals into waterways, killing aquatic life.

**Focal Area:** Lawn Care**Target Audience:** Adults; Age 25-54

The Stormwater Education Subcommittee also partnered with the Water Awareness Subcommittee in the spring of FY13 to promote green landscaping practices and smart outdoor watering tips. This joint media campaign combined radio and online ads that ran for two weeks from March 25 through April 7, 2013. The campaign combined a 60-second radio spot with Facebook ads and banner placements on pilotonline.com and dailypress.com.

**Fall Fertilizer Media & Public Relations****Paid Media (2 weeks)**

Radio

| | |
|-------------|---------|
| Impressions | 372,240 |
| Reach | 34.6% |
| Frequency | 3.7 |

Online Newspaper (The Virginian-Pilot & Daily Press)

| | |
|-------------------------|---------|
| Impressions | 564,482 |
| Clicks | 1,145 |
| CTR (Clickthrough Rate) | 0.20% |

Facebook

| | |
|-------------------------|-----------|
| Impressions | 2,512,365 |
| Clicks | 456 |
| CTR (Clickthrough Rate) | 0.018% |

Unpaid Media

| | |
|-------------|---------|
| Added Value | \$9,180 |
|-------------|---------|

Overall Campaign

| | |
|-------------------------------|-----------|
| Total Impressions | 3,452,192 |
| Total Budget | \$12,000 |
| Total Exposure Value | \$21,180 |
| Return on Investment | 1.77 : 1 |
| Cost per Thousand Impressions | \$3.48 |

Spring Landscaping Media & Public Relations**Paid Media (2 weeks)**

Radio

| | |
|-------------|---------|
| Impressions | 645,000 |
| Reach | 26.2% |
| Frequency | 4.1 |

Online Newspaper (The Virginian-Pilot & Daily Press)

| | |
|-------------------------|---------|
| Impressions | 702,708 |
| Clicks | 1,513 |
| CTR (Clickthrough Rate) | 0.22% |

Facebook

| | |
|-------------------------|-----------|
| Impressions | 2,081,357 |
| Clicks | 447 |
| CTR (Clickthrough Rate) | 0.02% |

Unpaid Media

| | |
|-------------|---------|
| Added Value | \$8,196 |
|-------------|---------|

Overall Campaign

| | |
|-------------------------------|-----------|
| Total Impressions | 3,438,661 |
| Total Budget | \$15,001 |
| Total Exposure Value | \$23,197 |
| Return on Investment | 1.55 : 1 |
| Cost per Thousand Impressions | \$4.36 |



Focal Area: Only Rain Down the Storm Drain
Target Audience: Entire Hampton Roads Community

There are thousands of storm drains across Hampton Roads that all lead directly to our waterways. To help remind people that “only rain belongs down the drain,” the subcommittee has been recruiting schools and volunteer groups of all ages to mark storm drains with medallions that say “No Dumping: Leads To Waterway.” The program includes medallions, adhesive, a lesson plan and PowerPoint presentation about stormwater and how individual actions affect our local waterways. Each group is required to work with their locality’s committee member to select the storm drains for marking. This also allows the locality to record where the medallions have been placed. This fiscal year, 460 medallions (23 boxes of 20) were distributed through the askHRgreen.org storm drain medallion program.

- **Newport News: 140 medallions**
- **Norfolk: 100 medallions**
- **Portsmouth: 180 medallions**
- **York County: 40 medallions**
- **Virginia Beach: 688 medallions***



**The City and Virginia Beach Clean Community Commission operate a separate Storm Drain Marker Program designed to improve public awareness of the environmental effects of dumping in storm drains and the resulting water quality issues. In FY13, volunteers in Virginia Beach marked 688 storm drains with watershed-specific medallions through that program.*





water awareness subcommittee

The Water Awareness Subcommittee is an education committee comprising 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 assists localities in meeting requirements of various water supply and ground water permits.

Focal Area: Water Efficiency

Target Audience: Adults; Age 18-49; Household Income < \$75,000

The Water Awareness Subcommittee continues to promote wise water use in a variety of ways. Members participate in numerous regional community events throughout the year to promote conservation by talking to the public and distributing promotional items such as rain gauges and 5-minute shower timers as well as educational “Water, Use It Wisely” brochures and Water Wise Landscaping Guides.

In FY13, the subcommittee sponsored a media campaign combining radio and online ads that ran during the fifth annual National Fix a Leak Week, March 18-24, 2013. The campaign combined a 60-second radio spot with Facebook ads and banner placements on pilotonline.com and dailypress.com. In response to a news release issued by askHRgreen.org, the Fix a Leak Week campaign was also featured in a special interview segment on WAVY TV/Fox 43’s The Hampton Roads Show on March 20, 2013.



Fix a Leak Week Media & Public Relations**Paid Media (1 week)**

| Radio | |
|--|-----------|
| Impressions | 225,850 |
| Reach | 15.4% |
| Frequency | 2.1 |
| Online Newspaper (The Virginian-Pilot & Daily Press) | |
| Impressions | 354,986 |
| Clicks | 651 |
| CTR (Clickthrough Rate) | 0.18% |
| Facebook | |
| Impressions | 1,273,742 |
| Clicks | 255 |
| CTR (Clickthrough Rate) | 0.02% |
| Unpaid Media | |
| Added Value | \$2,959 |
| Overall Campaign | |
| Total Impressions | 1,856,668 |
| Total Budget | \$7,760 |
| Total Exposure Value | \$10,719 |
| Return on Investment | 1.38 : 1 |
| Cost per Thousand Impressions | \$4.18 |

FY13 to promote green landscaping practices and smart outdoor watering tips. This joint media campaign combined radio and online ads that ran for two weeks from March 25 through April 7, 2013. The campaign combined a 60-second radio spot with Facebook ads and banner placements on pilotonline.com and dailypress.com.

Spring Landscaping Media & Public Relations**Paid Media (2 weeks)**

| Radio | |
|--|-----------|
| Impressions | 645,000 |
| Reach | 26.2% |
| Frequency | 4.1 |
| Online Newspaper (The Virginian-Pilot & Daily Press) | |
| Impressions | 702,708 |
| Clicks | 1,513 |
| CTR (Clickthrough Rate) | 0.22% |
| Facebook | |
| Impressions | 2,081,357 |
| Clicks | 447 |
| CTR (Clickthrough Rate) | 0.02% |
| Unpaid Media | |
| Added Value | \$8,196 |
| Overall Campaign | |
| Total Impressions | 3,438,661 |
| Total Budget | \$15,001 |
| Total Exposure Value | \$23,197 |
| Return on Investment | 1.55 : 1 |
| Cost per Thousand Impressions | \$4.36 |



Focal Area: Value of Tap Water

Target Audience: Adults; Age 25-54

Focal Area: Value of Tap Water

Target Audience: Women; Age 25-49

The Water Awareness Subcommittee also partnered with the Stormwater Education Subcommittee in the spring of

In FY13, the Water Awareness Subcommittee continued promoting the “value of tap water” message to the residents of Hampton Roads. The message was two-fold: educating people on the benefits of choosing tap water over bottled water and the importance of maintaining the public water infrastructure that cleans and delivers our most precious resource. The subcommittee sponsored two media campaigns to promote both messages. The Tap vs. Bottled Water promotion ran for two weeks from September 17-30, 2012 and combined a 60-second radio spot with Facebook

ads and banner placements on pilotonline.com and dailypress.com.

| Tap vs. Bottled Water Media & Public Relations | |
|--|-----------|
| Paid Media (2 weeks) | |
| Radio | |
| Impressions | 397,500 |
| Reach | 47.8% |
| Frequency | 3.1 |
| Online Newspaper (The Virginian-Pilot & Daily Press) | |
| Impressions | 624,106 |
| Clicks | 846 |
| CTR (Clickthrough Rate) | 0.14% |
| Facebook | |
| Impressions | 2,735,137 |
| Clicks | 521 |
| CTR (Clickthrough Rate) | 0.019% |
| Unpaid Media | |
| Added Value | \$10,612 |
| Overall Campaign | |
| Total Impressions | 3,759,380 |
| Total Budget | \$14,736 |
| Total Exposure Value | \$25,348 |
| Return on Investment | 1.72 : 1 |
| Cost per Thousand Impressions | \$3.92 |

| Value of Water/Infrastructure Media & Public Relations | |
|--|-----------|
| Paid Media (1 week) | |
| Radio | |
| Impressions | 240,770 |
| Reach | 16.8% |
| Frequency | 2.3 |
| Online Newspaper (The Virginian-Pilot & Daily Press) | |
| Impressions | 360,006 |
| Clicks | 623 |
| CTR (Clickthrough Rate) | 0.17% |
| Facebook | |
| Impressions | 1,626,624 |
| Clicks | 312 |
| CTR (Clickthrough Rate) | 0.019% |
| Unpaid Media | |
| Added Value | \$3,135 |
| Overall Campaign | |
| Total Impressions | 2,229,248 |
| Total Budget | \$7,500 |
| Total Exposure Value | \$10,635 |
| Return on Investment | 1.42 : 1 |
| Cost per Thousand Impressions | \$3.36 |

Focal Area: Value of Tap Water

Target Audience: Adults; Age 25-54;
Household Income < \$75,000

The Value of Water/Infrastructure Sustainability promotion ran during Drinking Water Week from May 6-12, 2013 combining a 60-second radio spot with Facebook ads and banner placements on pilotonline.com and dailypress.com

IS WHAT YOU SEE WHAT YOU GET?

WATER GET THE FULL PICTURE!

Learn about our aging water infrastructure and what it takes to maintain it askHRgreen.org



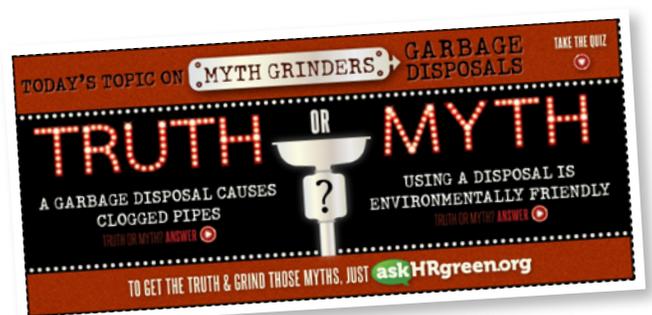
fats, oils and grease (fog) education subcommittee

The Fats, Oils and Grease 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 prevent 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: Garbage Disposal Use

Target Audience: Women; Age 35-64

In FY13, the FOG Education Subcommittee continued to discourage the use of garbage disposals and encourage best management practices for cleaning up in the kitchen. The "Myth Grinders" radio and online campaign was developed to help break the myth that garbage disposals are a kitchen necessity and educate residents about the harm they cause to sanitary sewer pipes. The Myth Busters promotion ran for two weeks from September 3-16, 2012 and combined a 60-second radio spot with Facebook ads and banner placements on pilotonline.com and dailypress.com.



Garbage Disposal Media & Public Relations**Paid Media (2 weeks)**

| | |
|--|-----------|
| Radio | |
| Impressions | 367,600 |
| Reach | 36.5% |
| Frequency | 3.1 |
| Online Newspaper (The Virginian-Pilot & Daily Press) | |
| Impressions | 663,868 |
| Clicks | 1,357 |
| CTR (Clickthrough Rate) | 0.20% |
| Facebook | |
| Impressions | 2,923,228 |
| Clicks | 624 |
| CTR (Clickthrough Rate) | 0.02% |
| Unpaid Media | |
| Added Value | \$12,601 |
| Overall Campaign | |
| Total Impressions | 3,957,723 |
| Total Budget | \$12,752 |
| Total Exposure Value | \$25,353 |
| Return on Investment | 1.99 : 1 |
| Cost per Thousand Impressions | \$3.22 |

FOG Thanksgiving Media & Public Relations**Paid Media (1 week)**

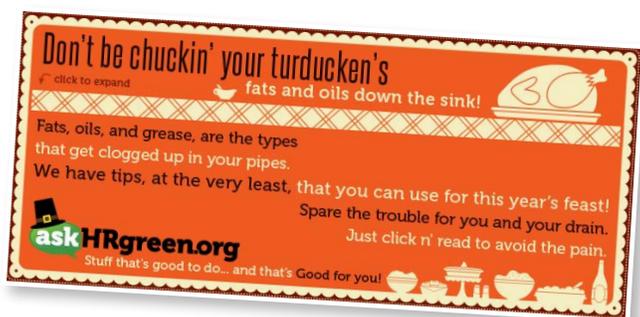
| | |
|--|-----------|
| Radio | |
| Impressions | 426,790 |
| Reach | 25.5% |
| Frequency | 4.8 |
| Online Newspaper (The Virginian-Pilot & Daily Press) | |
| Impressions | 331,058 |
| Clicks | 831 |
| CTR (Clickthrough Rate) | 0.25% |
| Facebook | |
| Impressions | 1,456,396 |
| Clicks | 271 |
| CTR (Clickthrough Rate) | 0.02% |
| Unpaid Media | |
| Added Value | \$7,340 |
| Overall Campaign | |
| Total Impressions | 2,214,244 |
| Total Budget | \$7,501 |
| Total Exposure Value | \$14,841 |
| Return on Investment | 1.98 : 1 |
| Cost per Thousand Impressions | \$3.39 |

Focal Area: Fats, Oils and Grease Disposal**Target Audience:** Women; Age 35-64**Focal Area:** FOG Regional Training Program**Target Audience:** Food Service Establishment Employees and Grease Haulers

The FOG Education Subcommittee sponsored a radio and online campaign in November to highlight best management practices for cleaning up in the kitchen. The Thanksgiving-themed promotion used humor to educate the public about the fats, oils and grease associated with holiday cooking and the harmful blockages and backups that can result from improper disposal. The campaign aired from November 17-21, 2012 and combined a 60-second radio spot with Facebook ads and banner placements on pilotonline.com and dailypress.com.

In FY13, the FOG Education Subcommittee launched www.HRFOG.com, a new online tool for regional FOG training and certification. The website was designed to help localities inform and train individuals working in the food service industry on proper maintenance of grease control devices and the harmful effects of FOG on the region's sanitary sewer systems. Certification is required by FOG ordinances in some Hampton Roads localities and the new site offers two programs at no cost: one for food service establishment employees and another for grease haulers.

In addition to the free certification programs, the website also provides a wealth of training materials and resources from detailed presentations and step-by-step instructional guides, to posters and educational brochures that can be downloaded and printed.





glossary of terms

added value

Earned but unpaid advertising value.

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.

ctr (clickthrough rate)

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.

exposure value

The combination of advertising cost and public relations value.

frequency

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

impression

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.

unique visitors

A measure of the amount of unique people who visit a site, or click on a link in a given amount of time. While a single person could tally multiple page views by reloading a page, it will still count as a single unique visitor.



askHRgreen.org

GREEN LEARNING

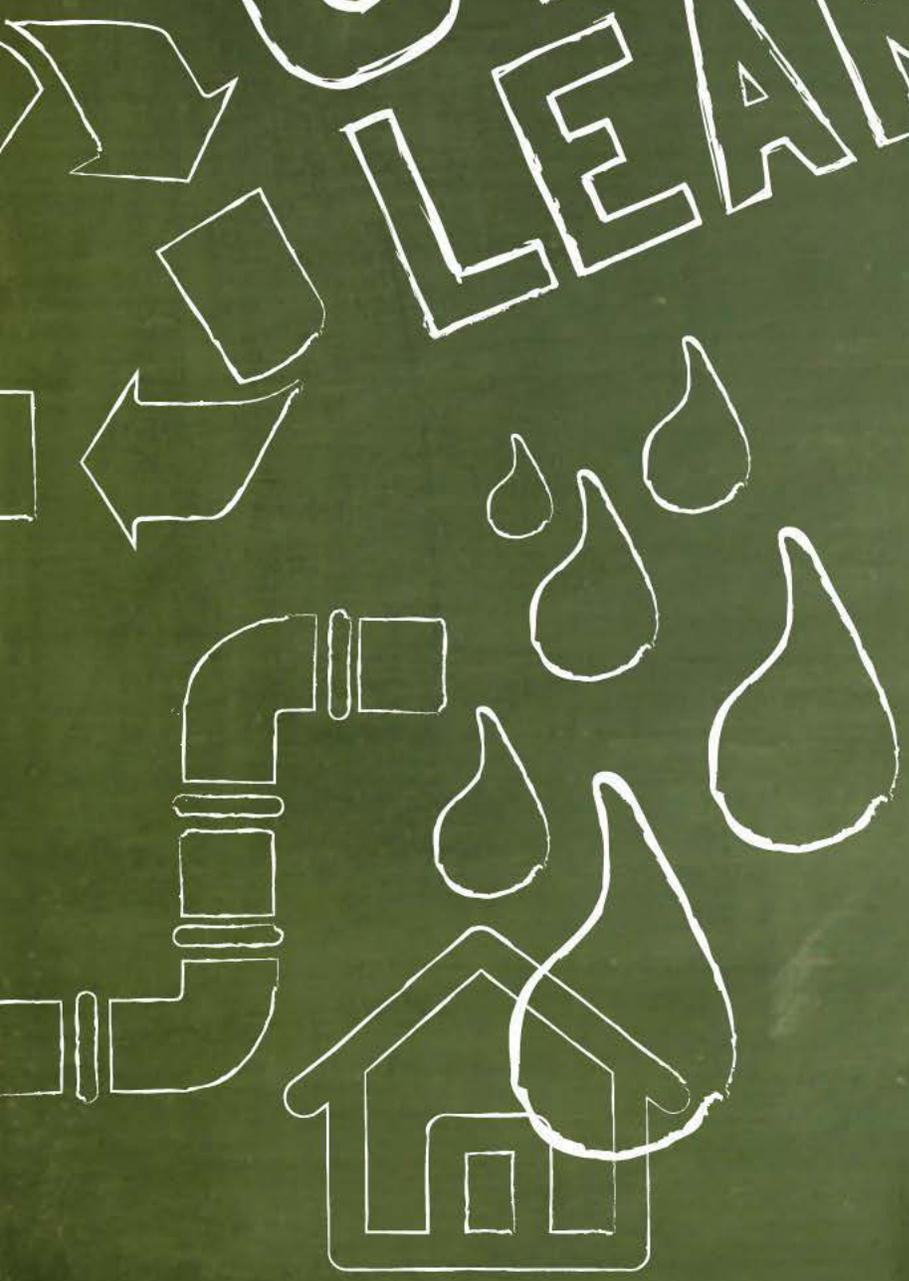


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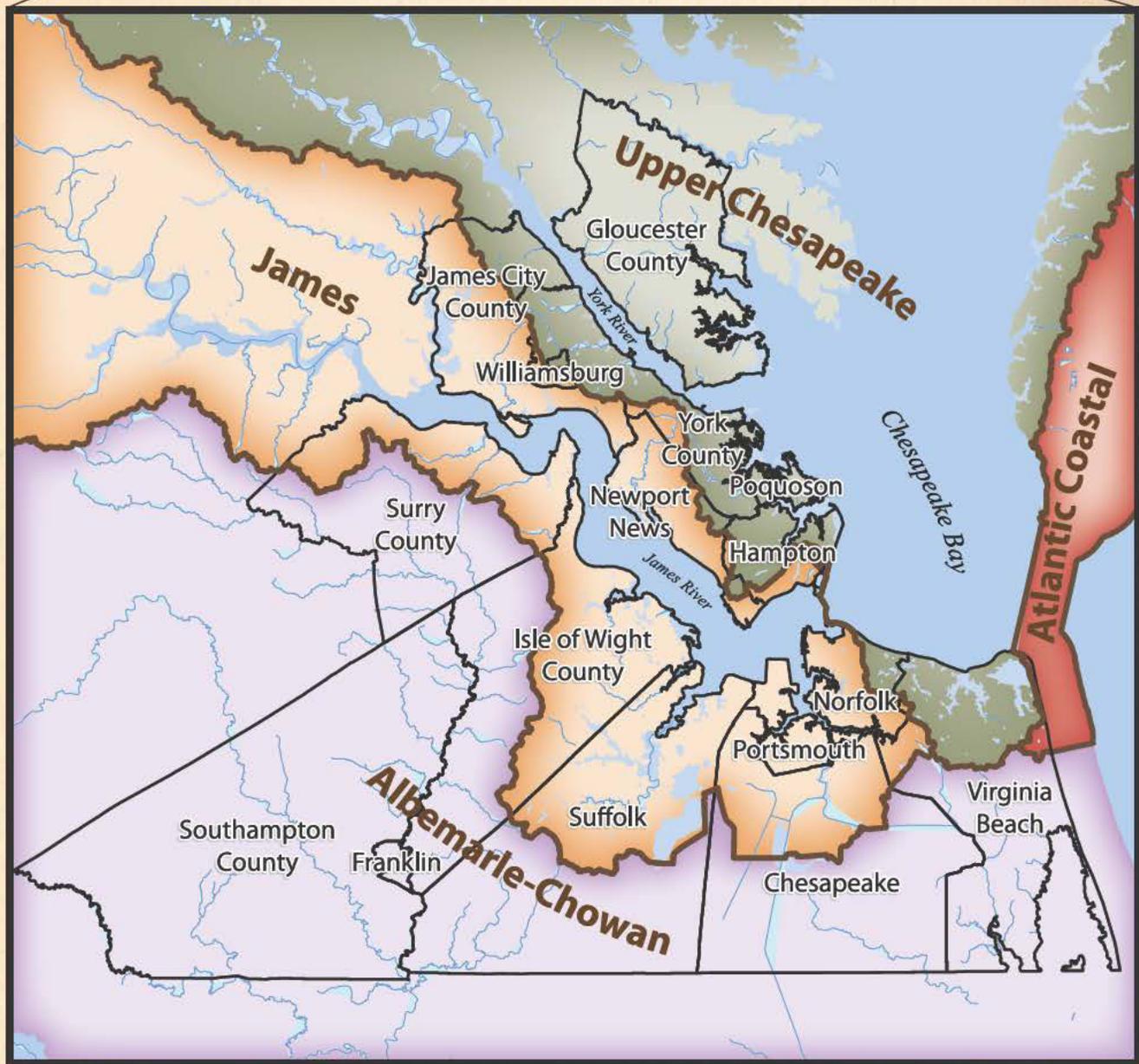
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| The 411 on TMDL | 3 |
| Watershed Terminology Puzzler | 4 |
| Stormwater Pollution | 5 |
| Slow the Flow | 6 |
| Pointing to the Source of Pollution | 7 |
| Check Your Pollution Source IQ | 7 |
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MAJOR WATERSHEDS IN VIRGINIA



What is a WATERSHED?

MAJOR WATERSHEDS IN HAMPTON ROADS



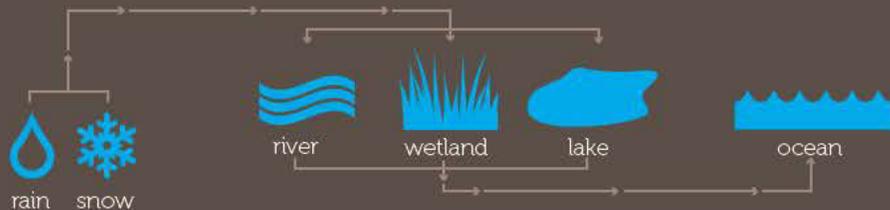
MAP KEY

| | | | |
|--|-------------------------|----------------|----------------------|
| | Watershed Boundary | James | Major Watershed Name |
| | City or County Boundary | Hampton | City or County Name |
| | Rivers | | |

TO DO...

- Locate your school on the Virginia watershed map and identify the watershed in which it is located.
- Which two Hampton Roads watersheds are part of the Chesapeake Bay watershed?
- What activities do you participate in at home or at school that could have a negative impact on the Chesapeake Bay?





When it rains or when snow melts, the precipitation flows across the ground's surface and begins to make its way to a nearby tributary, wetland, river or lake, and then on to a larger body of water, such as a bay or ocean. The land that the water flows across on this journey and the waterways that receive it are called a watershed.

THE CHESAPEAKE BAY WATERSHED



SPANS PORTIONS OF
SIX STATES
& COVERS A TOTAL OF
64,000
SQUARE MILES

YOU'RE CLOSER THAN YOU THINK!

- 5 MIN WALK
- 10 MIN WALK
- 15 MIN WALK
- 20 MIN WALK



Even though you may not be able to see the Chesapeake Bay from your back yard, you're closer than you think! No matter where you live in the Chesapeake Bay watershed, it would take about 15 minutes to walk to a stream, river or body of water that flows into the Chesapeake Bay.

AND POURS

BILLIONS
(THAT'S BILLION, WITH 9 ZEROES!)
OF GALLONS OF WATER
INTO THE BAY

The watershed encompasses a diverse landscape



Is home to several thousand species of plants & animals



And over 15,000,000 people!



THE 411 ON TMDL

TMDL stands for Total Maximum Daily Load. It describes how much of a pollutant a body of water can receive while still meeting water quality standards. Think of it in terms of ice cream; you can only eat a certain amount in one day without overloading on calories. Too much of the same type of pollutant can have the same effect on a body of water, overloading its environment.

15 30,973
P
PHOSPHORUS
SOURCES INCLUDE:
Fertilizer, herbicides & wastewater

7 14,007
N
NITROGEN
SOURCES INCLUDE:
Fertilizer, septic systems & wastewater

S
SEDIMENT
SOURCES INCLUDE:
Erosion

It may surprise you to know that some naturally-occurring pollutants, such as phosphorus, nitrogen and sediment are necessary components of a healthy waterway. The trouble is that human activity, such as over-fertilizing your lawn or not picking up pet waste, greatly increases their concentration in waterways which harms aquatic life.

According to the Environmental Protection Agency (EPA), the Chesapeake Bay's water quality is poor. To help reverse this course, the EPA has set a TMDL for nitrogen, phosphorus and sediment. It is our responsibility as citizens to reduce the amount of these pollutants in our waterways.

THIS GUIDE IS PACKED WITH EASY THINGS TO DO AT HOME AND AT SCHOOL TO HELP KEEP POLLUTANTS OUT OF OUR WATERWAYS. A HEALTHY CHESAPEAKE BAY STARTS WITH YOU!

A
watershed

D
salinity

I
aquatic

L
ecosystem

C
bay

F
infiltration

J
turbidity

B
water quality

E
brackish

H
estuary

K
wetland

G
tributary

MATCH THE WORDS WITH THEIR DEFINITIONS

- The cloudiness of water
- Living in or growing on the water
- Process of water soaking into the ground
- A mixture of fresh and salt water
- An area of land that is permanently or seasonally saturated with water and contains vegetation that is adapted to its unique soil conditions
- Physical, chemical, and biological characteristics of water
- Rain that falls on this area all drains into the same body of water
- A community of living organisms and non-living elements interacting as a system
- The amount of dissolved salt in water or soil
- An inlet of water surrounded by land on three sides
- A stream or river that flows into a larger river, lake, or bay
- A partially enclosed body of water where fresh water from rivers and streams mixes with salt water from the ocean

Answers page 18

WATERSHED PUZZLER

STORMWATER POLLUTION

As rain falls from the sky,
it collects...



GUTTER RUNOFF

picks up leaves, sediment left behind
in gutters



LAWN RUNOFF

picks up soil, pet waste, fertilizer, trash



DRIVEWAY RUNOFF

picks up oil, gasoline, sediment, trash



ROAD RUNOFF

picks up oil, gasoline, sediment, trash, tar



STORM DRAIN

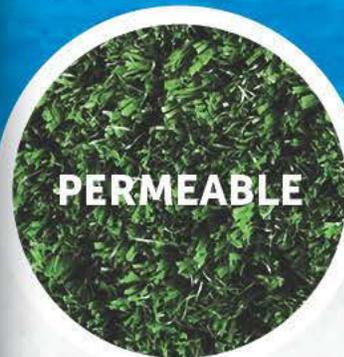
All water goes to a storm drain which leads to...



RIVER, LAKE OR OCEAN

By the time the rain makes it to the ocean, it has
picked up pollutants from hundreds of sources.

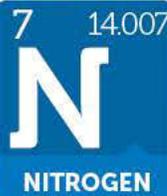
The way we use our watershed's lands affects the health of the watershed and the ecosystems within it. With the development of our communities over time, we have hardened much of the watershed's lands with driveways, rooftops, sidewalks, parking lots, and other hard surfaces. When it rains or when the snow melts, water flows over these impermeable surfaces instead of being soaked into the ground. As the water travels it picks up dirt, trash, oil, grease, fertilizers, and other pollutants – all of which get washed into the storm drain system and then directly into our waterways. Once in our waterways, the nitrogen, phosphorus, sediment, and trash threaten the waterways' health.



PERMEABLE

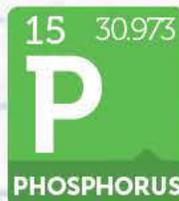


IMPERMEABLE



Nitrogen is a chemical element (N) found in all of nature. When there is too much nitrogen in a waterway, it fuels the growth of algal blooms. Algal blooms are dense clusters of algae that block sunlight from other organisms. When an alga from the bloom dies, the decay process consumes dissolved oxygen in the water, which is needed by fish, blue crabs, and other organisms.

» **Sources of nitrogen include fertilizers, household septic systems, and municipal and industrial wastewater.**



Phosphorus is a chemical element (P). Like nitrogen, when there is too much phosphorus in a waterway, it fuels the growth of algal blooms.

» **Sources of phosphorus include fertilizers, herbicides, and wastewater.**

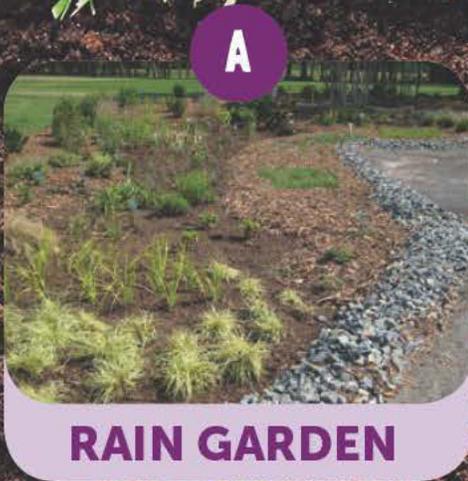


Stormwater, which may be carrying sediment from eroding land, picks up velocity as it travels over impervious surfaces. The speed of the water causes stream bank erosion, which deposits more sediment in the water. Too much sediment suspended in the water clouds the water (turbidity), harming fish, oysters, and aquatic grasses.

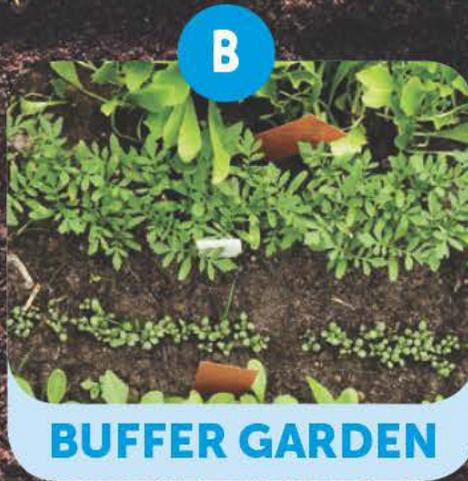
SLOW THE FLOW

Keeping pollutants off of the land is one way to help keep our waterways clean. Another way is to Slow the Flow of stormwater by using Low Impact

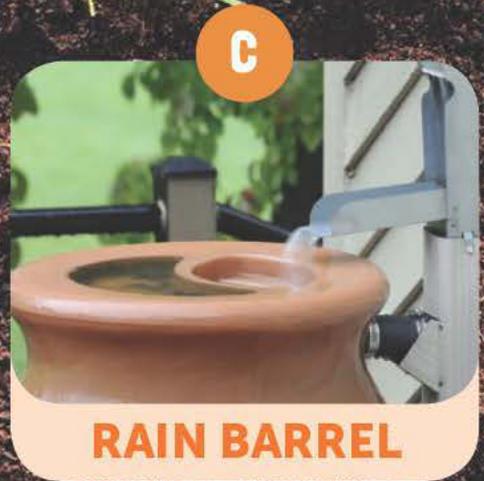
Development (LID) techniques. LID methods reduce the harm of stormwater by utilizing natural designs to keep stormwater on site. **See if you can match these simple, household Slow the Flow pictures with their descriptions.**



RAIN GARDEN



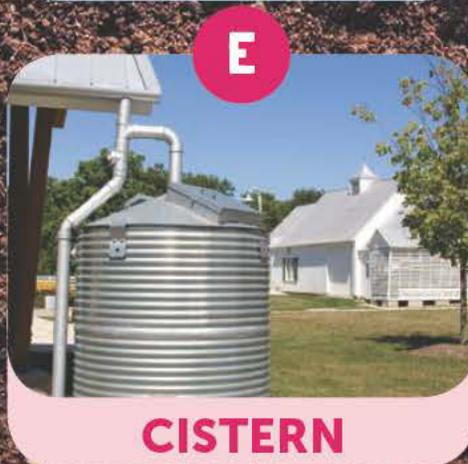
BUFFER GARDEN



RAIN BARREL



DIVERTER



CISTERN

Can you install any of these SLOW THE FLOW features at your home or school?

- 1** A small water catchment device that captures and stores rain water for later use. These containers can hold 30 - 100 gallons, depending on the size of the container. This natural rain water can later be used to water gardens or for other yard activities. It is not potable water.
- 2** A depressed garden that has porous soils and specialized, water loving plants. This type of garden holds stormwater and allows the water to infiltrate slowly into the ground instead of rushing into the stormwater system.
- 3** A flexible hose that attaches to guttering or a downspout to redirect stormwater to flow into gardens or landscaped areas instead of allowing water to move directly across a driveway or sidewalk.
- 4** A large scale water catchment device that can hold hundreds of gallons of rainwater which can be reused for flushing toilets and other non-potable household water uses, as well as watering large garden areas.
- 5** A naturally vegetated or planted area that separates a formal lawn area from a waterway. These can also be planted along curbed or ditched areas to slow storm water before it enters the stormwater catch basin or pipe.

Answers page 18

POINTING TO THE SOURCE OF POLLUTION



POINT SOURCE POLLUTION

comes from identifiable sources that can be controlled. Factories and wastewater treatment plants are two common types of point sources. The federal government regulates point source pollution. HRSD treats the wastewater generated in Hampton Roads so it can be safely discharged to area waterways. HRSD staff work tirelessly to meet the federal water quality regulations to keep our local waterways clean. *Hint: It is easy for you to point your finger at the source of point source pollution.*

The Atlantic Treatment Plant in Virginia Beach is one of nine award-winning HRSD treatment plants in Hampton Roads.

NONPOINT SOURCE POLLUTION

is pollution that travels over land as a result of runoff and whose source cannot be identified or controlled. Nonpoint source pollutants come from urban and rural areas, businesses, roads, parking lots, farms, and even forests. A few examples include roadside trash or animal droppings on the ground. When it rains, nonpoint source pollution is washed off the land and into our waterways. This is called stormwater runoff. It's difficult to point your finger to the source of nonpoint source pollution.

CHECK YOUR POLLUTION SOURCE I.Q.

Listed below are pollutants commonly found in the Chesapeake Bay. Mark a "P" on the line for point source pollution and "NP" for nonpoint source pollution.

- | | | | | | |
|----|--------------------------|------------------------------------|-----|--------------------------|-------------------------------|
| 1. | <input type="checkbox"/> | Vehicle oil on parking lot | 8. | <input type="checkbox"/> | Sediment on a parking lot |
| 2. | <input type="checkbox"/> | Fertilizer on sidewalk | 9. | <input type="checkbox"/> | Trash alongside the road |
| 3. | <input type="checkbox"/> | Soap in the street from a carwash | 10. | <input type="checkbox"/> | Cigarette butt on ground |
| 4. | <input type="checkbox"/> | Wastewater treatment plant | 11. | <input type="checkbox"/> | Leaves and branches on street |
| 5. | <input type="checkbox"/> | Grass clippings in street | 12. | <input type="checkbox"/> | Erosion |
| 6. | <input type="checkbox"/> | Duck and geese feces on the ground | 13. | <input type="checkbox"/> | Dog feces on the ground |
| 7. | <input type="checkbox"/> | Emissions from a power plant | 14. | <input type="checkbox"/> | Crop fertilizer |

Answers page 18

All About Water

QUENCH YOUR THIRST FOR INFO

Water is a valuable natural resource used for many purposes—for drinking, keeping clean, growing crops, swimming and recreation, generating power, and manufacturing goods.



In Hampton Roads, the water that flows through your taps comes from a variety of sources.

Depending on where you live, your water may come from surface sources, such as lakes and rivers, or from groundwater. In some rural areas, people get their water from private wells that bring the water to their homes from aquifers, located under the ground. But in most parts of our region, water providers, such as your city or county water utility department, collect and treat water to make it clean and safe to drink. Then it's sent to people's homes through a system of underground pipes.

Water utilities can be privately owned or part of a department within your municipal government.

The utilities charge customers for the services they provide, and the revenue pays for the electricity used to pump the water and the chemicals used to treat the water. It also is used to pay for the costs of managing the watershed, protecting water quality, and repairing or replacing the pipes, dams, treatment plants, and other infrastructure used to provide your water. If rates are too low to cover the cost of operations, water utilities sometimes have to postpone repairing or replacing leaky, worn out pipes.

A lot of water can be wasted through leaks.

It doesn't matter if the leak occurs in a water main or in your home. Even if you get your water from a private well, wasted water means wasted money. People who use well water must pay for the energy to pump the water, and everyone pays for energy to heat water.

Wasting water can cause other problems:

It leaves less for others to use.

Wells can run dry and aquifers can be depleted, especially during droughts.

Septic systems can be overloaded by too much water.

Low river, stream, and reservoir levels hurt ecosystems and reduce recreational opportunities.

When water supplies get low, water utilities need to develop new water supply resources.

YOU CAN DO YOUR PART BY USING WATER WISELY.

CHECK FOR LEAKY FAUCETS AND TOILETS (FIXING LEAKS IS A BIG WATER SAVER). TURN OFF THE FAUCET WHILE YOU'RE BRUSHING YOUR TEETH. WASH ONLY FULL LOADS OF DISHES AND LAUNDRY. TAKE SHORTER SHOWERS OR USE LESS WATER TO FILL THE BATHTUB. CAN YOU THINK OF OTHER WAYS TO SAVE WATER?

hydroplane
hydration
hydrophobia
hydroelectric
hydrosphere
hydrotherapy
hydroponics
hydraulic
hydrant
hydrology

These English words are formed from the root word "hydra." Hydra is the Greek word for water. Try to guess the meanings of the words, then look up their definitions in the dictionary. Were you right?



Meet Your Local Water Provider

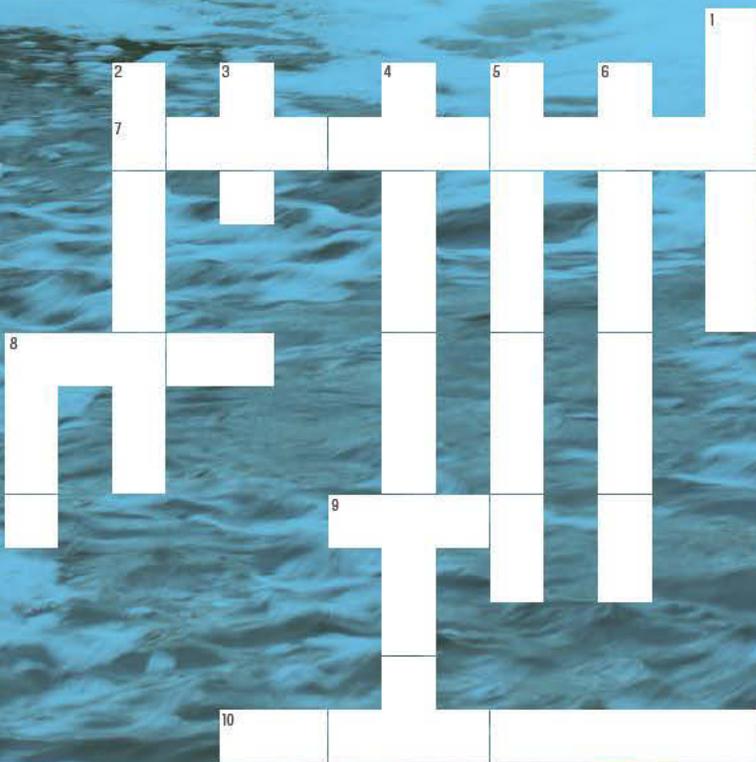
USE THE INTERNET TO FIND YOUR LOCAL WATER QUALITY REPORT TO LEARN ABOUT YOUR DRINKING WATER PROVIDER AND ANSWER THE FOLLOWING QUESTIONS:

- ❖ What is the name of your local drinking water provider?
- ❖ Do you get your water from this provider at home? At school?
- ❖ What role does a water utility play in providing for public health and safety?

- ❖ What is/are the source/sources of your drinking water? (For example, surface water or groundwater; if surface water, give the name of the river, lake, or stream.)

- ❖ What is desalination?

- ❖ What is the treatment process used by your water utility and what chemicals do they use to make the water clean and safe to drink?



ACROSS

- 7 You can help stop water shortages from spreading by practicing _____.
- 8 A _____ toilet can waste up to 20 gallons of water per day.
- 9 To save water, plant flowers and shrubs in the spring or in the _____ when the watering requirements are lower.
- 10 Install one of these at your downspout to collect stormwater that can be used to water flowers and wash your car. (2 words)

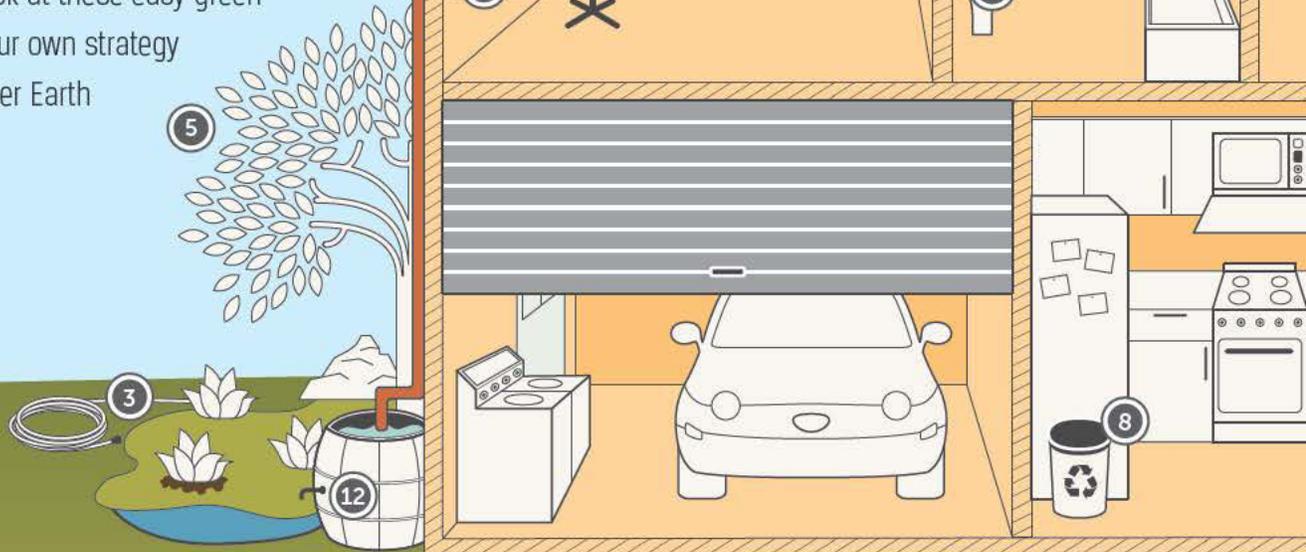
DOWN

- 1 Rain that falls on streets and carries pollutants such as fertilizers, oil, and bacteria into streams, rivers, and lakes is known as stormwater _____.
- 2 This type of precipitation is a result of atmospheric moisture mixing with sulfur and nitrogen oxides emitted from the burning of fossil fuels. (2 words)
- 3 Less than _____ percent of the Earth's water is drinkable.
- 4 Surface water (water in lakes, rivers, and streams) is naturally lost through evaporation and naturally replenished by _____.
- 5 The process by which water renews itself. (2 words)
- 6 This process removes undesirable particles from water during the treatment process.
- 8 These were hollowed out to make the first water pipes in the U.S.

Answers page 18

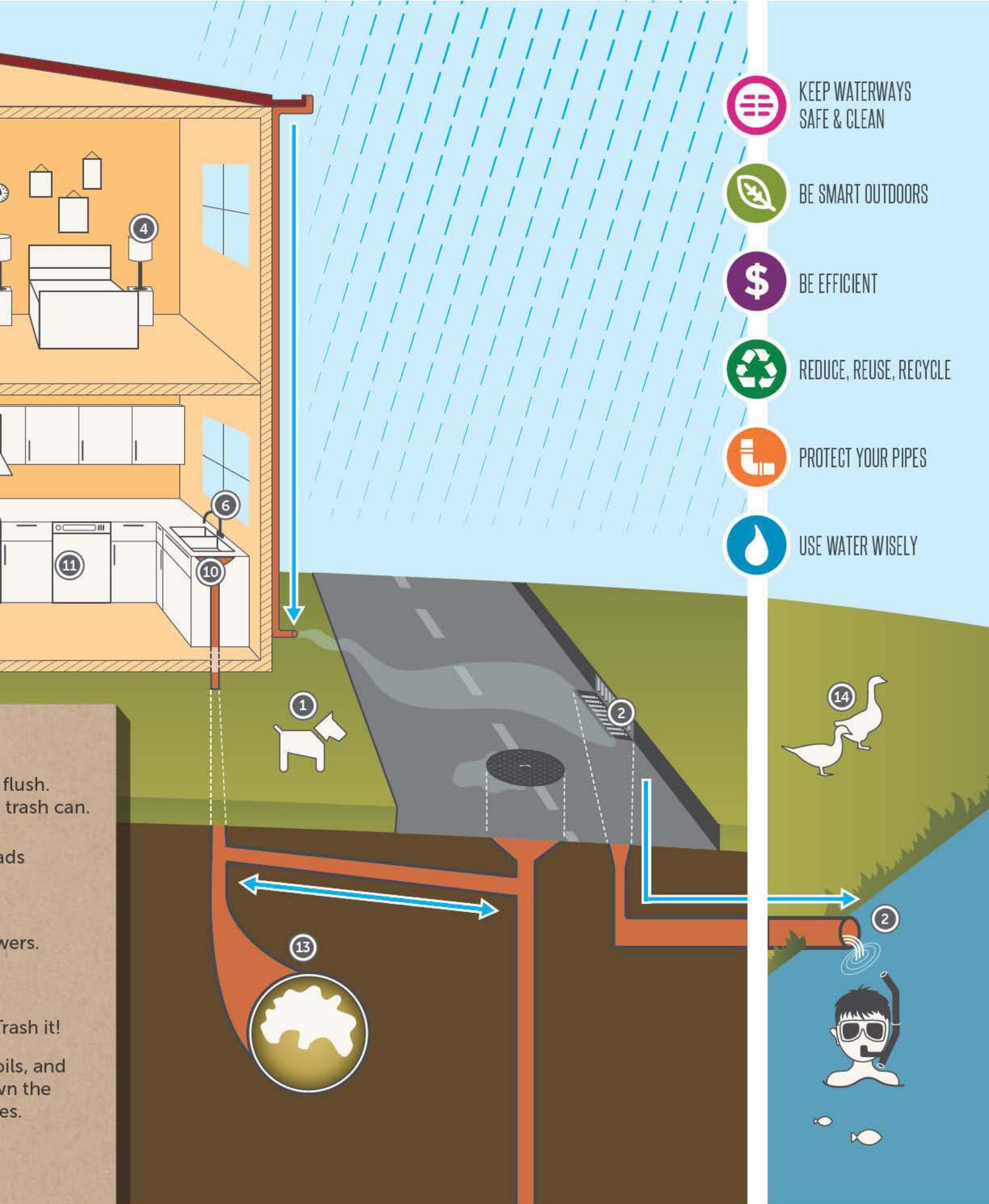
Green Living Starts Here

Sustainable living is neither time-consuming nor costly. There are simple steps you can take that are good for you, your home, your yard and your community. Take a look at these easy green tips, then map out your own strategy and get started. Mother Earth will thank you.



Fill the circles with the corresponding numbers in the diagram.

- | | | | | | |
|-----------------------|---|-----------------------|--|-----------------------|--|
| <input type="radio"/> | Turn off the faucet while brushing your teeth. | <input type="radio"/> | Switch to more efficient light bulbs. | <input type="radio"/> | Think before you flush. The toilet is not a trash can. |
| <input type="radio"/> | Only rain down the storm drain. | <input type="radio"/> | Unplug electronics when they are not in use. | <input type="radio"/> | Only wash full loads of dishes. |
| <input type="radio"/> | Reduce and recycle paper, junk mail, and telephone books. | <input type="radio"/> | Use a hose nozzle when watering your garden or washing your car. | <input type="radio"/> | Take shorter showers. |
| <input type="radio"/> | Recycle paper, plastic, glass and aluminum. | <input type="radio"/> | Drink tap water instead of bottled. | <input type="radio"/> | Pet Waste: Scoop it! Bag it! Flush it! |
| <input type="radio"/> | Catch the rain to water plants. | <input type="radio"/> | Don't feed ducks or geese. | <input type="radio"/> | Never pour fats, oils, or grease (FOG) down the drain, it clogs pipes. |
| <input type="radio"/> | Do not use the garbage disposal. | <input type="radio"/> | Choose native, drought-tolerant trees, shrubs, and plants. | | |



KEEP WATERWAYS
SAFE & CLEAN



BE SMART OUTDOORS



BE EFFICIENT



REDUCE, REUSE, RECYCLE



PROTECT YOUR PIPES



USE WATER WISELY

DO THE MATH

How Much Water Does Your Household Use?

This home water audit will give your family an idea of how much water your household uses daily. Your family will need to help you gather some of the answers for this audit. Answer only the questions that apply to your house.

This home water audit was adapted from St. Johns River Water Management District's Family Water Use Survey.

HOUSEHOLD INFORMATION

- TYPE OF DWELLING**
- Detached single family residence
 - Town house residence
 - Condominium residence
 - Apartment residence

Does your dwelling have an individual water meter?
 Yes No

_____ Number of adults living in home
 _____ Number of children living in home
 _____ Number of toilets
 _____ Number of showers

Dishwasher? Yes No
 Clothes washer? Yes No

WATER USE

- 1. SHOWERS:** How many showers does your family take a day? About how long is each one?
- 2. BATHS:** How many baths does your family take a day? A half-full tub is about 18 gallons, a full tub is about 36 gallons.
- 3. TOILETS:** How many times a day does your family flush the toilet? (The average is four flushes per person.)
- 4. TEETH:** Most family members brush their teeth at least twice a day for about two minutes each time. Leaving the faucet on while brushing your teeth wastes a lot of water. How often does you family brush?
- 5. HAND DISHWASHING:** How many times a day does your family wash dishes by hand? About how long does the water run each time?
- 6. DISHWASHER:** Answer this question only if you have a dishwasher. How many times a week does your family run the dishwasher?
- 7. LAUNDRY:** Answer only if you have a washing machine. How many loads of laundry does your family do each week?

$$\frac{\text{_____}}{\text{Number of showers}} \times \frac{\text{_____}}{\text{Number of minutes}} = \frac{\text{_____}}{\text{Total shower time per day}}$$

$$\frac{\text{_____}}{\text{Number in family}} \times \frac{\text{_____}}{\text{Number of baths}} = \frac{\text{_____}}{\text{Total of baths per day}}$$

$$\frac{\text{_____}}{\text{Number in family}} \times \frac{\text{_____}}{\text{Flushes per day}} = \frac{\text{_____}}{\text{Total flushes per day}}$$

$$\frac{\text{_____}}{\text{Number in family}} \times \frac{\text{_____}}{\text{Number of brushes per day}} = \frac{\text{_____}}{\text{Total number of brushes per day}}$$

$$\frac{\text{_____}}{\text{Total number of brushes per day}} \times \frac{2 \text{ MINUTES}}{\text{EACH BRUSH}} = \frac{\text{_____}}{\text{Total minutes of brushes per day}}$$

$$\frac{\text{_____}}{\text{Washes per day}} \times \frac{\text{_____}}{\text{Minutes water runs}} = \frac{\text{_____}}{\text{Total washing time per day}}$$

$$\frac{\text{_____}}{\text{Uses per week}} \div \frac{7 \text{ DAYS}}{\text{PER WEEK}} = \frac{\text{_____}}{\text{Average loads per day}}$$

$$\frac{\text{_____}}{\text{Loads per week}} \div \frac{7 \text{ DAYS}}{\text{PER WEEK}} = \frac{\text{_____}}{\text{Average loads per day}}$$



8. OTHER INDOOR WATER USES: Your family also uses water indoors in other ways. List some of these ways.

9. LAWN WATERING: How many times a week does your family water the lawn? About how many minutes do you water each time?

$$\text{Watering days per week} \times \text{Watering minutes per day} = \text{Total minutes per week}$$

$$\text{Total watering minutes per week} \div 7 \text{ DAYS PER WEEK} = \text{Average watering time per day}$$

10. OTHER OUTDOOR WATER USES: Your family may use water outdoors in other ways. List some of the ways.

FIGURE

YOUR FAMILY'S TOTAL DAILY USE

Put your DO THE MATH answers in column C. Multiply columns B and C and put your answers in column D. This is the amount of water your family uses daily for each activity. Next, add column D to reveal the estimate of the total gallons of water your family uses daily.

| A | B | C | D |
|------------------------------|---------------------------|-------------------------|-------------------------|
| Water Use Activity | Gallons per Minute or Use | Minutes or Uses per Day | Total Water Use Per Day |
| 1. SHOWERS | 5 gallons per minute | X | = |
| 2. BATHS | 36 gallons per use | X | = |
| 3. TOILETS | 5 gallons per flush | X | = |
| 4. TEETH | 3 gallons per minute | X | = |
| 5. HAND DISHWASHING | 3 gallons per minute | X | = |
| 6. DISHWASHER | 30 gallons per use | X | = |
| 7. LAUNDRY | 48 gallons per use | X | = |
| 8. OTHER INDOOR USE | Put answer from above | | = |
| 9. LAWN WATERING | 10 gallons per minute | X | = |
| 10. OTHER OUTDOOR WATER USES | Put answer from above | | = |



TOTAL FAMILY USE PER DAY

GALLONS

MAKING THE RIGHT CHOICES

HOW MUCH WATER IS USED FOR EACH?

 = 1 GALLON DIRECT USE
the water you actually use

 = 1 GALLON VIRTUAL USE
the water that helped make the things you use

 = 100 GALLONS VIRTUAL USE



Shower 10 minutes
3.8 gallons/minutes



Low-flow shower 10 minutes
2.3 gallons/minute



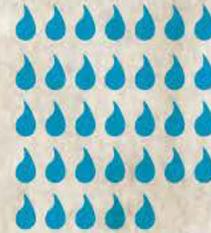
Apple
18 gallons



Orange
13 gallons



Soda 14 oz. bottle
33 gallons



Tap Water 16 oz. glass
.125 gallons



Bag of Chips
49 gallons



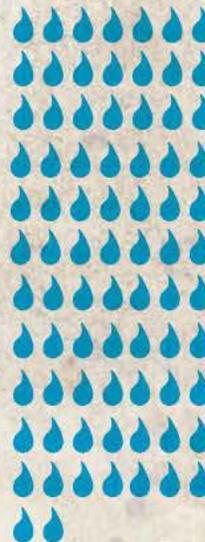
Slice of Bread
11 gallons



1 lb. of Beef
1,500 gallons



Cheese Pizza
79 gallons

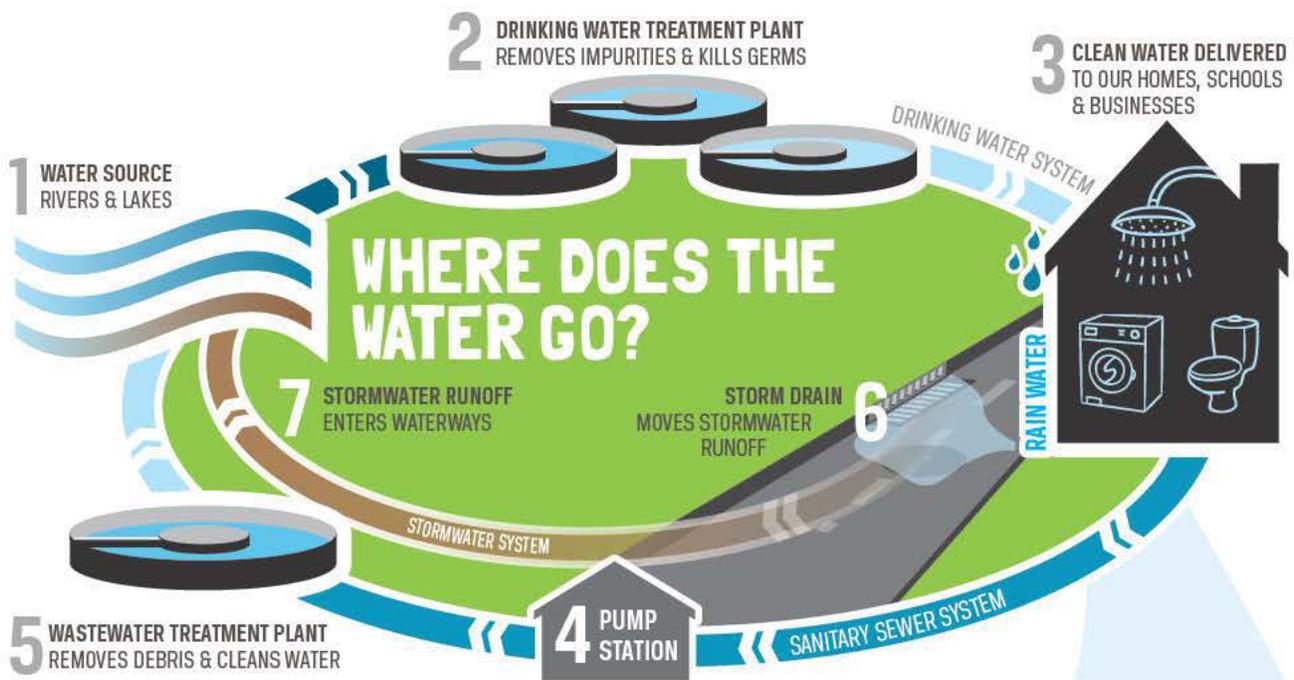


Hamburger
634 gallons



Salad
31 gallons





You've flushed a toilet, let the faucet flow and watched water rush down the street during a rainstorm. But do you really understand where the water goes? **In the Hampton Roads region, there are three very important pipe systems that are part of our regional infrastructure.** The drinking water system brings clean water to our homes, while the sanitary sewer system and the stormwater system are two separate systems that take water away from our homes and streets.

1 Most of the drinking water in Hampton Roads comes from rivers and lakes. **2** This surface water is pumped through huge pipes to a water treatment plant, where impurities are removed and germs are killed. Some people in our region use water that is pumped from deep underground. Unlike surface water, groundwater usually isn't treated to remove impurities, but it is disinfected to kill germs. **3** Once the water is clean and safe to drink, it is pumped through a network of pipes and storage facilities into our homes.

When water leaves our individual homes through sinks, showers, and toilets, it flows through a single small pipe which connects to a larger main pipe in the street. **4** The wastewater is carried through the sanitary sewer system by gravity to a pump station. **5** The pump station collects the wastewater and pushes it by force further down the pipes to the wastewater treatment plant. At the treatment plant, debris is removed and the water is cleaned to remove germs and bacteria before it is released back into our waterways.

6 Rainwater runoff from rooftops and gutters is directed to the stormwater system. The drain usually looks like a small opening in the curb or a grate in the pavement. **7** Unlike the sanitary sewer system, water that enters the stormwater system is never treated and flows directly to our local waterways. **This is why it is so important not to litter.** Cigarette butts, trash, dirt and grass clippings are all carried by the rain into the storm drain and out to rivers, lakes, or the ocean. This pollution is harmful to our waterways and local wildlife.

EACH SYSTEM HAS A SEPARATE AND SPECIFIC PURPOSE FROM THE OTHERS, AND IT IS IMPORTANT TO UNDERSTAND WHERE THE WATER GOES.

For the following questions, use the information to the left to explain how much water is used to make the items. Explain which requires more water. Then turn your explanation into a ratio.

Example: How much water is used to produce an apple versus an orange?

1 apple = 18 gallons of water & 1 orange = 13 gallons of water

It takes 18 gallons of water to produce an apple and 13 gallons of water to produce an orange. It takes more water to produce an apple than an orange. The ratio of water use is 18:13.

1 How much water is used to produce a hamburger and chips vs. a cheese pizza?

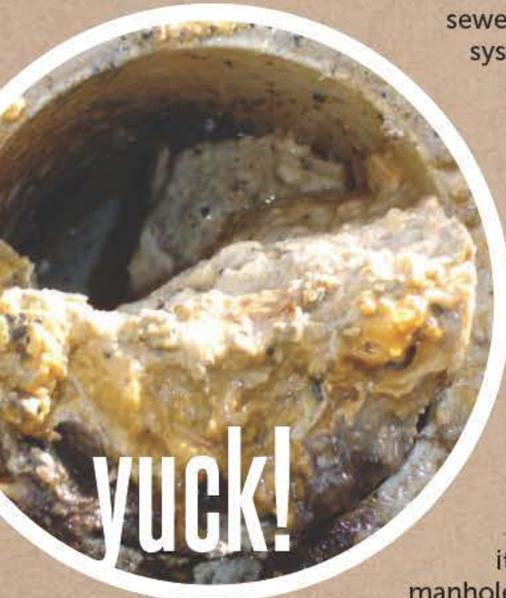
2 How much water is used to produce a 14 oz. bottle of soda vs. a 16 oz. glass of tap water?

3 Create your own question and test a classmate!

Fat-free Drains AS EASY AS 1, 2, 3



The sanitary sewer system and stormwater system are efficient ways to collect and contain two different types of water. Water in the sanitary sewer system is treated, while water in the stormwater system is not. However, sometimes a sanitary sewer overflow does occur, in which case untreated wastewater from the sanitary sewer system enters the stormwater system. These occurrences can be prevented, but it is important to understand the causes and consequences.



Grease is the most common cause of sanitary sewer overflows. When people cook and pour fats, oils, and grease (also known as FOG) down the drain, the FOG turns from a liquid to a solid as it cools, clogging the pipe. When the water can't make it past the greasy mess, the pipes back up. Sometimes it is so powerful it can push up a manhole and flow into the street. Once wastewater is on the street, it acts just like rainwater and flows to the storm drain.

Since stormwater never goes to a treatment plant, raw sewage from a sanitary sewer overflow can contaminate our waterways. Depending on the level of contamination, beaches may need to be closed to protect human health, or fish can die from ingesting the dirty water.

Here are three easy ways to keep your drains fat-free:

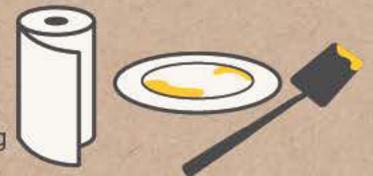
Can the Grease

1 Pour used cooking grease into an empty, heat-safe container, such as a soup can, and 2 store it in the freezer. Once solidified, 3 toss the can into the garbage.



Scrape the Plate

Wipe all pots, pans, dishes and cooking utensils with a paper towel prior to washing to absorb the grease.



Catch the Scraps

Eliminate using the garbage disposal. Catch food scraps in your sink with a basket or strainer and toss them into the trash.



Don't let your sanitary sewer system back up. Once it's in the stormwater system, it's too late!

Conservation Professionals

Meet **Daniel A. Baxter**, Business Recycling Coordinator, City of Newport News Public Works Resource Recovery Division

Tell us about your job.

My job involves promoting recycling, waste reduction, and resource management among local businesses; overseeing recycling and resource recovery programs for municipal buildings and schools; coordinating electronics recycling for municipal operations and schools; providing education and outreach to businesses and residents; and auditing the household hazardous waste, e-cycling, and recycling contractors with whom we work.

Why did you decide to go into this field?

I have been involved and interested in conservation since I was a child. After 20-plus years in the Navy, I returned to college and pursued degrees in environmental geology, oceanography, and land use management.

What do you enjoy most about your job?

I enjoy meeting new people and working with innovators to develop and evaluate new solutions to challenges.

What did you study in high school and college that helped prepare you for this line of work?

Math (especially applied statistics up to advanced trigonometry), science, geography, English, civics, and foreign languages.

What advice do you have for students about recycling?

Recycling is a multifaceted discipline. It is constantly changing to meet new challenges. So, I'd advise you to be willing to learn and work with others to develop new innovations in recycling that will make a difference.



resource Management Matters

Every day people make hundreds of choices regarding resource use: ride in a car or ride a bike; recycle or throw away your soda can; turn off the water or leave it running while you brush your teeth.

All of these decisions have costs and benefits. Renewable resources such as air, water, and trees are able to replenish themselves over time, yet it is important to balance their use with how quickly the resources can be replenished.

Nonrenewable resources such as coal, oil, natural gas, and nuclear power cannot be reproduced. When these are gone, the resources are gone for good.

TEST YOUR RECYCLING IQ

1. A soda can that is recycled today could be back in your house as a new can in just two months.
True or False
2. Aluminum can be recycled up to four times.
True or False
3. The average American generates four pounds of trash a day.
True or False
4. Glass can be recycled forever.
True or False
5. It takes 50 years for aluminum cans to decompose in a landfill.
True or False
6. Plastic bags and product wraps can be recycled at most grocery stores.
True or False
7. Electronics can be placed in the curbside recycling bin.
True or False
8. Recycling conserves resources and saves energy.
True or False

Answers page 18

TO RECYCLE, OR NOT TO RECYCLE?



Recycling plays an important role in responsible resource management.

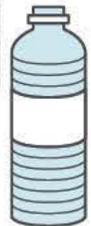
Pitch in to make a difference by always recycling the following items:

FOR THE RECYCLING BIN

→ Aluminum, steel and tin cans



→ Clean plastic bottles and jugs with neck or pour spouts



→ Glass bottles and jars

Mixed paper (office paper, paper bags, magazines, newspaper and inserts, telephone books, junk mail)

→



→ Empty food boxes and cardboard



FOR SPECIAL RECYCLING

→ Plastic bags – Recycled at most grocery stores. Visit abagslife.com to find a store near you.



→ Compact fluorescent light bulbs – Recycled at a household hazardous waste event or facility. askHRgreen.org/household-hazardous-waste



→ Electronics – Recycled at most electronic stores and at electronic recycling events. askHRgreen.org/electronics-recycling



→ Rechargeable batteries – Recycled at household hazardous waste events and most electronic stores.



askHRgreen.org/household-hazardous-waste

CLIP AND SAVE!

GLOSSARY

Acid rain: Rain or any other form of precipitation that is unusually acidic due to emissions of sulfur dioxide and nitrogen oxides.

Algal Bloom: A dense cluster of algae often caused by excess nitrogen and phosphorus. As it grows it blocks sunlight from reaching organisms that live beneath it and it consumes dissolved oxygen that is needed by fish and crabs.

Aquatic: Living or growing in water.

Aquifer: An underground body of porous rock, sand, or gravel through which water can easily move.

Bay: An inlet of water surrounded by land on three sides.

Brackish: A mixture of fresh and salt water.

Desalination: The process of removing salt from water so it can be used for drinking or irrigation.

Ecosystem: A community of living organisms and non-living elements interacting as a system.

Estuary: A partially enclosed body of water where fresh water from rivers and streams mixes with salt water from the ocean.

Herbicide: A substance for killing plants, especially weeds.

Impermeable: Not able to let water or liquid pass through.

Impervious: Not able to let anything through.

Infiltration: The process of water soaking into the ground.

Infrastructure: The system of public works such as roads, drinking water pipes, stormwater ditches, ponds and pipes, and wastewater pipes.

Municipal: Referring to a town, city or its local government.

Porous: Able to let water or liquid pass through.

Potable: Fit to drink; drinkable.

Revenue: The income of a government from taxation, user fees, customs, or other sources.

Runoff: The water that flows off from the land and into a waterway.

Salinity: The amount of dissolved salt in water or soil.

Septic system: A small scale treatment system that collects and treats wastewater. These systems require periodic pumping and maintenance.

Tributary: A stream or river that flows into a larger river, lake, or bay.

Turbidity: The cloudiness of water.

Velocity: The rate of speed with which something happens.

Wastewater: Water that has been used in washing, flushing, or manufacturing.

Watershed: Rain that falls on this area all drains into the same body of water.

Water main: A principal pipe that distributes drinking water.

Water quality: The physical, chemical, and biological characteristics of water.

Wetland: An area of land that is permanently or seasonally saturated with water and contains vegetation that is adapted to its unique soil conditions.



EDUCATORS, TAKE NOTE.

Did you know that askHRgreen.org offers environmental education mini-grants of up to \$500? Intended to provide funding for environmentally-themed projects, the mini-grants may be used to fund a portion of, or an entire project.

All Hampton Roads school teachers (K-12), youth leaders, or organizations working with youth are eligible to apply. Projects must be specifically tied to suggested environmental topics, which can be found at askhrgreen.org/hr-green-mini-grant-application-package, along with an online application and details.

There is no deadline for applications, which are accepted year round as long as funding is available.

PROTECTING THE ENVIRONMENT IS EVERYONE'S RESPONSIBILITY.

Every decision you make and every action you take makes a difference!

- Scoop, bag, and trash your dog's waste
- Recycle paper, plastic, glass, and aluminum
- Bring reusable bags to the grocery store
- Turn off the lights when leaving a room
- Choose tap water instead of bottled water
- Turn off the water while brushing your teeth
- Let only rain go down the storm drain
- Plant a tree
- Read more and watch less TV
- Pick up any trash you or others may have dropped

GOOD TO DO



askHRgreen.org

askHRgreen.org is your go-to resource for all things green in Hampton Roads — from recycling tips and pointers for keeping local waterways clean to water-saving ideas and simple steps to make local living easy on the environment.

askHRgreen.org is administered through the Hampton Roads Planning District Commission (HRPDC) and powered by the following members: the cities of Chesapeake, Franklin, Hampton, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Virginia Beach, and Williamsburg; the counties of Gloucester, Isle of Wight, James City, Southampton, Surry and York; and HRSD.



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GREEN LIVING

SPRING 2013

YOUR GUIDE TO EVERYTHING GREEN IN HAMPTON ROADS

GOOD to KNOW



we mean business
ABOUT RECYCLING!



Home Sweet Fragile Home



meet the GARDEN GURU



follow the **WaterTrail**



kissing my garbage
disposal good-bye

askHRgreen.org

f / askHRgreen

LIKE US ON FACEBOOK FOR A CHANCE TO
WIN THIS ESSENTIAL SPRING GOODIE BAG



GRILL YOUR TURE PRO

Is your lawn care company doing things the right way? If yes, your lawn is in good hands and your money is well spent. If no, your lawn suffers – and so do our waterways.

Good to Know

Excess lawn fertilizer ends up in our local waterways where it causes harm by speeding up the growth of algae blooms. These blooms cause our waterways to become discolored, smelly and undesirable for swimming and boating. Excess fertilizing also wastes your money!

Good to Do

Ask your lawn care provider these five questions from our friends at the Elizabeth River Project to ensure your yard isn't harming local waterways.

1 What kind of fertilizer do you apply?

What proportion of this contains slow-release nitrogen?

Ideally, at least 50% should be a slow-release type fertilizer. Organic fertilizers like compost and kelp are preferred. Fast-release fertilizers promote growth of grass blades at the expense of root development, which weakens your lawn. Plus, the nutrients leach away before they can be used, then wash into our waterways where they contribute to harmful algae blooms.

2 How do you control your rate of fertilizer application?

Your lawn care provider should use a formula to calculate the amount needed based on your yard's acreage and fertilizer application rates. If they don't, they may be over-fertilizing – which wastes money and harms our waterways.

3 How do your recommendations reflect the specific conditions of my lawn?

To avoid over-fertilizing and over-watering, your lawn care company should first conduct a soil test and diagnose the specific needs of your lawn before developing a plan.

4 Do I have warm or cool season grass? What are the differences in terms of water and fertilizer needs?

If your company can't tell you, they're probably not adjusting their fertilizing and watering plan to meet the specific needs of your yard.

5 What "green" practices do you follow when mowing?

They should leave grass clippings on the lawn to compost as natural fertilizer – and they get extra points if they use an electric mower. Gas mowers are a surprisingly large source of air and water pollution. It's also important to keep mower blades sharp.



This project received funding from the Environmental Protection Agency's Chesapeake Bay Program through the Department of Conservation and Recreation (DCR), via grant number BAY-2012-06-PT.

askHRgreen.org
for more questions to ask your lawn care company
– and lots of other great information

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is there any other Way to Live?

Welcome to the second annual edition of **Green Living**, your guide to everything green in Hampton Roads, brought to you by **askHRgreen.org**! Encouraging people to find their "inner green" is the premise behind **askHRgreen.org**, a region-wide public awareness campaign powered by the 16 cities and counties of Hampton Roads and administered through the Hampton Roads Planning District Commission. Since launching this initiative in 2011, we've been hard at work reaching out to Southeastern Virginia residents with simple steps they can take to make our region more sustainable. In this special section, we're digging deeper into green issues that impact the region. Explore our watershed and see why the time to improve our region's water quality is at hand; go beyond the big blue bin and examine the business of recycling; learn tips for keeping a "green" yard from a true garden guru; follow the path of water through our vast (and often forgotten) infrastructure; and learn why it's time to "break up" with a common household appliance. We hope you enjoy *Green Living*, learn something new and share it with friends.

All the Best—

Julia B. Hillegass

askHRgreen.org Team Leader

Public Information and Community Affairs Administrator,

Hampton Roads Planning District Commission

jhillegass@hrpdca.gov



GOODtoKNOW

Keep Hampton Roads Beautiful This Spring

Lend a hand in keeping our communities beautiful by volunteering for a Great American Cleanup™ project this spring. From school yard beautification to litter pickups and recycling events, there will be something for everyone. Visit **askHRgreen.org** to find a volunteer project in your community.



Dig in with Green Learning

Do you know where the water goes when it rains in Hampton Roads? Or the name of the watershed in which you reside? *Green Learning* is a free educational guide designed to teach the region's sixth grade students these important concepts and about how their actions affect the environment in positive and negative ways. Download this fun guide at **www.askHRgreen.org/green-learning**.

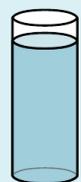


Put the Lid on Messy Sewer Backups

You can help keep your home's pipes free and clear of blockages if you simply "Can the Grease." Pour used cooking grease into an empty, heat-safe container, such as a soup can, and store it in the freezer. Once solidified, toss the can into the garbage. Email us at **HRgreen@hrpdca.gov** to request a FREE grease can lid to prevent spills.



CHOOSE TAP over bottled water



YOU CAN FILL
1,500
GLASSES OF TAP WATER

=



FOR THE PRICE OF
1 SINGLE
PLASTIC BOTTLE

Fill 'er up! Grab a reusable bottle (or two) and take your tap to go! You'll be doing both the environment and your wallet some good!

Free water bottle refills on the go.

TapIt™ gives you free access to clean water on the go through a network of participating café and restaurant owners around Hampton Roads. Simply take your reusable bottle into any TapIt partner café and fill it up with clean, safe tap water for free! For partner locations visit **tapitwater.com/hrva**.

GOODtoKNOW



BE WATER-WISE AT HOME AND IN YOUR YARD

MAKE A PLAN

Group plants with similar watering needs together. Excess irrigation wastes valuable water and promotes disease and weed infestation.

PLANT MORE PLANTS

Choose plants native to our area. They require less water and fertilizer and have fewer pest problems than exotic or non-native plants.

MULCH, MULCH & MULCH

Reduce areas of thirsty turf grass by adding more mulched beds. Mulch not only helps plants retain moisture, but helps minimize weeds and keeps plants cool!

WATER WISELY

Water at the right time of day. Watering when the sun is low, winds are calm and temperatures are cooler minimizes evaporation by as much as 30 percent.

To learn more about tap water & wise water use, just **askHRgreen.org**



We Mean Business about Recycling!

You know recycling is good for the environment; it reduces energy consumption, decreases pollution and saves natural resources. But did you know recycling also is good for our economy? The recycling industry creates local jobs, saves localities money through reduced disposal fees, produces economic development opportunities and generates tax revenue.

When you recycle, you're supporting regional manufacturers that depend on recycled plastic, glass, metal and paper to make new consumer goods such as outdoor decking, park benches, glass containers and paper. The Southeast Recycling Development Council (SERDC) is a non-profit

organization represented by 11 southern states, including Virginia. In a 2010 study, the group determined that Virginia is home to more than 15 manufacturers that rely on the materials you put into the recycling bins. These companies generate more than \$3.6 billion in yearly sales and employ more than 3,700 Virginians directly in the manufacture of recycled content products.

And that's just a sliver of the state's whole recycling pie. The more cans, paper, plastics and glass that are put in the recycling bin instead of the trash, the more the region's economy will benefit.

"If Virginia recycled just 10 percent more materials each year, the potential economic impact would equate to 1,600 new jobs, an additional \$75 million in annual personal income and \$3 million in annual state tax revenue," said SERDC Executive Director Will Sagar.

Future growth in the recycling industry depends on supply assurance, and we all play a critical role. Remember, it's not just about putting things in the recycling bin; it's about putting the proper materials in the bin. Support our local economy by recycling smart!

TO RECYCLE, OR NOT TO RECYCLE?



Recycling plays an important role in responsible resource management. Pitch in to make a difference by always recycling the following items:

FOR THE RECYCLING BIN

- Aluminum, steel and tin cans
- Clean plastic bottles and jugs with neck or pour spouts
- Glass bottles and jars
- Mixed paper (office paper, paper bags, magazines, newspaper and inserts, telephone books, junk mail)
- Empty food boxes and cardboard



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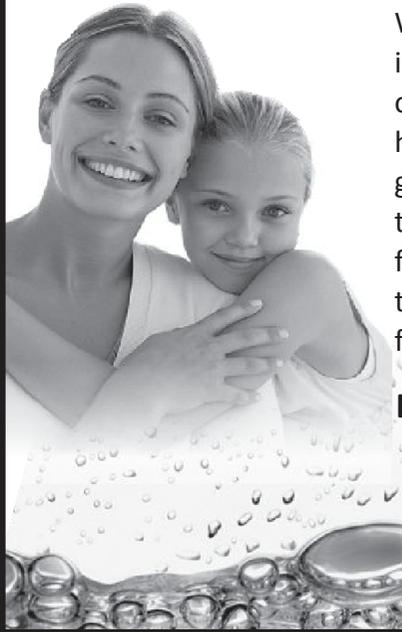
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what to do with your old electronics



Proper electronics recycling is paramount. **Electronics contain hazardous waste** such as lead, mercury and cadmium. These can be released into the air, soil and water and **cause health and environmental risks.**

- 1 Don't throw them in the trash!
- 2 Donate working electronics.
- 3 Take broken electronics to your locality's program or electronic store with an **e-cycle program.**

what to do with your used PLASTIC BAGS

GOOD to KNOW

When plastic bags and film are recycled, the plastic is melted and then reshaped for a number of different reuses including lumber or little pellets which are then used for other plastic products.



- 1 Don't throw them in the trash!
- 2 Reuse them.
- 3 Recycle them (at most grocery stores).

Don't forget you can recycle plastic shopping bags, dry cleaning bags, newspaper bags, plastic wrap from toilet paper and paper towels, plastic bags from your vegetables and more!

what to do with your HOUSEHOLD HAZARDOUS WASTE

Household hazardous waste (HHW), such as paint, chemicals, CFL lightbulbs, pesticides, etc., **cannot be poured down the drain, on the ground, into a storm drain or put out with the trash.** Dispose of these according to their type.

- 1 Don't throw them in the trash!
- 2 Share or donate leftovers.
- 3 Bring unused HHW materials to a collection site or event.



To learn more about how, what and where to recycle, just askHRgreen.org  /askHRgreen  /HRgreen

transform your yard into an EcoAvenger!

Longer days and warmer temps mean more time in the garden. At last! Before digging in to the same-old/same-old lawn and garden routines, askHRgreen.org challenges you to transform your landscape into an eco-avenger by putting every flower, tree, shrub and blade of grass to work. After all, your yard is not only an expression of you and your family, it's also one of the greatest ways to protect the health of our environment by filtering out stormwater pollution before it enters our local waterways. Come on, show off your "green thumb" this spring by implementing a few (or all!) of the tips below. For more info, visit askHRgreen.org/your-yard.

1 Put your soil to the test.

Before making any lawn care decisions, test your soil to see what nutrients, if any, your lawn and garden are lacking. The results will include a nitrogen recommendation, which is typically higher

than most Hampton Roads lawns need. Gardeners here can often use much less nitrogen to get successful results. If you are mulching your grass clippings back onto your lawn, you shouldn't need to add nitrogen at all.

2 Know your grass.

Warm season grass (preferred for Hampton Roads), such as zoysia, St. Augustine, centipede or Bermuda, should be seeded and fertilized (if needed) in early spring. Cool season grass (not preferred for Hampton Roads), such as fescue, bluegrass or rye, should be seeded in the late summer and fertilized (if needed) in the fall.

3 Aerate your lawn.

Are you aware of the life that lives beneath your lawn? Aerating increases water and oxygen movement, improves rooting, enhances infiltration, increases the activity of soil microorganisms that decompose thatch and helps prevent fertilizer and pesticide run-off. Warm season grass should be aerated in June or July, and cool season grasses should be aerated in August or September.

4 Mow right.

Only one-third of the height of your grass should be removed with each mowing, and always mow with a sharp blade. Leave grass clippings on the lawn to return nitrogen to the soil, naturally.

5 Use natural weed and pest management techniques.

Pull weeds by hand or spray with a vinegar and water solution. Choose repellent plants such as marigolds, which will ward off squash bug, thrips, tomato hornworm and whitefly.

6 Use compost.

Whether you produce your own or purchase compost, adding it to your soil will improve both soil structure and health. That's because compost contains humus, an organic material which assists the soil in holding nutrients, reduces the need for chemical fertilizers, helps prevent nitrogen from leaching into the groundwater and keeps soil erosion at bay.



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TO LEARN ABOUT ALL THINGS **GOOD FOR YOU**

What do I do with my **OLD ELECTRONICS?**

Why shouldn't I pour **KITCHEN GREASE** down the sink?

WHAT DO I RECYCLE?

How much money can I save by **DRINKING TAP WATER?**

How can a **SOIL TEST** save me money?

Where does **STORMWATER** run off to, anyway?

What's better for **FOOD SCRAPS:** the garbage disposal or the trash?

to get answers to these important questions, AND MORE, just **askHRgreen.org**

Spring Cleaning

in the Kitchen

Families and friends love to gather in the kitchen. That's where we create delicious meals, chat about the day's events, grab a snack and tidy up before we call it a night. It's also one place where small changes can have a big impact on the environment and your wallet. This year, try incorporating some of these spring greening tips into your spring cleaning routine.



When cleaning up after a meal, remember to keep the fats, oils and grease out of the drain to avoid clogs that could result in a costly visit from the plumber.

- Locate an empty, heat-safe container, like a soup can. When the cooking oils have cooled, scrape these into your container, cover it securely, freeze it and throw the hardened oils away with the trash.
- Skip the garbage disposal and use a sink strainer to catch food scraps. Scrape your leftover food scraps into the trash or compost bin and wipe plates and cookware with an absorbent napkin or paper towel before washing by hand or loading into the dishwasher.
- Oil-based foods that should never go down the drain include lards/shortening, butter/margarine, dairy products, batter, icing, salad dressings and sauces.

Keeping the kitchen clean is a constant battle. Arm yourself with the tools needed to get the job done without paying a fortune for harsh chemicals.

- Baking soda and water will do the trick when it comes to cleaning your kitchen tile or countertops. Need a tougher abrasive? Sprinkle on kosher salt and scrub with a wet cloth or sponge.
- For stains, mildew or grease streaks, simply spray with lemon juice or vinegar, let it sit for a few minutes, then scrub with a brush.
- Save water and energy by only doing full loads in the dishwasher and washing machine. If you're in the market for new appliances, always look for the Energy Star and WaterSense labels.

Cleaning out the pantry can be a daunting task; once you've cleaned it out, remember these tips when it's time to fill'er up:

Can the Grease

1 Pour used cooking grease into an empty, heat-safe container, such as a soup can, and 2 store it in the freezer. Once solidified, 3 toss the can into the garbage.



Scrape the Plate

Wipe all pots, pans, dishes and cooking utensils with a paper towel prior to washing to absorb the grease.



Catch the Scraps

Eliminate using the garbage disposal. Catch food scraps in your sink with a basket or strainer and toss them into the trash.



- Buying in bulk minimizes excess packaging and it's cost-effective too. Whenever possible, try to find items packaged in recycled/recyclable containers.
- You can help support our community by buying fresh from local farmers right here in Hampton Roads whenever possible.
- Quit the bottled water habit. In addition to reducing your carbon footprint, replacing expensive bottled water with clean, safe, tap water is good for your wallet, too!

For more information on ways to keep your kitchen and the rest of your home clean and green, visit askHRgreen.org.



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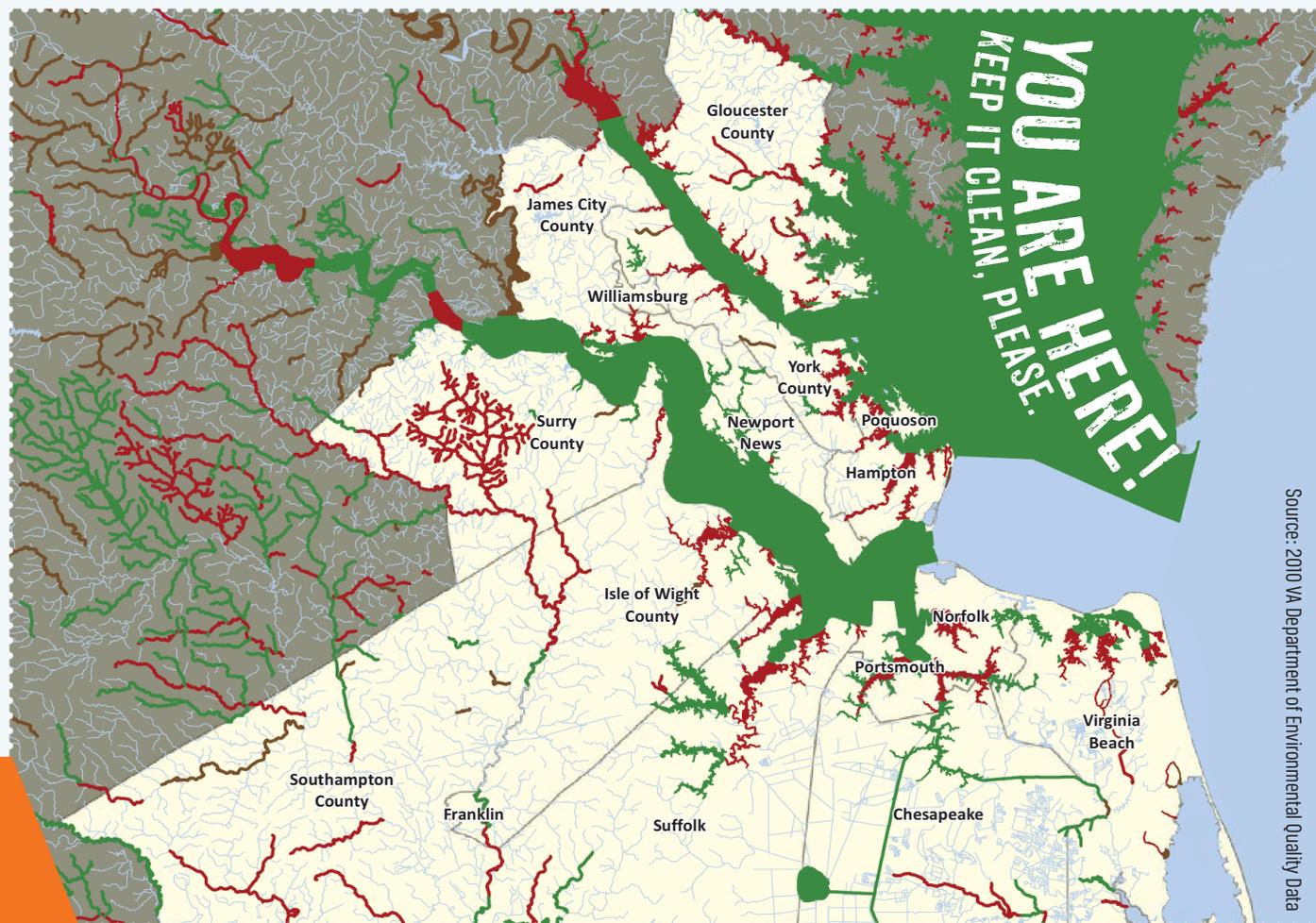
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HOME SWEET FRAGILE HOME

THE TIME TO CLEAN
UP OUR WATERWAYS
IS NOW!



Source: 2010 VA Department of Environmental Quality Data

- Nutrient Impairment
- Bacteria Impairment
- Nutrient and Bacteria Impairment
- Not Impaired for Nutrients or Bacteria

OUR IMPAIRED WATERWAYS

MAJOR OFFENDING POLLUTANTS

PHOSPHOROUS NITROGEN



AGRICULTURAL OPERATIONS

from fertilizer, feed lots, animal waste



WASTEWATER FACILITIES

from treatment and discharge



AIR POLLUTION

from power plants and vehicle exhaust



URBAN AND SUBURBAN RUNOFF

from roadways, development, residential/
commercial lawn fertilizers



SEPTIC SYSTEMS

resulting from backups and failures

BACTERIA



SEWAGE DISCHARGE FROM BOATERS



PET & WILDLIFE WASTE



SEPTIC SYSTEMS



SANITARY SEWER OVERFLOWS

Hampton Roads is a region defined by water, from the creeks and tributaries that flow into the Chesapeake Bay, to the recreational and culinary options these watery trails provide. We're known for our beautiful beaches, on-water fun and fresh-caught seafood. But did you know that many of our region's waterways have swimming and shellfish harvesting restrictions because they contain unhealthy levels of bacteria? Or that these waterways, including the Chesapeake Bay, have insufficient levels of dissolved oxygen which cause harm to our aquatic life?

The situation is serious and the time to act is now. Localities are working hard to improve water quality by upgrading wastewater and stormwater infrastructure and installing natural systems to slow the flow of rainwater and filter out pollutants. HRSD (Hampton Roads Sanitation District) is doing its part by upgrading wastewater treatment plants to reduce the amount of nutrients in their discharges to our local waterways. **Are we residents, though, doing enough to protect our unique and vulnerable landscape?**

EVERY ACTION WE TAKE HAS AN IMPACT
ON OUR HOME SWEET HOME

GOOD to DO

STORMWATER POLLUTION

AS RAIN FALLS FROM THE SKY, IT COLLECTS...

AIR POLLUTION

from power plants and vehicle exhaust

GUTTER RUNOFF

picks up leaves, sediment left behind in gutters

LAWN RUNOFF

picks up soil, pet waste, fertilizer, trash

DRIVEWAY RUNOFF

picks up oil, gasoline, sediment, trash

ROAD RUNOFF

picks up oil, gasoline, sediment, trash, tar

STORM DRAIN

All water goes to a storm drain which leads to...

RIVER, LAKE OR OCEAN

By the time the rain makes it to the ocean, it has picked up pollutants from hundreds of sources.

GETTING OUR LOCAL WATERWAYS BACK ON TRACK

MANY HAMPTON ROADS WATERWAYS CONTAIN TOO MUCH SEDIMENT, NITROGEN, PHOSPHOROUS AND BACTERIA.

To combat this, the state has assigned **Total Maximum Daily Loads (TMDL)** to many of our waterways. A TMDL identifies how much pollutant a body of water can receive while still meeting water quality standards. You may have heard it called a "pollution diet."

In order to meet the TMDLs, state agencies are working with farmers and wastewater facilities to implement projects that reduce nutrient pollution; localities are undertaking capital improvement projects; and nonprofit river groups are working with private property owners to implement natural methods to manage rainfall.

Most of our waterways are part of the Chesapeake Bay Watershed. Therefore, our impaired waterways also are contributing to the poor health of the Chesapeake Bay, which has also been assigned a TMDL that every state within the watershed is working to achieve.

YOU'RE CLOSER THAN YOU THINK!

5 MIN WALK

10 MIN WALK

15 MIN WALK

20 MIN WALK

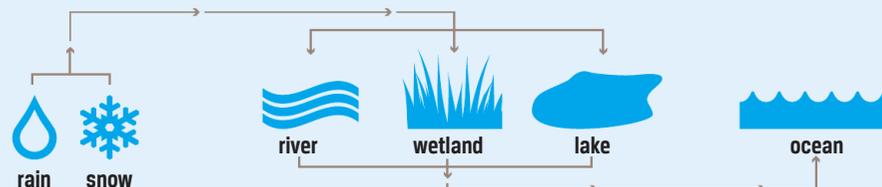


Even though you may not be able to see the Chesapeake Bay from your back yard, you're closer than you think! No matter where you live in the Chesapeake Bay watershed, it would take about 15 minutes to walk to a stream, river or body of water that flows into the Chesapeake Bay.

WHAT CAN YOU DO TO CLEAN UP OUR WATERWAYS?

WE'RE GLAD YOU ASKED!

WHAT IS A WATERSHED?



When it rains or when snow melts, the precipitation flows across the ground's surface and begins to make its way to a nearby tributary, wetland, river or lake, and then on to a larger body of water, such as a bay or ocean. The land that the water flows across on this journey and the waterways that receive it are called a watershed.

- SCOOP, BAG, AND TRASH DOG WASTE**
- SEED BARE SPOTS IN THE YARD**
- PUT CIGARETTE BUTTS IN THE TRASH**
- DON'T FEED THE WILDLIFE**
- TEST SOIL BEFORE FERTILIZING**
- PLANT MORE NATIVE PLANTS**
- KEEP GRASS AND YARD WASTE OUT OF THE STREET**
- DON'T TREAT THE TOILET LIKE A WASTE BASKET**
- CAN COOKING GREASE, SCRAPE LEFTOVER FOOD INTO THE TRASH AND CATCH FOOD SCRAPS IN THE SINK**



the GardenGuru

Jim Orband, a retired Virginia Cooperative Extension Horticulturist, has earned numerous awards for community education, including the prestigious Virginia Tech Alumni Award for Extension Excellence. He was kind enough to come in from the garden when askHRgreen.org caught up with him this month.

With spring lawn care, where should I start?

First, assess your landscape and develop a plan to take care of specific situations that need help. For example, you might look at an area where the soil is bare. Something must be wrong, and it is preventing the establishment of a turf. So make a plan that might include: soil testing, soil amendments and studying different ground covers to stabilize the soil.

How do I know if I need to fertilize?

You'll know by testing your soil. Soil test kits can be obtained from your local Cooperative Extension Office. Complete the required information, collect the

soil sample as instructed, and mail with a check to the address on the box. Results provide recommendations for soil amendments to help you make the right decisions for your lawn.

Do you have any tips for selecting and arranging plants?

Begin by studying the area that you intend to plant. Observe the amount of sun the area receives at different times of day and whether the sun is filtered by trees or buildings. Monitor the area for wind conditions. Then observe if the soil drains well or if water pools and the area is soggy. These factors will help you select the right plants. There will be pretty

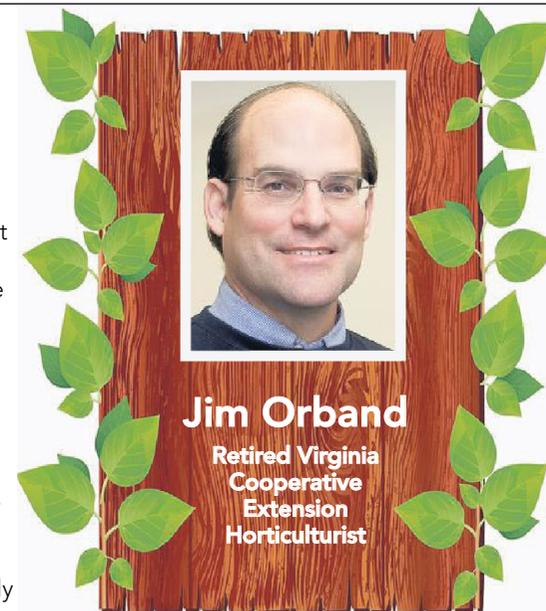
flowering plants at garden centers that will catch your eye. Stay the course and select plants that will adapt to the conditions you identified.

Are there any natural pest control techniques I can use?

One method is proper pruning because it allows light penetration and increases the air movement in the plant, making it difficult for insects and diseases to live. Another is to use predatory insects. Lady beetles, or lady bugs, eat aphids, scale insects, thrips, mealybugs and mites—pests all gardeners despise. When it's time to control an insect, identify it, then try to find an alternate control rather than a pesticide.

Why are soil splash marks on the outside of my house and garage?

These marks result from rain hitting a hard surface and causing the loose particles (sand, organic matter, etc) to bounce up and land on the building. This usually occurs in



Jim Orband

Retired Virginia
Cooperative
Extension
Horticulturist

places where the soil is bare. Using a ground cover will reduce this occurrence. Mulch is a short-lived solution and will become part of the problem in the future. Another option is to use large-sized stones or river rock in the drip area. The idea is to reduce the loose soil surfaces close to your home's exterior.

For more lawn and garden advice, visit www.askHRgreen.org/your-yard

GOOD to KNOW

EVERY ACTION WE TAKE HAS AN IMPACT ON OUR HOME SWEET FRAGILE HOME

WHEN YOU



Flush anything other than toilet paper and human waste down the toilet

IT CAUSES

Sewer pipes to become blocked and raw sewage to back up in the street

RESULTING IN

Raw sewage entering local waterways via storm drains

AND THAT MEANS

We cannot swim at local beaches or eat local seafood



Rake or blow leaves into the street

Organic material to be carried to local waterways via a storm drain

Leaves and grass decomposing, which uses up dissolved oxygen needed by fish and crabs

A decline in the population of local fish and crabs



Over fertilize your lawn

Nitrogen and phosphorus to be carried to local waterways via a storm drain

Algae blooms growing quickly

Waterways become discolored, smell foul and are not desirable for swimming or boating. Underwater grasses cannot thrive.



Leave bare spots in your yard

Dirt to be carried to local waterways via a storm drain

Waterways becoming cloudy from excessive sediment

A decline in the population of fish, oysters and other aquatic life



To learn more about our impact on local waterways, just askHRgreen.org



/askHRgreen



/HRgreen

Dear Garbage Disposal,

I thought we had something special. I thought we met each other's needs. I cooked for you; you cleaned for me. I peeled potatoes; you ate the peelings. We shared every meal.

Now, I can barely look at you. Those food scraps? They weren't disappearing; they're still here! And now I'm left with pipes full of memories of you, shreds from every breakfast, lunch and dinner. There they linger—built up from our years together, lining my pipe walls just waiting to block the flow of wastewater and backup into my sink.

We're through. No more leftovers for you! Not one green bean or black-eyed pea, not one chunk of a chicken tender or spoonful of saffron rice will ever cross your path again. Not on my watch. From now on, food scraps go where they belong—in the trash or compost bin. And meal prep and cleanup consists of washing only soap suds, not potato spuds, down the drain. I'm wiping the slate clean, and I'm wiping my dishes and scraping them into the trash before washing. And those stuck-on food scraps? I'd catch them with a sink strainer any day of the week before I'd ever let you claim another victim in your sticky web of ground-up grit and grime.

In the words of Taylor Swift, "We are never, ever getting back together."

Your Ex,
Katie



find your InnerGreen



1. Choose tap, not bottled water. Good for the landfill. Good for your wallet.
2. BYOB when you shop. That's bag, by the way.
3. Recycle, recycle, recycle.
4. Buy fresh, local produce. Local farmers will thank you.
5. Get involved. Join a community clean-up.
6. Cut the fat. Dispose of cooking fats, oils and grease in the trash.
7. Go native in your landscape. Native plants and trees, that is.
8. Reduce paper. Communicate electronically.
9. Speaking of electronics, please recycle them.
10. For your next party, get out the good dishes and cloth napkins, instead of paper. (Are we invited?)

I wonder if she remembered to call **SMI** to get the A/C system checked.



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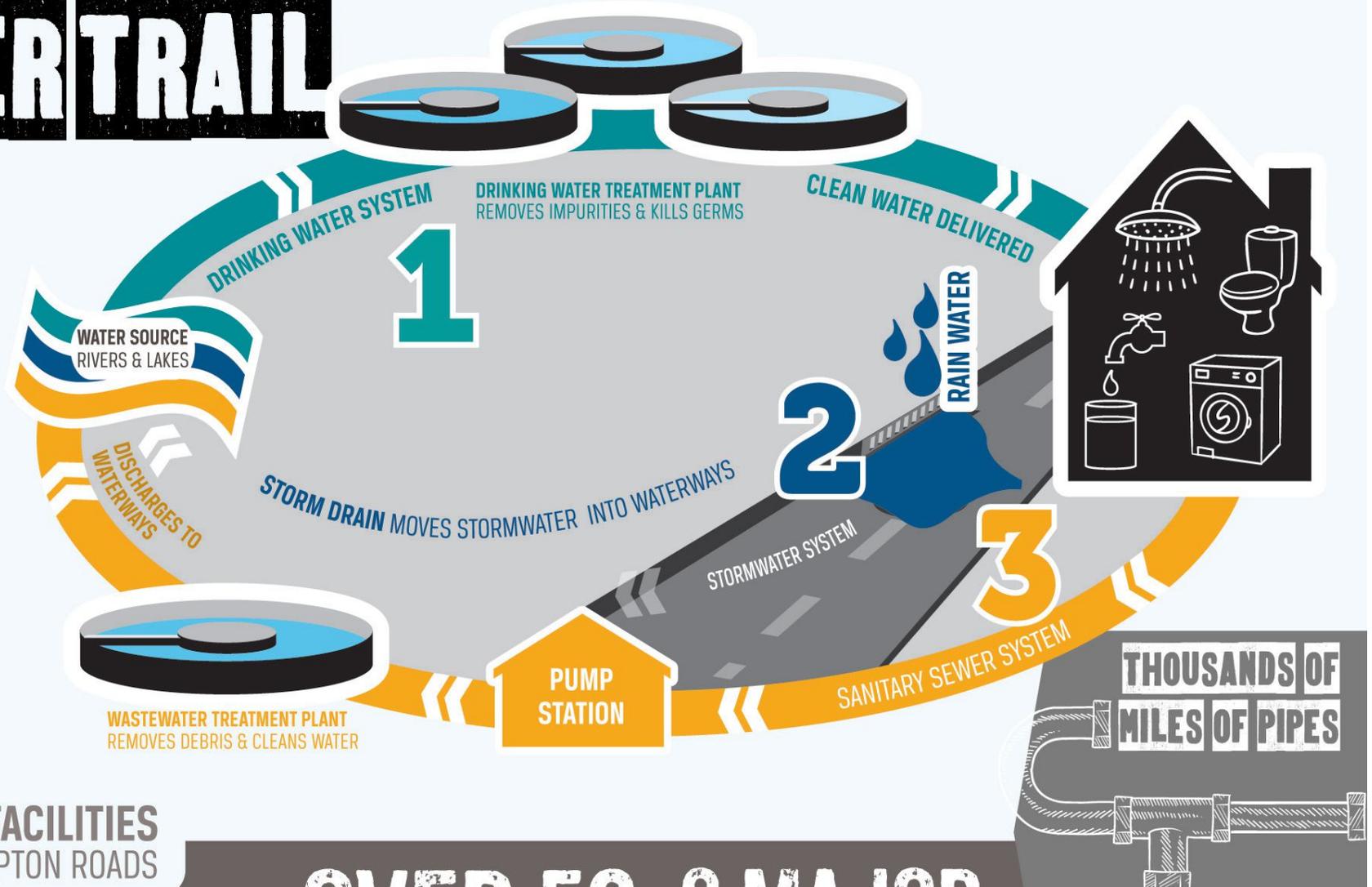
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FOLLOW THE WATER TRAIL

Over 1.5 million people in Hampton Roads are served by public water systems. Daily water use in our region is approximately 135 million gallons per day (MGD).

You've flushed a toilet, let the faucet flow and watched water rush down the street during a rainstorm. But do you really understand where our water comes from—and where it goes? In Hampton Roads, three very important water systems make up our regional infrastructure. Each system has a separate and specific purpose from the others.



OF FACILITIES IN HAMPTON ROADS

MORE THAN 1,400
SANITARY SEWER PUMPING STATIONS

OVER 50
WATER PUMPING STATIONS

9 MAJOR
WASTEWATER TREATMENT PLANTS
249 MILLION GALLONS PER DAY (MGD)

Hampton Roads has more than 6,500 miles of water distribution pipeline and over 5,800 miles of sanitary sewer lines.

OVERSEEING PROJECTS AND KEEPING IT CLEAN

Over the last decade, Hampton Roads communities constructed over 1,100 stormwater management projects.

These projects involve retrofitting areas, installing stormwater best management practices (for example: retention ponds) or restoration activities. This represents an investment of nearly \$200 million.

Projects of this scale and magnitude continue today.

On average, local governments clean more than 55,000 catch basins, service more than 700 miles of drainage facilities each year and sweep nearly 90,000 miles of streets. These activities prevent an estimated 40,000 tons of material from polluting the region's waterways annually.

COMPARATIVELY, WATER AND SEWER SERVICE IS A BARGAIN IN HAMPTON ROADS

5,000 GALLONS = \$75 PER MONTH | \$900 PER YEAR

2 SMARTPHONES WITH DATA PLANS = \$140 PER MONTH | \$1,680 PER YEAR

1 DRINKING WATER SYSTEM

BRINGS SAFE, CLEAN WATER TO OUR HOMES



HOW IT WORKS

Hampton Roads' raw water sources include aquifers, reservoirs, lakes and rivers. Most of our drinking water comes from surface water which is pumped to water treatment plants. During the treatment process, the water passes through screens, then chemicals are added to remove impurities. Next, the clarified water is disinfected to kill bacteria, viruses and other microorganisms, then filtered to remove any remaining particles. Finally, a secondary disinfectant is added to maintain disinfection throughout the pipe system. Once the water is cleaned and safe to drink, it is pumped through a network of pipes and storage facilities to homes and businesses.

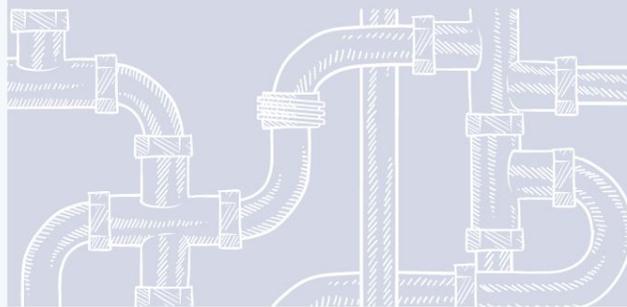
2 STORMWATER SYSTEM

TAKES RAIN WATER AWAY FROM HOMES AND STREETS THROUGH THE STORMWATER OPENINGS YOU SEE ON YOUR NEIGHBORHOOD CURB OR THE GRATES ON PUBLIC STREETS



HOW IT WORKS

Rainwater runoff from rooftops, gutters and lawns is directed into the stormwater system. The drain usually looks like a small opening in the curb or a grate in the pavement. Unlike the sanitary sewer system, stormwater is never treated and flows directly to our local waterways.



3 SANITARY SEWER SYSTEM

TAKES WATER AWAY FROM OUR HOMES WHEN WE FLUSH THE COMMODE, TAKE A SHOWER OR OTHERWISE RUN WATER DOWN OUR DRAINS. THIS WATER IS KNOWN AS WASTEWATER



HOW IT WORKS

Wastewater leaving our homes travels through miles and miles of pipes to nine treatment plants across the region. Because of the flat landscape, sewer pumping stations are used to push the wastewater to the treatment plants. At the treatment facility, debris is screened and settled out of the wastewater. Bacteria and other small organisms then consume the waste and help clean the water. Finally, it is disinfected before being released back into local waterways. Some treatment plants add an extra step to remove nutrients to help protect local waterways.



OUR AGING INFRASTRUCTURE

Driving along the region's roadways, it is easy to see the wear and tear that time and the elements place on our highway infrastructure. But underneath those same roads lie thousands of miles of pipeline that make up our drinking water, sanitary sewer and stormwater systems. Our community is literally built on top of this vast infrastructure. These systems, and the people who maintain them, work silently and reliably

to keep the water flowing. In fact, the systems work so well, we often take them for granted. Because this infrastructure is out of sight, we are less likely to appreciate the need for maintenance. But just like our road systems, their proper functioning is essential to ensuring a high quality of life here in Hampton Roads.

The U.S. Government Accountability Office has noted that water and wastewater utilities do not generate enough revenue from user rates to cover their full service cost. The result of this shortfall

is postponed maintenance and delayed replacement of our infrastructure. This is a reality in Hampton Roads and without action now, we risk increased service disruptions, water main breaks and sanitary sewer overflows. Beyond these inconveniences, deteriorating infrastructure poses a threat to the environment, our local economy and public health.

GOOD to DO

WHAT CAN YOU DO?

DON'T TAKE WATER FOR GRANTED.

Water is life. The water we use now is all we'll ever have, so we must use it wisely. You can conserve in small ways that make a big difference to preserve and protect our water resources.

SUPPORT AND INVEST IN INFRASTRUCTURE.

It is critical that we support the investment necessary to replace our aging infrastructure. Our quality of life and health cannot be sustained without continued and improved access to clean drinking water and sanitation services.

THINK BEFORE YOU FLUSH.

It's a toilet, not a trash can! Everything you send down the drain ends up at your local wastewater treatment plant.

STAY INFORMED ABOUT WATER-RELATED ISSUES.

Learn more about what happens to the water you drink and use. Start by reading and understanding your water and wastewater bill and your locality's annual water quality report.

Happy Birthday Nearly Two Years and Counting askHRgreen.org!



askHRgreen.org turns two this summer—and what a couple of fun years it has been. The go-to source for all things green in Hampton Roads, askHRgreen.org began as a region-wide public awareness and education campaign. What it is becoming is a local green movement that is gaining momentum among residents from Williamsburg to Virginia Beach, and from Isle of Wight County to Poquoson. Julia B. Hillegass is delighted. On behalf of the Hampton Roads Planning District Commission (HRPDC), she oversees askHRgreen.org, working with municipal representatives from all 16 Hampton Roads cities and counties, as well as HRSD. askHRgreen.org was top of mind when *Green Living* caught up with Julia this month.

askHRgreen.org will soon mark its second anniversary. Why was it developed?

We developed askHRgreen.org to help Hampton Roads residents find their inner green with just the click of a mouse. For years, the 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. It was smarter to pool resources than to have a small, scattered approach.

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. Then, voila! askHRgreen.org was born.

How has it evolved?

We 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 larger environment.

What site features do you believe aide residents the most?

Well, we're true to our name—if you have a question, you can literally askHRgreen.org! Questions are filtered using information on the site. If it is a question we haven't addressed, you can send us the question through the site, and someone from our staff will find an answer. Another great feature of our site is the event listings. All of our member localities and partners can post their environmental activities so that

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****PROFESSIONAL INSTALLATION INCLUDED****

residents can find the green events closest to where they work, live and play.

Does askHRgreen.org provide exposure for other like-minded green groups?

Absolutely! We welcome calendar submissions for related events, blog comments, there's a form for watershed restoration groups to send us their info to share, and we welcome your comments. A conversation about keeping the environment clean is a good one to have!

Who handles the "Let's Talk Green" blog featured on the site?

Our blog content is written by a team of local government committee members, HRPDC staff, long-time partners and occasional guest bloggers. We strive to keep the content informative, yet entertaining, and we hope to elevate the green conversation in Hampton Roads.

In addition to the blog, where else can you find askHRgreen.org?

You can like us on Facebook, follow on Twitter, tune in to YouTube and pin us on Pinterest. We're very social.

Is there information to help educators?

There is a whole section of the website devoted to the classroom. Educators can download our *Green Learning* guide (written and provided for the region's sixth-grade students), various lesson plans and even apply for mini-grants to fund innovative environmental projects for their classes or environmental clubs.

Are there site features that Hampton Roads residents would be surprised to find?

In general, we're hearing that 1) residents are impressed with the variety of information that we are able to place literally at their fingertips and

2) the fact that it is so customized for Hampton Roads. In addition to news for residents and educators, we have great material specific to greening your business.

What's on tap for askHRgreen.org in its third year?

We hope to continue this *Green Living* series and develop another *Green Learning* classroom publication. We're looking for

creative ways to showcase our partners and develop more regional **askHRgreen.org** champions to help us spread the word. Our messaging is becoming more sophisticated in that we're helping people to make the connections between their actions, the environment and improving their lives. It's not enough to encourage action because it's the right thing to do; we need to tell a story, show people why they should care and why behavior change is important to the environment and their personal quality of life.



What is your favorite website page?

By far, my favorite page is our *Green Learning* guide. Although it is targeted to school-aged children, I think most adults will learn a thing or two as well! The photos and info-graphics tell a compelling story of how easy it is to make a positive impact on the environment. Traditional and non-traditional educators, and especially students, have given it rave reviews. It can easily be used to start a family discussion around the dinner table.

GOOD to KNOW

WHAT NOT TO FLUSH

**DISPOSABLE
"FLUSHABLE" WIPES**



Regardless of what the packaging may say, if it's not toilet paper it belongs in the trash, not down the drain where it clogs your pipes.

MEDICATIONS



Expired or unwanted medications should never be flushed or poured down the sink. Wastewater treatment plants are not designed to remove medications.

TRASH



The toilet is not a wastebasket. You'll save your pipes and lots of water by putting trash (paper towels, cotton swabs, feminine hygiene products, etc.) where it belongs.

PLEASE FLUSH RESPONSIBLY » ONLY YOUR PERSONAL CONTRIBUTIONS

To learn more about what not to flush, or proper disposal of medications, just

askHRgreen.org



/askHRgreen



/HRgreen

have your yard... **AND EAT IT TOO!**

Enjoy a homegrown harvest from your own backyard.
Visit us and see what's on the menu.

BERRIES • HERBS • TOMATOES • PEPPERS • CUCUMBERS • FRUIT TREES + SO MUCH MORE

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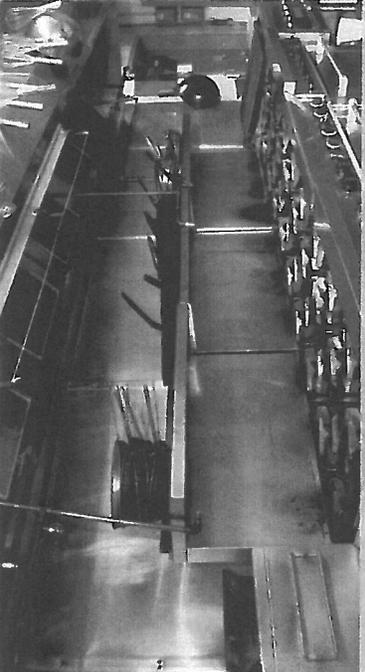
| | | | Total FY 13 |
|---|-------|-------|--------------------|
| No. of Nutrient Management Plans Issued: | | | 191 |
| Residential | | 120 | |
| Commercial* | | 71 | |
| (James City County/School Properties = 0**) | | | |
| Acres Covered by Nutrient Management Plans: | | | 34.04 |
| Residential | | 18.89 | |
| Commercial | | 15.15 | |
| (James City County/School Properties = 0) | | | |
| Acres in relation to RPA: | | | 34.05 |
| In an RPA | | 5.9 | |
| Residential | 5.53 | | |
| Commercial | 0.37 | | |
| (James City County/School Properties = 0) | | | |
| Near an RPA | | 2.64 | |
| Residential | 2.64 | | |
| Commercial | 0 | | |
| (James City County/School Properties = 0) | | | |
| Not in or near an RPA | | 25.51 | |
| Residential | 10.72 | | |
| Commercial | 14.79 | | |
| (James City County/School Properties = 0) | | | |
| No. of Soil Tests Sent to VA Tech: | | | 168 |
| Turf Love Program: | | 168 | |
| Residential | 135 | | |
| Commercial | 33 | | |
| (JCC/School Properties = 1 {4th Qtr}; 15 {FY 13}) | | | |
| No. of Property Owners Contacted | | | 400 |
| Residential | 394 | | |
| Commercial | 6 | | |
| (James City County/School Properties = 1) | | | |
| Community Presentations | | | |
| JCC First-Time Homeowners | | | |
| General Contacts (may not be property owners): | | | 494 |
| Seminars (Super Turf Saturday/Turf Love University) | 186 | | |
| Farmers' Market | 151 | | |
| Others: | 157 | | |
| Ford's Colony Garden Tour | | | |
| Tractor Supply Booth | | | |
| Eastern State Hospital presentation | | | |

* ' Commercial' = non-residential property, plus reports to developers (as client) for residential properties

**** James City County Properties:**

- JCC Recreation Center athletic fields
- JC Service Authority
- School Properties

 =differences due to rounding



RESTAURANTS & FOOD SERVICE ESTABLISHMENTS SHOULD:

1. Have proper grease control equipment installed.
2. Maintain (routinely clean or pump out) grease control equipment. Check interceptor regularly to make sure it is less than 25% full of grease and settled solids, contains outlet Ts, and the structure is in good operating condition. For more information on the cleaning and maintenance of grease control devices, see HRSD's list of approved haulers online at www.FatFreeDrains.com.
3. Keep records on-site of grease control equipment pumping/cleaning and maintenance to provide inspectors.
4. Train staff to implement Best Management Practices for grease.
5. Keep hoods clean. Wash hood filters in sinks that flow to grease retention devices attached to the sanitary sewer system.

USE PROPER GREASE MANAGEMENT TO AVOID:

- Clogged drains, which can result in a sewage back-up in your business
- Costly maintenance and potential fines
- Rodent infestation

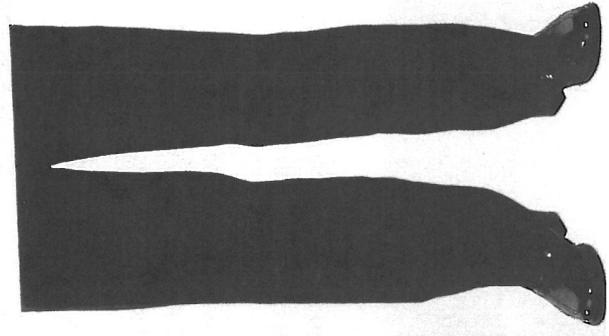
Partners in Grease Management:

- Chesapeake
- Franklin
- Gloucester
- Hampton
- Isle of Wight
- James City
- Newport News
- Norfolk
- Poquoson
- Portsmouth
- Southampton
- Suffolk
- Surry
- Virginia Beach
- Williamsburg
- York County

Hampton Roads Sanitation District (HRSD)



BEST MANAGEMENT PRACTICES FOR RESTAURANT GREASE



For more information please contact:
Hampton Roads Planning District Commission
(757) 420-8300 | www.FatFreeDrains.com

Best Management Practices for outside grease storage:



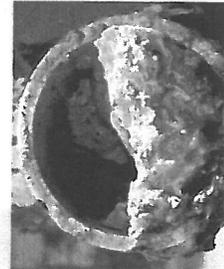
CONTAINER STORAGE:

- Store grease in leak-proof containers with tight-fitting lids. DO NOT pour down sinks or drains. DO NOT pour into storm grate or on the ground. This will clog the drains and pollute streams.
- Use only containers in good condition.
- Secure containers to prevent accidental spills, vandalism, or unauthorized use.
- Conduct regular inspections of the storage area and regularly maintain the container and storage area.
- Store containers away from storm drains.

Best Management Practices for grease inside the kitchen:



- Post "NO GREASE" signs above sinks.
- Use food grinders as little as possible; they fill up grease traps too quickly!
- Educate and train kitchen staff about control.
- "Dry wipe" all pots, pans, and plates prior to dish washing. This helps prevent grease build-up in your sewer lines and your city's sewer lines.
- Use strainers in sink drains to catch food scraps and other solids; empty strainer contents into trash.



Grease build-up in pipes can cause major damage to pipes and lead to sewage back-ups in your business.



In the event of a back-up, call your local water provider!

WHY IS GREASE CONTROL EQUIPMENT INSTALLATION REQUIRED?

Fats, oils and grease can cause serious problems in the sewer system and in a restaurant or food service establishment problems include:

- Raw sewage overflows due to blocked sewer lines.
- Rancid odors.
- Potential contact with microorganisms that can cause hepatitis and gastroenteritis.
- Expensive cleanup, repair, and replacement of damaged property.

Sewer line blockages due to fats, oils, and grease have increased cost to municipalities and increased reporting of sanitary sewer overflows to the Virginia Department of Environmental Quality and the EPA.

IN THE EVENT OF A GREASE SPILL:

- Begin cleanup immediately.
- Do not use detergents or degreasers.
- Block or seal off nearby storm drains.
- Contact a clean-up contractor and the appropriate agency if the spill is unmanageable.
- Never wash leaks, spills, or used clean-up materials onto nearby streets or into drains.
- Dispose of all used clean-up materials in a garbage can.

CLEANING FLOOR MATS AND OTHER GREASY EQUIPMENT:

Wash all floor mats and grills in a mop sink so the wastewater goes to a grease retention device. Never clean this kind of equipment in an area where wastewater can flow to the gutter, storm drain, or street.

POOL MAINTENANCE FACTS:

Discharges from Pools, Spas, Fountains, etc.

Introduction

The average swimming pool holds 19,000 gallons of water that may contain a variety of biocides, algaecides and other chemicals used to kill algae. These chemicals are toxic to the environment, wildlife and fish. In fact, emptying water containing chemicals from pools, spas, and fountains to nearby storm drains pollutes waterways and such discharge is prohibited by local laws. Only rainwater should go down the storm drains.



How This Affects You

Residents and service providers drain chemically treated water from pools for regular maintenance. Decorative fountains are regularly emptied and sometimes treated or cleaned with various chemicals like chlorine to prevent algae and with acids to remove rust and other stains. Draining chemically treated water into the street, and ultimately the storm drain system, will harm the environment and is likely a violation of local ordinances. Even the pool filter backwash water, which contains sediments and chemicals, should not be emptied to a driveway, street, or gutter where it will flow to nearby storm drains.

What to Do

Ordinances vary from locality to locality throughout Hampton Roads. It is up to the resident/pool owner to check with their local government agency for direction on proper disposal of pool water. Here are some general maintenance guidelines:

- Allow pool water to sit for several days without treating it to allow chlorine to dissipate.
- Add sodium thiosulphate, a salt that breaks down chlorine, to the water for faster results. (Levels should be below 0.1 milligrams per liter of chlorine or bromine.)
- The pH of the water should be between 6.5 and 8.5 before it is drained.
- Avoid the use of algaecides such as copper and silver by maintaining your pool's chemicals properly.
- Drain the water from chlorine or bromine pools to grassy areas, where it will soak into the ground rather than flow to nearby storm drains. Discharging saltwater in yards may cause browning. (The lawn and soil serve as natural filters.)
- Log onto HR STORM (www.hrstorm.org) for more information and contact links.

Your locality may have restrictions or procedures beyond these guidelines. HR STORM offers this information and other tips to help prevent stormwater pollution. Check out our website at www.hrstorm.org or call the InfoLine for your local government contact at: **(757) 58-STORM.**



www.hrstorm.org



FROM THE HOMEFRONT TO THE WATERFRONT
HR STORM
CLEAN WATERWAYS BEGIN WITH YOU

For MS4 Program Plan Item 1.5

**James City County Impaired Waters Specific Outreach Activities
July 1, 2012 to June 30, 2013 – PY5**

ITEM ACCOMPLISHMENTS

- 1.5 a) **Bacterial Impairments:** Eight of the County's 11 watersheds have documented bacterial impairments and are listed on the 2008 303(d) list. During Fiscal Year 2013, the County continued its local, countywide Scoop the Poop campaign.
- Building on prior years' activities, the County provided four more pet waste stations to James City County Parks and Recreation Division in order to provide a safe disposal unit for bagged pet waste. Four pet waste stations were provided to neighborhoods in four different watersheds.
 - Scoop the Poop was a primary message at four events: the Humane Society's Bark-in-the-Park event for dog owners, the James City County Open House, the Williamsburg Farmers Market, the Berkeley Middle School Stormwater Presentation, and the James River Festival. These events attracted over 1250 participants. Over 600 Scoop the Poop message items were distributed.
 - Implementation of the identified action items continued for the Mill Creek and Powhatan Creek Bacteria TMDL Implementation Plan.
 - The County continued its water monitoring bacterial screening program that includes the use of volunteer monitors. Two volunteers continued monitoring three sites in the Powhatan Creek watershed.
- b) **Benthic and Dissolved Oxygen Impairments:** This permit year the County continued to grow the volunteer benthic macro-invertebrate water quality monitoring program. Through workshops and field events, this program trains citizens on the principals of water quality standards and the specific water quality problems related to stormwater. This year 34 volunteers participated in one of four monitoring workshops. In FY13, 42 people actively participated in the JCC benthic monitoring program through bio-monitoring events. Volunteers currently monitor 16 sites in the County.



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.

Appendix C-2

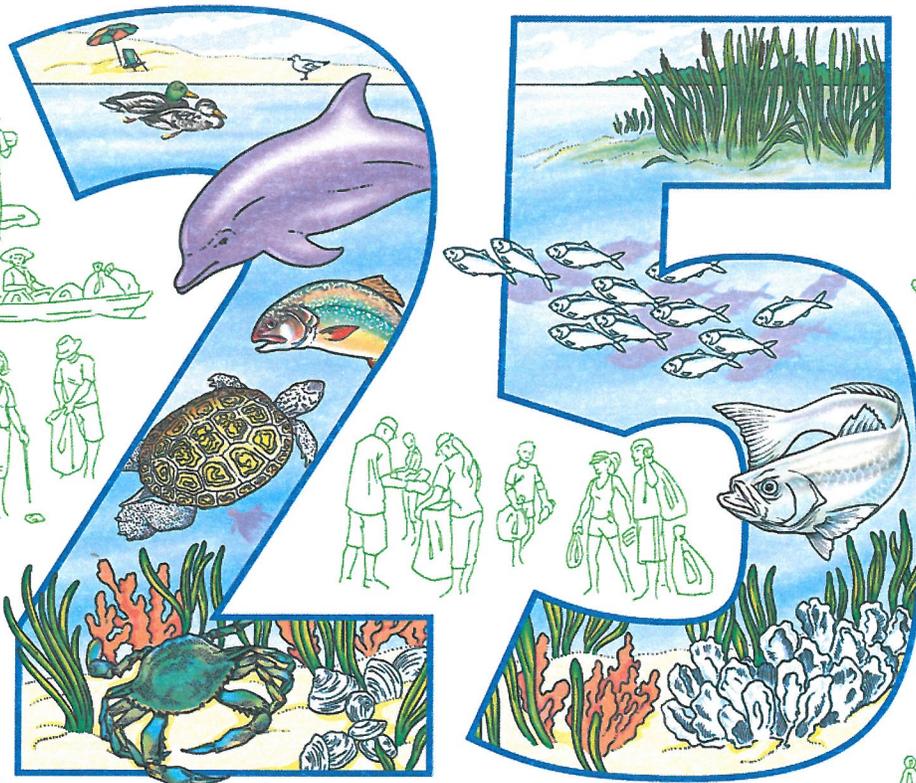
**Exhibits for Minimum Control Measure #2 –
Public Participation**

| Organization | Location of Project | Project type | Project Summary | Project budget | Objective | Committee Decision |
|---|-----------------------------------|-----------------------|--|----------------|---|---|
| Indigo Park Recreation Association | Community Pool area | Other | Install swing gate to prevent RPA from being used as yard waste dump | \$492.00 | Prevent yard waste in Mill Creek Headwaters | Give project over to Stormwater Dept |
| Lake Powell Forest Owner's Association | Common area / Community park | Plant More Plants | Plant trees in community park | \$500.00 | Soil Stabilization, prevent stormwater runoff | \$375 awarded upon approval of planting plan |
| Forest Glen | Eroded property | Plant More Plants | Planting project to stabilize soils | \$500.00 | Hillside stabilization | \$375 awarded upon approval of planting plan |
| Greater First Colony Civic Association | First Colony Beach and Marina | Plant More Plants | Plant grasses to prevent shoreline erosion, and stormwater runoff | \$669.00 | Control wind and wave erosion, protect wetlands from stormwater runoff from parking lot | \$500 awarded upon approval of Engineering and Resource Protection dept |
| Colonial Heritage Association | 6869 Arthur Hills Dr | Plant More Plants | Control erosion on homeowner's property | \$1,000.00 | Control erosion and stabilize slope | More information requested |
| Governor's Land Foundation | Whitaker's Lake BMP | Stormwater Management | Repair and regrade eroded stormwater pond denuded areas on banks | \$9,980.00 | Lake Shoreline Stabilization, remediate erosion, reduce sedimentation | \$2000 awarded upon approval of planting plan |
| Mill Creek Landing HOA | Drainage ditch along Burnley Dr | Stormwater Management | Rip rap installed at 45 ft intervals along 275 ft drainage ditch | \$1,023.20 | Stop drainage erosion | 50% of cost, up to \$2000 upon approval of revised estimate and maintenance agreement |
| The Association at Stonehouse, Inc. | BMP WC079 in Lisburn neighborhood | Stormwater Management | Correct erosion that caused major soil and riprap slippage | \$5,800.00 | Stabilize BMP embankment and protect slope | Denied, but would like to consider a different project |
| Heron Run Homes Association | Heron Run Stormwater Pond | Stormwater Management | Stormwater pond aeration | \$9,500.00 | Improve water quality in stormwater retention pond, increase dissolved oxygen levels | \$2000 awarded |
| Greensprings property owner Ron Glidden | 22 acres in Greensprings RPA | Plant More Plants | Plant 35 willow trees to prevent further erosion from nearby flood-prone areas | \$1,306.14 | Soil Stabilization, prevent stormwater runoff | \$500 awarded |
| Fords Colony HOA | FCHOA common area | Plant More Plants | Planting project to stabilize soils | \$890 | Soil Stabilization, prevent stormwater runoff | \$500 awarded |

| 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 |
| YCMS04 | Yarmouth Creek | Downstream on Dunn property -- Debord | benthic | 37.35883309 | -76.79134369 |
| PCLT01 | Powhatan Creek | Behind the Pointe at Jamestown neighborhood off bike trail | benthic | 37.239118 | -76.775122 |

MANY HANDS · LIGHT WORK

CLEAN THE BAY DAY



YEARS

Saturday, June 1, 2013

9 a.m. - noon

To do your part:

cbf.org/clean 800-SAVE/BAY ctbd@cbf.org



CHESAPEAKE BAY
FOUNDATION

Saving a National Treasure



From: [Suzanne Dyba](#)
To: [Fran Geissler](#); [John Horne](#)
Subject: Clean the Bay Day results
Date: Monday, June 03, 2013 10:35:17 AM

For your records, here is the total from Clean the Bay Day here in JCC:

York River, Chickahominy River, James River sites

15 miles of shoreline

100 volunteers

1325 lbs. of debris, 3 tires, 1 car battery, 1 box spring, 1 mattress, 1 TV and 2 plastic coolers

Good stuff!

Suzanne Dyba
Water Monitoring Coordinator



General Services Department
5320 Palmer Lane, suite 2A
Williamsburg, VA 23188
P: 757-259-1446
F: 757-259-5833
jamescitycountyva.gov/stormwater

| DATE | Event | Announcement Posted Publically | Written Agenda | Minutes Approved | Minutes Posted on Website |
|-------------|------------------------------------|---|---------------------------|-----------------------------|--|
| 7/17/2012 | SPAC regular meeting | yes | yes | yes | yes |
| 8/6/2012 | SPAC Outreach Subcommittee | no | no | no | no |
| 8/8/2012 | SPAC Outreach Subcommittee | no | no | no | no |
| 9/18/2012 | SPAC regular meeting | yes | yes | yes | yes |
| 11/27/2012 | SPAC regular meeting | yes | yes | yes | yes |
| 1/15/2013 | SPAC regular meeting | yes | yes | yes | yes |
| 2/7/2013 | SPAC Strategic Planning Session | no | yes | no | no |
| 2/12/2013 | SPAC Strategic Planning Session | no | yes | no | no |
| 3/19/2013 | SPAC regular meeting | yes | yes | no | no |
| 5/21/2013 | SPAC regular meeting | yes | yes | yes | yes |

Appendix C-3

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

MS4 Discharges to Receiving Surface Waters identifying Impaired Waters

| Watershed | HUC | MS4 Acreage | Land Use | Impaired Water | Impaired Acres |
|---|-------------|-------------|---------------------|----------------|----------------|
| College Creek | JL34 | 61.4 | Office Bldg | Yes | |
| | JL34 | 1.9 | Pump Station | No | |
| | JL34 | 0.6 | Pump Station | Yes | |
| | JL34 | 0.1 | Roadway | No | |
| | JL34 | 0.4 | SF Res | No | |
| | JL34 | 0.8 | Water Tank | No | |
| | JL34 | 0.6 | Well Lot | No | |
| Total Impaired for College Creek | | | | | 62 |
| James River | JL35 | 2.7 | Fire Station | No | |
| | JL30 | 0.1 | Open Space | Yes | |
| | JL30 | 0.3 | Pump Station | No | |
| | JL35 | 0.7 | Pump Station | No | |
| | JL30 | 0.1 | Pump Station | Yes | |
| | JL35 | 0.2 | Pump Station | Yes | |
| Total Impaired for James River | | | | | 0.4 |
| Mill Creek | JL33 | 20.1 | Open Space | No | |
| | JL33 | 2.5 | Police Station | No | |
| | JL33 | 3.1 | Pump Station | No | |
| | JL33 | 12.6 | School | No | |
| | JL33 | 0.9 | Well Lot | No | |
| Total Impaired for Mill Creek | | | | | 0.0 |
| Powhatan Creek | JL31 | 4.6 | BMP/Open Sp | Yes | |
| | JL31 | 1.5 | Fire Station | Yes | |
| | JL31 | 5.7 | Office Building | Yes | |
| | JL31 | 219.0 | Open Space | Yes | |
| | JL31 | 43.3 | Park | Yes | |
| | JL31 | 4.4 | Parking Lot | Yes | |
| | JL31 | 7.9 | Public Wks Yd | Yes | |
| | JL31 | 2.5 | Pump Station | Yes | |
| | JL31 | 130.7 | School | Yes | |
| | JL31 | 0.5 | SF Res | Yes | |
| | JL31 | 1.8 | Water Tank | Yes | |
| | JL31 | 18.6 | Water Treatment | Yes | |
| | JL31 | 1.8 | Well Lot | Yes | |
| Total Impaired for Powhatan Creek | | | | | 442.3 |
| Skiffes Creek | | 0.4 | Open Space | Yes | |
| | | 0.2 | Pump station | Yes | |
| Total Impaired for Skiffes Creek | | | | | 0.6 |
| Total Impaired for James City County MS4 | | | | | 505.3 |

ILLICIT DISCHARGE DETECTION & ELIMINATION PROGRAM ACTIVITIES

3.2 – IDDE Implementation and Enforcement Actions

There were five (5) reported illicit discharges in James City County from June 30, 2012 to July 1, 2013 – PY5. Upon investigation, one complaint was a violation of the County’s Stormwater Illicit Discharge Ordinance, Chapter 18A of the County Code. All violations were pursued until they met compliance following the protocol described in Item 3.3 below. There were also 54 reported SSORS notifications from JCSA, which are also considered an illicit discharge.

3.3 – IDDE Notification and Investigation Protocol

1. Receive complaint by telephone, e-mail, or another source.
2. Log complaint into DICE system (Stormwater Division’s tracking system).
3. Make a site visit to determine if a violation exists.
4. If site visit reveals a violation, a Notice of Inspection will be issued to document the violation.
5. Notice of Corrective Action to obtain compliance.
6. Record all Notices and Corrective Action activities.
7. If the issuance of the Notices does not achieve compliance, violations are to be forwarded to County Attorneys’ office for prosecution.



James City County Stormwater Division

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:** _____



James City County Stormwater Division

ILLICIT DISCHARGE INSPECTION REPORT

In accordance with Ordinance 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

Signature Date:

(County Letterhead)
NOTICE OF CORRECTIVE ACTION

[Date]

[Contact's name and address]

RE: [location]

Dear [contact's name]:

On [date of inspection] James City County staff inspected the [Fill in location.] for compliance with the James City County Code, Ordinance No. 208A-1. During the inspection, staff observed the following conditions:

An inspection report documenting these observations is attached.

§18A-22 states: *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*

While James City County makes no determination at this time regarding the observations documented by the staff, there appear to be discrepancies between the conditions observed at [location] and the requirements of the County Code governing those conditions. Please contact [Inspector.] within five days of the date of this letter either to explain the apparent discrepancies or to describe any relevant changes in the conditions at the site.

The purpose of this letter is to provide you with information James City County has gathered regarding the [location] and to solicit additional information from you regarding conditions observed at the site. If the alleged discrepancies described above cannot be resolved to the satisfaction of James City County within the time allotted, James City County will pursue formal enforcement action regarding the allegations in this NOCA. Ordinance No 208A-1 provides for civil penalties of up to \$1,000 per day for any violation of the ordinance.

Sincerely,

Stormwater Director

| Date | Location | Initial Complaint | Action Taken | Description/Result | Photos Taken |
|-----------|----------------------|---|---|---|--------------|
| 6/29/2012 | 3224 Pristine View | Possible paint waste dumped in woods | Spoke with painters and made them aware of the complaint. They stated that it was water they were dumping and not paint. Unable to find painters to sign inspection report. | No visual sign of dumped paint. Unable to find painters on follow up to sign inspection report | No |
| 10/9/2012 | 8936 Diascund Rd | Direct discharge of laundry facilities | Site visit made and unable to find direct evidence of discharge | Unable to determine if pipe is discharging laundry waste | No |
| 10/9/2012 | 8916 Diascund Rd | Direct discharge of laundry facilities | Site visit made and unable to find direct evidence of discharge | Unable to determine if pipe is discharging laundry waste | No |
| 10/9/2012 | 8805 Hicks Island Rd | Direct discharge of laundry facilities | Site visit made and unable to find direct evidence of discharge | Unable to determine if pipe is discharging laundry waste | No |
| 2/20/2013 | 4918 Courthouse St | Power washing water flowing into stormdrain | Site visit report was made as well as set up an in-office meeting to help improve SOP | Limited water entered system before operations were shut down. SOP has been changed to prevent further issues | Yes |

Only Rain in the Drain... It's the Law!

James City County Code Chapter 18A, Article II, Section 18-A-22 states that it is a violation to, "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."

Businesses **must be compliant** with local ordinances by making a few simple changes to cleaning methods or implementing easy to use devices. For example, cleaning on grass or other pervious surface that does not drain to the storm water system or using a device that would help collect or divert wash water that can be properly cleaned at a later time may be all that is needed. Examples of these devices include:

- **Storm drain cover/mats** are placed on top of storm drain grates to prevent water from entering. They create a quick seal, allowing water to pool and be collected with a sump pump or shop vac.
- **Vacuum pumps and wet/dry vacs** can be used to collect wash water. Once collected, the wash water can be rerouted to the sanitary sewer system. Hoses may be used to send water to an approved sanitary sewer manhole, cleanout, or holding tank.
- **Inflatable pipe plugs** are inserted into a storm drain pipe and inflated for a tight fit. The wash water collected in the storm drain sump may then be pumped to the sanitary sewer system or a holding tank.
- **Manufactured berms** may be placed around a storm drain, allowing water to pool for later collection/rerouting to the sanitary sewer system.
- **Absorbents**, such as kitty litter, work well to absorb liquids and can be easily swept up with a stiff bristled broom prior to pressure washing. **Absorbent pads** can be applied to spills and simply lifted off once fluids have soaked into the fabric.
- **Oil-only socks or booms** should be placed around storm drains where automotive oil residue is expected on a surface (such as a parking lot or drive-through). Socks or booms are also effective at catching debris and preventing their entry into storm drains during washing.
- **Bio-bags/Bark-bags** may be placed around storm drains as a protective barrier to collect debris and larger sediment. This method is effective for washing areas with moss, dirt, or debris buildup. They will NOT prevent petroleum-based residues from entering a storm drain as they do not absorb oils.

*See reverse side for **Best Management Practices for Pressure Washing Businesses.***

We work in partnership with all citizens to achieve a quality community.

Best Management Practices for Pressure Washing Businesses

Taking Clean Water by Storm



| Surface Types | Potential Pollutants | Cleaning Method and BMPs Required | Proper Disposal |
|---|---|---|---|
| Sidewalks, Plazas, Walkways | Sediment, Moss, Debris | Dry cleanup first by sweeping up loose dirt and debris. Place a biobag and/or oil-only sock or boom around storm drains. After washing, sweep up debris caught by biobag or sock. | Wash Water ▶ Stormwater System Debris ▶ Regular Trash |
| Parking Lots, Driveways, and Drive-through | Auto Fluids (engine oil, hydraulic fluid, antifreeze), Sediment, Moss, Debris | Dry cleanup first. Use absorbent materials to clean spills/leaks before washing. Place an oil-only boom or sock around storm drains. After washing, sweep up debris and dispose of properly. | Wash Water ▶ Stormwater System Debris ▶ Regular Trash |
| Restaurant/ Food Handling Dumpster Areas, Grease Storage Area | Food Grease, Food Scraps | Block storm drains. Dry cleanup first. Wash with hot water. | Wash Water ▶ Sanitary Sewer, through oil/water separator or grease interceptor Debris ▶ Regular Trash |
| Restaurant Floor Mats, Exhaust Filters | Food Grease | Inside – Wash mats in a sink or wash area with a floor drain. Outside – Clean mats in an area with no access to the storm system. | Wash Water ▶ Sanitary System through oil/water separator or grease interceptor |
| Building Surfaces, Decks (without loose paint) | Debris, Moss, Sediment | Dry cleanup first. Place socks/booms around storm drains. Sweep up debris afterwards. | Debris ▶ Regular Trash Wash Water ▶ Storm System or Gravel/Vegetated Area |
| Painted Surfaces Washed for Paint Removal | Latex and/or Lead Paint Chips | Place a drop cloth below painted wall or fence to catch chips. If paint is lead-based, all water and chips must be collected. | Latex Paint Chips ▶ Regular Trash Lead-based Paint Chips and Wash Water ▶ Hazardous Waste Latex Paint Wash Water ▶ Collect and divert to sanitary if possible. If no paint residue, may enter storm system. |
| Graffiti Removal | Chemicals and Solvents from Removal Process, Paint Chips | Block storm drains. If paint removed, follow paint removal best management practices above. Collect wash water. | Dispose of Paint Chips as Appropriate Wash Water ▶ Sanitary System |
| Vehicles | Dirt, Oil, Grease | Wash on a pervious surface such as grass, if possible. | Wash Water ▶ Grass |

"Best Management Practices for Pressure Washing Businesses" Springfield, Oregon. www.ci.springfield.or.us/ESD/bmp%20powerwashbook.pdf



Remember: Even when a chemical says it is "biodegradable," it does **not** mean it is safe for the storm water system. Use biodegradable, phosphate-free soaps and cleaners. For more information: jamescitycountyva.gov/stormwater and askhrgreen.org

Dry Weather Screening of MS4 Outfalls
July, 2012 to June 30, 2013 - PY5

For MS4 Program Plan Item 3.3c

James City County

| Screening Year | Screening Point ID | Location | Lat | Long | Structure Number | Commerical | Industrial | Residential | Screening Date | Comments |
|----------------|--------------------|------------------------------------|------------------|-------------------|------------------|------------|------------|-------------|----------------|------------------------------------|
| 2013 | 2013-0001 | James River ES | 37.2069698379881 | -76.6179120540619 | JR00004 | No | Yes | No | 06/03/2013 | |
| 2013 | 2013-0002 | Williamsburg Regional Library | 37.3755990490308 | -76.7723053693771 | YR000001 | Yes | No | No | 06/03/2013 | |
| 2013 | 2013-0003 | JCC Govt Center (Front of Complex) | 37.2451266502592 | -76.6820624470711 | CC00001 | Yes | No | No | 06/03/2013 | |
| 2013 | 2013-0004 | JCC Govt Center (Building C) | 37.2438967754898 | -76.6838246583939 | CC000002 | Yes | No | No | 06/03/2013 | |
| 2013 | 2013-0007 | Blayton/Hornsby School | 37.3349770000000 | -76.8039700000000 | GC101001 | No | No | Yes | 05/30/2013 | Outfull submerged |
| 2013 | 2013-0008 | Blayon/Hornsby School | 37.3326090000000 | -76.8063640000000 | GC101002 | No | No | Yes | 05/30/2013 | Outfall submerged |
| 2013 | 2013-0009 | Blayton/Hornsby School | 37.3314060000000 | -76.8081220000000 | GC101003 | No | No | Yes | 05/30/2013 | Outfall submerged |
| 2013 | 2013-0010 | Blayton/Hornsby School | 37.3312830000000 | -76.8081350000000 | GC101004 | No | No | Yes | 05/30/2013 | Outfall submerged |
| 2013 | 2013-0011 | Norge ES | 37.3645970000000 | -76.7711780000000 | YC104001 | Yes | No | No | 05/30/2013 | Underground storage BMP has failed |
| 2013 | 2013-0012 | Norge ES | 37.3644060000000 | -76.7711980000000 | YC104002 | Yes | No | No | 05/30/2013 | Maintenance required |
| 2013 | 2013-0013 | Toano MS | 37.3744880000000 | -76.8013750000000 | YC102001 | Yes | No | No | 05/30/2013 | Will have to follow up |
| 2013 | 2013-0014 | Stonehouse ES | 37.3955680000000 | -76.7948850000000 | MC000007 | No | No | Yes | 05/30/2013 | |
| 2013 | 2013-0015 | Stonehouse ES | 37.3944700000000 | -76.7928280000000 | WC000002 | No | No | Yes | 05/30/2013 | Partially submerged |
| 2013 | 2013-0016 | Stonehouse ES | 37.3940780000000 | -76.7929830000000 | WC000003 | No | No | Yes | 05/30/2013 | Pipe partially submerged |
| 2013 | 2013-0017 | Stonehouse ES | 37.3938940000000 | -76.7928970000000 | WC000004 | No | No | Yes | 05/30/2013 | Pipe partially submerged |
| 2013 | 2013-0018 | Upper County Park | 37.4133231409752 | -76.8300747871399 | DC000001 | Yes | No | No | 06/06/2013 | |
| 2013 | 2013-0019 | Upper County Park | 37.4137151348702 | -76.8282079696655 | DC000002 | Yes | No | No | 06/06/2013 | Timber Wall Structure |
| 2013 | 2013-0020 | JCCS Bus Depot | 37.3387303154175 | -76.8045616149902 | YCTMS001 | Yes | No | No | 06/06/2013 | |
| 2013 | 2013-0021 | JCCS Bus Depot | 37.3386583425988 | -76.8047071248293 | YCTMS002 | Yes | No | No | 06/06/2013 | |
| 2013 | 2013-0022 | Fire Station #2 | 37.2338669954773 | -76.6302824020386 | JR000003 | Yes | No | No | 06/06/2013 | BMP could use routine maintenance |
| 2013 | 2013-0023 | Fire Station #5 | 37.2601760439443 | -76.8098965287209 | JR000001 | Yes | No | No | 06/06/2013 | Pipe submerged |
| 2013 | 2013-0024 | Fire Station #5 | 37.2601290793116 | -76.8096417188644 | JR000002 | Yes | No | No | 06/06/2013 | Pipe submerged |
| 2013 | 2013-0025 | Tewning Rd | 37.2850567760924 | -76.7393356561661 | PC208002 | Yes | No | No | 06/06/2013 | Pipe submerged |
| 2013 | 2013-0026 | Warhill District Park | 37.3246116603621 | -76.7585778236389 | PC205019 | Yes | No | No | 06/06/2013 | Pipe Submerged |
| 2013 | 2013-0027 | Stonehouse ES | 37.3938760000000 | -76.7928410000000 | WC000005 | No | No | Yes | 05/30/2013 | Partially submerged pipe |
| 2013 | 2013-0028 | Stonehouse ES | 36.3940220000000 | -76.7924410000000 | WC000006 | No | No | Yes | 05/30/2013 | |
| 2013 | 2013-0029 | Lafayette HS | 36.3190960000000 | -76.7644830000000 | PC205002 | No | No | Yes | 05/30/2013 | |
| 2013 | 2013-0030 | Lafayette HS | 36.3181500000000 | -76.7649730000000 | PC205005 | No | No | Yes | 05/30/2013 | |

For MS4 Program Plan Items 3.4, 6.4

Municipal Operations Analysis

Municipal Operations Analysis (MOA); James City County/JCSA Operational Area: 8-26-2013

| <u>Operation</u> | <u>Score</u> |
|--|---------------------|
| MO-1 Hotspot Facility Management (-12 points possible) | -1 |
| MO-2 Construction Project Management (-12 points possible) | -1 |
| MO-3 Street Repair Maintenance (-10 points possible) | NA |
| MO-4 Street Sweeping (-10 points possible) | 0 |
| MO-5 Storm Drain Maintenance (-8 points possible) | -5 |
| MO-6 Stormwater Hotline Response (-10 points possible) | -2 |
| MO-7 Park and Landscape Maintenance (-10 points possible) | -3 |
| MO-8 Residential Stewardship (-10 points possible) | -2 |
| MO-9 Stormwater Management Practice Maintenance(-10 points possible) | 0 |
| *MO-10 Employee Training (-8 points possible) | 0 |
| Subtotal All Municipal Operations: | -14 |
| Available Points | +100 |
| Total Score FY13 (PY4): | 86 |

Score : 80-89 Your community has a number of the elements of a pollution prevention/good housekeeping program in place, but could use some tweaking in some areas. Revisit the analysis to determine where these improvements are needed.

Scoring History

| | |
|---------|-----------|
| FY 2009 | 57 points |
| FY2010 | 69 points |
| FY2011 | 70 points |
| FY2012 | 73 points |



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
County Engineer



| Incident Number | Incident Date | Alarm Time | Location | Primary Station | Incident Type |
|-------------------------------|---------------|------------|-------------------|-----------------|--|
| James-City County Fire | | | | | |
| 0006616 | 09/15/2012 | 18:46 | POCAHONTAS TRL | 2 | 413 Oil or other combustible liquid spill |
| Total | | | | | 1 |

| Search Criteria | |
|-------------------------|--|
| Dates | From 07/01/2012 To 07/01/2013 (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

In reviewing this report only 4 quarts of oil was spilled and not documentation that anything entered a storm drain



| Incident Number | Incident Date | Alarm Time | Location | Primary Station | Incident Type |
|-------------------------------|---------------|------------|---------------------|-----------------|--|
| James-City County Fire | | | | | |
| 0007863 | 11/05/2012 | 20:31 | 112 BRADY DR | 5 | 411 Gasoline or other flammable liquid spill |
| 0006100 | 08/27/2012 | 08:07 | 4455 JOHN TYLER HWY | 3 | 411 Gasoline or other flammable liquid spill |
| 0005664 | 08/10/2012 | 15:48 | 4601 IRONBOUND RD | 4 | 411 Gasoline or other flammable liquid spill |
| 0005033 | 07/18/2012 | 16:13 | 4002 IRONBOUND RD | 3 | 411 Gasoline or other flammable liquid spill |
| 0004790 | 07/09/2012 | 10:13 | 4805 COURTHOUSE ST | 3 | 411 Gasoline or other flammable liquid spill |
| Total | | | | | 5 |

| Search Criteria | |
|-------------------------|--|
| Dates | From 07/01/2012 To 06/30/2013 (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

I reviewed the above listed reports and there is no documentation stating that any fuel got into storm drains. The total amount of gasoline spilled was less than 15 gallons in the 5 reports listed above.



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

| Search Criteria | |
|------------------|--|
| Dates | From 07/01/2012 To 07/01/2013 (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

This report indicates that there were no incidents in this time frame involving a chemical spill or leak



| Incident Type | Count | % of Incidents | Est. Property Loss | Est. Content Loss | Total Est. Loss | % of Losses |
|---|-------------|----------------|-----------------------|---------------------|-----------------------|---------------|
| 1 Fire | | | | | | |
| Building fire (111) | 31 | 0.54% | \$898,910.00 | \$233,850.00 | \$1,132,760.00 | 85.86% |
| Fires in structure other than in a building (112) | 2 | 0.04% | \$100.00 | \$110.00 | \$210.00 | 0.02% |
| Cooking fire, confined to container (113) | 16 | 0.28% | \$100.00 | \$935.00 | \$1,035.00 | 0.08% |
| Chimney or flue fire, confined to chimney or flue (114) | 4 | 0.07% | \$4,000.00 | \$0.00 | \$4,000.00 | 0.30% |
| Fuel burner/boiler malfunction, fire confined (116) | 1 | 0.02% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Trash or rubbish fire, contained (118) | 2 | 0.04% | \$0.00 | \$50.00 | \$50.00 | 0.00% |
| Fire in motor home, camper, recreational vehicle (122) | 3 | 0.05% | \$10,000.00 | \$400.00 | \$10,400.00 | 0.79% |
| Mobile property (vehicle) fire, other (130) | 3 | 0.05% | \$5,300.00 | \$700.00 | \$6,000.00 | 0.45% |
| Passenger vehicle fire (131) | 16 | 0.28% | \$127,000.00 | \$2,500.00 | \$129,500.00 | 9.82% |
| Water vehicle fire (134) | 1 | 0.02% | \$2,000.00 | \$0.00 | \$2,000.00 | 0.15% |
| Camper or recreational vehicle (RV) fire (137) | 2 | 0.04% | \$12,000.00 | \$0.00 | \$12,000.00 | 0.91% |
| Natural vegetation fire, other (140) | 3 | 0.05% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Forest, woods or wildland fire (141) | 2 | 0.04% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Brush or brush-and-grass mixture fire (142) | 14 | 0.25% | \$200.00 | \$200.00 | \$400.00 | 0.03% |
| Grass fire (143) | 2 | 0.04% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Outside rubbish fire, other (150) | 1 | 0.02% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Outside rubbish, trash or waste fire (151) | 6 | 0.11% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Dumpster or other outside trash receptacle fire (154) | 4 | 0.07% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Special outside fire, other (160) | 3 | 0.05% | \$3,500.00 | \$500.00 | \$4,000.00 | 0.30% |
| Outside equipment fire (162) | 1 | 0.02% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| | 117 | 2.08% | \$1,063,110.00 | \$239,245.00 | \$1,302,355.00 | 98.71% |
| 2 Overpressure Rupture, Explosion, Overheat(no fire) | | | | | | |
| Excessive heat, scorch burns with no ignition (251) | 2 | 0.04% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| | 2 | 0.04% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| 3 Rescue & Emergency Medical Service Incident | | | | | | |
| Medical assist, assist EMS crew (311) | 84 | 1.47% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| EMS call, excluding vehicle accident with injury (321) | 3444 | 60.39% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Motor vehicle accident with injuries (322) | 206 | 3.61% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| MVA Multi Vehicle (322A) | 1 | 0.02% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Motor vehicle/pedestrian accident (MV Ped) (323) | 8 | 0.14% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Motor vehicle accident with no injuries. (324) | 129 | 2.26% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Extrication of victim(s) from vehicle (352) | 2 | 0.04% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Removal of victim(s) from stalled elevator (353) | 3 | 0.05% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Trench/below-grade rescue (354) | 1 | 0.02% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Swimming/recreational water areas rescue (361) | 1 | 0.02% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Watercraft rescue (365) | 3 | 0.05% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Rescue or EMS standby (381) | 35 | 0.61% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| | 3917 | 68.68% | \$0.00 | \$0.00 | \$0.00 | 0.00% |

| 4 Hazardous Condition (No Fire) | | | | | | |
|---|------------|--------------|-------------------|-------------------|-------------------|--------------|
| Combustible/flammable gas/liquid condition, other (410) | 1 | 0.02% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Gasoline or other flammable liquid spill (411) | 6 | 0.11% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Gas leak (natural gas or LPG) (412) | 28 | 0.49% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Oil or other combustible liquid spill (413) | 1 | 0.02% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Chemical hazard (no spill or leak) (421) | 2 | 0.04% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Carbon monoxide incident (424) | 1 | 0.02% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Heat from short circuit (wiring), defective/worn (441) | 10 | 0.18% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Overheated motor (442) | 13 | 0.23% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Breakdown of light ballast (443) | 1 | 0.02% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Power line down (444) | 23 | 0.40% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Arcing, shorted electrical equipment (445) | 35 | 0.61% | \$0.00 | \$1,000.00 | \$1,000.00 | 0.08% |
| Building or structure weakened or collapsed (461) | 1 | 0.02% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Aircraft standby (462) | 8 | 0.14% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Vehicle accident, general cleanup (463) | 1 | 0.02% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| | 131 | 2.32% | \$0.00 | \$1,000.00 | \$1,000.00 | 0.08% |
| 5 Service Call | | | | | | |
| Person in distress, other (510) | 5 | 0.09% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Water problem, other (520) | 2 | 0.04% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Water or steam leak (522) | 6 | 0.11% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Smoke or odor removal (531) | 13 | 0.23% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Public service assistance, other (550) | 5 | 0.09% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Assist police or other governmental agency (551) | 18 | 0.32% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Police matter (552) | 12 | 0.21% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Public service (553) | 181 | 3.17% | \$5,000.00 | \$0.00 | \$5,000.00 | 0.38% |
| Assist invalid (554) | 170 | 2.98% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Defective elevator, no occupants (555) | 1 | 0.02% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Unauthorized burning (561) | 35 | 0.61% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Cover assignment, standby, moveup (571) | 15 | 0.26% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| | 463 | 8.13% | \$5,000.00 | \$0.00 | \$5,000.00 | 0.38% |
| 6 Good Intent Call | | | | | | |
| Dispatched and cancelled en route (611) | 303 | 5.31% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Wrong location (621) | 4 | 0.07% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| No incident found on arrival at dispatch address (622) | 113 | 1.98% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Authorized controlled burning (631) | 7 | 0.12% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Steam, other gas mistaken for smoke, other (650) | 2 | 0.04% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Smoke scare, odor of smoke (651) | 25 | 0.44% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Steam, vapor, fog or dust thought to be smoke (652) | 7 | 0.12% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Smoke from barbecue, tar kettle (653) | 2 | 0.04% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| EMS call, party transported by non-fire agency (661) | 2 | 0.04% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| HazMat release investigation w/no HazMat (671) | 9 | 0.16% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| | 474 | 8.32% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| 7 False Alarm & False Call | | | | | | |
| False alarm or false call, other (700) | 1 | 0.02% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Municipal alarm system, malicious false alarm (711) | 1 | 0.02% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Local alarm system, malicious false alarm (715) | 4 | 0.07% | \$0.00 | \$0.00 | \$0.00 | 0.00% |

| | | | | | | |
|--|------------|--------------|--|---------------|--------------------|--------------|
| Bomb scare - no bomb (721) | 4 | 0.07% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| System malfunction, other (730) | 3 | 0.05% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Sprinkler activation due to malfunction (731) | 12 | 0.21% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Smoke detector activation due to malfunction (733) | 41 | 0.72% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Heat detector activation due to malfunction (734) | 2 | 0.04% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Alarm system sounded due to malfunction (735) | 80 | 1.40% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| CO detector activation due to malfunction (736) | 16 | 0.28% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Sprinkler activation, no fire - unintentional (741) | 1 | 0.02% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Smoke detector activation, no fire - unintentional (743) | 53 | 0.93% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Detector activation, no fire - unintentional (744) | 20 | 0.35% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Alarm system activation, no fire - unintentional (745) | 136 | 2.38% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Carbon monoxide detector activation, no CO (746) | 6 | 0.11% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| | 380 | 6.67% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| 8 Severe Weather & Natural Disaster | | | | | | |
| Wind storm, tornado/hurricane assessment (813) | 5 | 0.09% | \$11,000.00 | \$0.00 | \$11,000.00 | 0.83% |
| Lightning strike (no fire) (814) | 8 | 0.14% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| | 13 | 0.23% | \$11,000.00 | \$0.00 | \$11,000.00 | 0.83% |
| 9 Special Incident Type | | | | | | |
| Special type of incident, other (900) | 203 | 3.56% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Received Mutual Aid - EMS Call (900E) | 2 | 0.04% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Citizen complaint (911) | 1 | 0.02% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| | 206 | 3.62% | \$0.00 | \$0.00 | \$0.00 | 0.00% |
| Total Incident Count: 5703 | | | Total Est. Loss: \$1,319,355.00 | | | |

| Search Criteria | |
|----------------------|--|
| Dates | From 06/01/2012 To 07/01/2013 (mm/dd/yyyy) |
| Service | James-City County Fire |
| Staff | All |
| Apparatus | All |
| Station | All |
| 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) |
|--------|---------------|--------|---|---------------|--------------------------|----------------------------------|---------------------------------|
| 103424 | 7/14/2012 | LS 4-7 | Lightning Strike at Lift Station - knocked out auto transfer switch | 7/16/2012 | 1400 | 0 | -1 |
| 103430 | 7/20/2012 | LS 1-6 | Rain | 7/21/2012 | -1/3,618 gal.WW | 0 | -1 |
| 103431 | 7/20/2012 | LS 6-8 | Rain | 7/21/2012 | -1/2,202 gal.WW | 0 | -1 |
| 103432 | 7/20/2012 | LS 3-1 | Rain | 7/21/2012 | -1/1,168 gal.WW | 0 | -1 |
| 103434 | 7/20/2012 | LS 3-8 | Rain | 7/21/2012 | -1/6,081 gal.WW | 0 | -1 |
| 103435 | 7/20/2012 | LS 5-4 | Rain | 7/21/2012 | -1/3,700 gal.WW | 0 | -1 |
| 103436 | 7/20/2012 | LS 6-1 | Rain | 7/21/2012 | -1/509 gal.WW | 0 | -1 |
| 103450 | 8/3/2012 | LS 8-6 | Tree fell across pipe bridge during wind storm | 8/3/2012 | 900 | 0 | 0 |
| 103530 | 9/24/2012 | LS 2-4 | Vandels placed sticks in ACOP blocking sewer | 9/24/2012 | 250 | 0 | 0 |
| 103552 | 10/29/2012 | LS 6-2 | Hurricane Sandy | 10/29/2012 | -1/30,920 gal.WW | 0 | -1 |
| 103553 | 10/29/2012 | LS 5-4 | Hurricane Sandy | 10/29/2012 | -1 /106,200 gal.WW | 0 | -1 |
| 103554 | 10/29/2012 | LS 9-7 | Hurricane Sandy | 10/29/2012 | -1/1,213 gal.WW | 0 | -1 |
| 103555 | 10/29/2012 | LS 3-3 | Hurricane Sandy | 10/29/2012 | -1/5,997 gal.WW | 0 | -1 |
| 103556 | 10/29/2012 | LS 4-8 | Hurricane Sandy | 10/29/2012 | -1/521 gal.WW | 0 | -1 |
| 103588 | 10/29/2012 | LS 4-1 | Hurricane Sandy | 10/29/2012 | -1/1,744 gal.WW | 0 | -1 |
| 103589 | 10/29/2012 | LS 6-1 | Hurricane Sandy | 10/29/2012 | -1/9,373 gal.WW | 12,000 | -1 |
| 103590 | 10/29/2012 | LS 6-8 | Hurricane Sandy | 10/29/2012 | -1/25,956 gal.WW | 0 | -1 |
| 103623 | 12/20/2012 | LS 4-2 | Force main seperation | 12/21/2012 | 1125 | 800 | 325 |
| 103641 | 1/18/2013 | LS 7-1 | Force main defect/failure | 1/18/2013 | 600 | 600 | 0 |
| 103658 | 2/7/2013 | LS 1-1 | Grease blockage | 2/8/2013 | 4,800 | 0 | 4,800 |
| 103684 | 3/12/2013 | LS 1-5 | Grease blockage | 3/12/2013 | 1,200 | 0 | -1 |
| 103685 | 3/13/2013 | LS 7-6 | FM struck by bore contractor. Force main was previously not known to exist. | 3/13/2013 | 3,540 | 500 | 0 |
| 103725 | 5/23/2013 | LS 4-8 | Force Main cracked | 5/23/2013 | 4,000 | 1,000 | 3,000 |
| 103732 | 5/23/2013 | LS 4-7 | Rain | 5/24/2013 | -1/11,717 gal.WW | 0 | -1 |
| 103733 | 5/23/2013 | LS 6-8 | Rain | 5/24/2013 | -1/8,789 gal.WW | 0 | -1 |
| 103734 | 5/23/2013 | LS 1-8 | Rain | 5/24/2013 | -1/4,590 gal.WW | 0 | -1 |
| 103735 | 5/23/2013 | LS 1-9 | Rain | 5/24/2013 | -1/1,916 gal.WW | 0 | -1 |
| 103736 | 5/23/2013 | LS 4-1 | Rain | 5/24/2013 | -1/2,032 gal.WW | 0 | -1 |
| 103737 | 5/23/2013 | LS 4-2 | Rain | 5/24/2013 | -1/1,188 gal.WW | 0 | -1 |
| 103738 | 5/23/2013 | LS 6-1 | Rain | 5/24/2013 | -1/11,152 gal.WW | 0 | -1 |
| 103739 | 5/23/2013 | LS 6-2 | Rain | 5/24/2013 | -1/40,306 gal.WW | 0 | -1 |

| | | | | | | | |
|--------|-----------|---------|---|-----------|-----------------------|--------|----|
| 103740 | 5/23/2013 | LS 10-4 | Rain | 5/24/2013 | -1/4,443 gal.WW | 0 | -1 |
| 103741 | 5/23/2013 | LS 4-8 | Rain | 5/24/2013 | -1/8,182 gal.WW | 0 | -1 |
| 103742 | 5/23/2013 | LS 3-8 | Rain | 5/24/2013 | -1/1,792 gal.WW | 0 | -1 |
| 103743 | 5/23/2013 | LS 3-1 | Rain | 5/24/2013 | -1/2,346 gal.WW | 0 | -1 |
| 103744 | 5/23/2013 | LS 1-3 | Rain | 5/24/2013 | -1/40 gal.WW | 0 | -1 |
| 103745 | 5/23/2013 | LS 5-4 | Rain | 5/24/2013 | -1/9,560 gal.WW | 0 | -1 |
| 103746 | 5/23/2013 | LS 3-6 | NO SPILL - RESCINDED | 5/24/2013 | 0 | 0 | 0 |
| 103748 | 5/23/2013 | LS 3-3 | NO SPILL - RESCINDED | 5/24/2013 | 0 | 0 | 0 |
| 103750 | 5/23/2013 | LS 1-5 | Rain | 5/30/2013 | -1/61,090 gal.WW | 0 | -1 |
| 103756 | 6/7/2013 | LS 6-8 | Tropical Storm Andrea | 6/7/2013 | -1/86,417 gal.WW | 0 | -1 |
| 103757 | 6/7/2013 | LS 6-2 | Tropical Storm Andrea | 6/7/2013 | -1/56,571 gal.WW | 0 | -1 |
| 103758 | 6/7/2013 | LS 6-1 | Tropical Storm Andrea | 6/7/2013 | -1/35,797 gal.WW | 0 | -1 |
| 103759 | 6/7/2013 | LS 3-3 | Tropical Storm Andrea | 6/7/2013 | -1 /107,778 gal.WW | 0 | -1 |
| 103760 | 6/7/2013 | LS 4-8 | Tropical Storm Andrea | 6/7/2013 | -1/20,019 gal.WW | 0 | -1 |
| 103761 | 6/7/2013 | LS 3-1 | Tropical Storm Andrea | 6/7/2013 | -1/58,254 gal.WW | 0 | -1 |
| 103762 | 6/7/2013 | LS 9-7 | Tropical Storm Andrea | 6/7/2013 | -1/20,400 gal.WW | 0 | -1 |
| 103763 | 6/7/2013 | LS 10-4 | Tropical Storm Andrea | 6/7/2013 | -1/27,643 gal.WW | 0 | -1 |
| 103764 | 6/7/2013 | LS 5-4 | Tropical Storm Andrea | 6/7/2013 | -1 /151,978 gal.WW | 0 | -1 |
| 103765 | 6/7/2013 | LS 4-7 | Tropical Storm Andrea | 6/7/2013 | -1/15,701 gal.WW | 0 | -1 |
| 103776 | 6/7/2013 | LS 4-1 | Tropical Storm Andrea | 6/10/2013 | -1/7,955 gal.WW | 0 | -1 |
| 103778 | 6/7/2013 | LS 1-5 | Tropical Storm Andrea | 6/11/2013 | -1 /529,508 gal.WW | 0 | -1 |
| 103785 | 6/23/2013 | LS 9-9 | Not JCSA - Contractor Issue Possible blockage in gravity main | 6/24/2013 | 13,000 | 12,000 | -1 |

**Sanitary Sewer Overflow Consent Order Accomplishments
for July 1, 2012 to June 30, 2013 – MS4 PY5**

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 including:
 - Flow and rainfall monitoring.
 - Identification of Sanitary Sewer Evaluation Survey (SSES) basins through hydrologic and hydraulic modeling and other data observations.
 - Inspection of over 6,000 manholes within SSES basins.
 - Smoke testing of 100% of the sewer mains within SSES basins.
 - Performance of limited wet weather investigations in select SSES basins.
 - Performance of Night Flow Isolation metering in select SSES basins.
 - Performance of flow monitoring with portable meters within select SSES basins to identify sub-areas with high inflow and infiltration.
 - Performance of closed circuit television inspection in SSES basins to include 100% of pipes installed prior to 1980 and at least 30% of pipes in basins where the pipes were installed after 1980.
 - Development of a calibrated hydraulic model of the JCSA sanitary sewer system and performance of a capacity analysis assuming 2-, 5-, and 10-year rainfall events and 2030 projected populations.
- HRSD received approval from the Localities, EPA and DEQ to evaluate potential benefits of Regionalizing and consolidating all Locality sewage collection and conveyance systems under HRSD ownership. The study is to be completed by August 1, 2013. Completion dates for the Rehabilitation Plans and Regional Wet Weather Management Plan (RWWMP) were extended as follows:
 - If the Regionalization Study does not recommend consolidation under one entity (HRSD) the Rehabilitation Plans and RWWMP would be due April 30, 2015.
 - If the Regionalization Study recommends consolidation but the majority of the Localities or HRSD reject that approach the Rehabilitation Plans and RWWMP would be due October 1, 2015.
 - If the Regionalization Study recommends consolidation and the Localities and HRSD concur the Rehabilitation Plans and RWWMP would be due October 1, 2016.

Activities in Waterways Impaired for Bacteria

- Powhatan Creek
 - Bids were received and a construction contract was let 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). Project is to be completed in November 2013 and should significantly reduce I/I and add structural integrity to the old fiberglass pipe.

For MS4 Program Plan Item 3.7

- In-house field staff made pipe or manhole repairs that eliminated significant sources of I/I.
- Mill Creek
 - In-house field staff made pipe or manhole repairs that eliminated significant sources of I/I.
- Skiffes Creek
 - In-house field staff made pipe or manhole repairs that eliminated significant sources of I/I.

Appendix C-4

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



**James City County
Engineering and Resource Protection Division
MS4 Permit Report Assistance (FY13 – PY5)**

| BMP # | Item | Total in FY13 – PY5 | Supporting Information |
|-------|--|---|--|
| 4.1 | Number of E&SC Inspections | Development: 1,616 Single-Family: <u>1,493</u> Total 3,109 | See attached summary tables. |
| 4.1 | Number of E&SC Plan Reviews | Development: 147 Single-Family: <u>354</u> Total 501 | See attached summary tables. For development, first review E&S, drainage and SWM plans only. |
| 4.1 | Date of Last Finding of E&SC Control Program Consistency by Virginia DCR | Review: September 2011 Letter Received: 04/04/2012 (Bay Act – compliant 06/27/11) (Substantive Progress Application accepted for VSMP program on August 6, 2013) | See attached letters. |
| 4.1 | Number of Contacts from Citizens, E&SC Program | Total: 59 | See attached citizen complaint tracking log. |
| 4.1 | Number of Site Visits in Response to Citizen Contacts, E&SC Program | Total: 59 | See attached citizen complaint tracking log. |
| 4.1 | Number of Enforcement Actions (E&SC Program) | <u>Development:</u> Inspection Reports: 50 Notices to Comply: <u>4</u> 54 <u>Single-Family:</u> Notices to Comply 330 Stop work orders: <u>17</u> 347 No E&S Civil Charges in FY13. Two CBPA civil charges which total \$4,300. CBV-11-16 on March 26, 2013 and CBV-12-027 on May 28, 2013. Other – 26 Reports of Unauthorized Activities (RUAs); 10 were associated with E&S program activities. | See attached summary and the HRPDC-PARS report. |

| BMP # | Item | Total in FY13 – PY5 | Supporting Information |
|----------|---|--|--|
| 4.2, 5.3 | VSMP – Number of Permit Applications Received | Total: 37 | Assume “VSMP number of permit applications received” means number of Land-Disturbing Permits Issued. See attached summaries and explanation of VSMP processing. |
| 4.3 | Training – Certifications Obtained by Staff (Plan Review, Inspector, Program Administration, Combined Administration) (Virginia Soil & Water Conservation Board and Virginia DCR; now transferred to the State Water Control Board & Virginia DEQ) | <u>Recertifications</u> Program Admin: 1 renewal Inspector: 1 renewal Plan Review: 1 renewal Combined Admin: 1 renewal Professional License: 2 renewals (Note: Most all County staff has taken the basic stormwater management in VA course, offered by the DEQ in June/July 2013, which is first step to securing certifications of competence under the VSMP program.) | Staff total of 16 current certificates of competence including one program administrator; 5 inspector; 4 plan review; 2 combined administrator certifications. Also, 2 professional engineer licenses, one landscape architect license and one Engineer-in-Training designation. See attached table. |
| 4.4 | Tracking and Reporting of Land-Disturbing Permits | <u>VAHU6 HUC Codes</u> JL28 - 4 permits (5.78 acres) JL29- 3 permits (24.14 acres) JL30 - 1 permit (0.29 acres) JL31 - 13 permits (50.00 acres) JL33 - 3 permits (31.42 acres) JL34 - 2 permits (1.25 acres) JL35 - 7 permits (8.20 acres) YO62 - <u>4 permits (4.40 acres)</u> 37 permits(125.48 acres) | See attached tables and summary information. |
| 5.4 | Number of Declaration of Covenants – Inspection/Maintenance Agreements | 20 agreements secured of 37 land-disturbing permits issued. | See attached list. I/M agreements are required for storm conveyances and/or BMPs. Some cases would not have I/M agreements, if 1) no storm or BMPs were proposed; 2) E&SC only projects, 3) plan amendments (unless did not have a parent agreement) or 4) County/school projects. |



COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

203 Governor Street
Richmond, Virginia 23219-2010
(804) 786-1712

April 4, 2012

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

Environmental Division

APR 13 2012

RECEIVED

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 Recreation 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 handwritten signature in cursive script that reads "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

**Land Disturbing Permits
for July 1, 2012 to June 30, 2013 - PY5**

| Count | HUC | Watershed | Number of Permits | No. of Acres Treated |
|--------|------|--------------------|-------------------|----------------------|
| 1 | JL26 | Diascund Creek | 0 | 0.00 |
| 2 | JL27 | Diascund Creek | 0 | 0.00 |
| 3 | JL28 | Chickahominy River | 4 | 5.78 |
| 4 | JL29 | Chickahominy River | 3 | 24.14 |
| 5 | JL30 | James River | 1 | 0.29 |
| 6 | JL31 | Powhatan Creek | 13 | 50.00 |
| 8 | JL33 | Mill Creek | 3 | 31.42 |
| 9 | JL34 | College Creek | 2 | 1.25 |
| 10 | JL35 | James River | 7 | 8.20 |
| 11 | YO62 | Ware Creek | 4 | 4.40 |
| 12 | YO63 | York River | 0 | 0.00 |
| 13 | YO65 | York River | 0 | 0.00 |
| 14 | YO68 | York River | 0 | 0.00 |
| Totals | | | 37 | 125.48 |



**E & S Data
James City
County
Jul 2012 to Jun 2013**

Approved E&S Plans

TOTAL: 37

| | HUC Codes | | | | | | | | | | | | | Total | |
|--------------------|-----------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|
| | JL26 | JL27 | JL28 | JL29 | JL30 | JL31 | JL33 | JL34 | JL35 | YO62 | YO63 | YO65 | YO67 | | YO68 |
| July, 2012 | | | 1 | | | | | | 1 | 1 | | | | | 3 |
| August, 2012 | | | | | | | | | 1 | | | | | | 1 |
| September, 2012 | | | | | | 1 | | | 1 | | | | | | 2 |
| October, 2012 | | | | | | 1 | | 1 | | 1 | | | | | 3 |
| November, 2012 | | | | | | 1 | | | | | | | | | 1 |
| December, 2012 | | | | | | 2 | 1 | 1 | 1 | | | | | | 5 |
| January, 2013 | | | | | | 2 | | | 2 | | | | | | 4 |
| February, 2013 | | | | | | 2 | | | | | | | | | 2 |
| March, 2013 | | | | | | 1 | 1 | | | | | | | | 2 |
| April, 2013 | | | 1 | | | 1 | | | | | 1 | | | | 3 |
| May, 2013 | | | 1 | 1 | 1 | 2 | 1 | | 1 | 1 | | | | | 8 |
| June, 2013 | | | 1 | 2 | | | | | | | | | | | 3 |
| HUC Totals: | | | 4 | 3 | 1 | 13 | 3 | 2 | 7 | 4 | | | | | 37 |

Disturbed Acres on Approved E&S Plans

TOTAL: 125.48

HUC Codes



**E & S Data
James City
County**

Jul 2012 to Jun 2013

| | JL26 | JL27 | JL28 | JL29 | JL30 | JL31 | JL33 | JL34 | JL35 | YO62 | YO63 | YO65 | YO67 | YO68 | Total |
|--------------------|------|------|------|-------|------|-------|-------|------|------|------|------|------|------|------|--------|
| July, 2012 | | | 2.99 | | | | | | 1.44 | 0.06 | | | | | 4.49 |
| August, 2012 | | | | | | | | | 0.06 | | | | | | 0.06 |
| September, 2012 | | | | | | 1.8 | | | 0.44 | | | | | | 2.24 |
| October, 2012 | | | | | | 0.25 | | 0.25 | | 0.19 | | | | | 0.69 |
| November, 2012 | | | | | | 7.07 | | | | | | | | | 7.07 |
| December, 2012 | | | | | | 2.01 | 1.17 | 1 | 0.62 | | | | | | 4.8 |
| January, 2013 | | | | | | 9.77 | | | 5.46 | | | | | | 15.23 |
| February, 2013 | | | | | | 10.22 | | | | | | | | | 10.22 |
| March, 2013 | | | | | | 5.51 | 29.95 | | | | | | | | 35.46 |
| April, 2013 | | | 1.5 | | | 0.3 | | | | 1.85 | | | | | 3.65 |
| May, 2013 | | | 0.21 | 0.82 | 0.29 | 13.07 | 0.3 | | 0.18 | 2.3 | | | | | 17.17 |
| June, 2013 | | | 1.08 | 23.32 | | | | | | | | | | | 24.4 |
| HUC Totals: | | | 5.78 | 24.14 | 0.29 | 50 | 31.42 | 1.25 | 8.2 | 4.4 | | | | | 125.48 |

E&S Inspections

TOTAL: 1616

HUC Codes



**E & S Data
James City
County**

Jul 2012 to Jun 2013

| | JL26 | JL27 | JL28 | JL29 | JL30 | JL31 | JL33 | JL34 | JL35 | YO62 | YO63 | YO65 | YO67 | YO68 | Total |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| July, 2012 | | 1 | 24 | 5 | 10 | 51 | 6 | 6 | 7 | 26 | | 5 | | | 141 |
| August, 2012 | | 2 | 26 | 6 | 9 | 80 | 10 | 3 | 12 | 21 | | 7 | | | 176 |
| September, 2012 | | 2 | 20 | 11 | 10 | 58 | 8 | 4 | 10 | 14 | | 3 | | | 140 |
| October, 2012 | 0 | 0 | 22 | 11 | 11 | 52 | 2 | 2 | 4 | 1 | | 0 | | | 105 |
| November, 2012 | | | 22 | 10 | 12 | 52 | 2 | 4 | | 25 | | 4 | | | 131 |
| December, 2012 | 0 | 0 | 19 | 9 | 12 | 35 | 4 | 1 | 0 | 26 | | 3 | | | 109 |
| January, 2013 | | | 19 | 10 | 10 | 81 | 2 | 2 | 5 | | | 1 | | | 130 |
| February, 2013 | | | 20 | 8 | 12 | 75 | 11 | 2 | 12 | 2 | | | | | 142 |
| March, 2013 | | | 15 | 10 | 13 | 83 | 7 | 5 | 14 | 7 | | | | | 154 |
| April, 2013 | | 2 | 21 | 7 | 5 | 64 | 6 | 5 | 13 | 23 | | 2 | | | 148 |
| May, 2013 | | | 22 | 4 | 5 | 65 | 4 | 4 | 4 | 14 | | 2 | | | 124 |
| June, 2013 | | | 31 | 5 | 6 | 53 | 2 | 5 | 4 | 9 | | 1 | | | 116 |
| HUC Totals: | 0 | 7 | 261 | 96 | 115 | 749 | 64 | 43 | 85 | 168 | | 28 | | | 1616 |

E&S Enforcement Actions

TOTAL: 54

HUC Codes



**E & S Data
James City
County**

Jul 2012 to Jun 2013

| | JL26 | JL27 | JL28 | JL29 | JL30 | JL31 | JL33 | JL34 | JL35 | YO62 | YO63 | YO65 | YO67 | YO68 | Total |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| July, 2012 | | 0 | 4 | 0 | 1 | 6 | 0 | 0 | 0 | 0 | | 0 | | | 11 |
| August, 2012 | | 0 | 3 | 0 | 1 | 6 | 1 | 0 | 0 | 0 | | 0 | | | 11 |
| September, 2012 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | | | 0 |
| October, 2012 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | | | 0 |
| November, 2012 | | | 0 | 0 | 0 | 1 | 0 | 0 | | 0 | | 0 | | | 1 |
| December, 2012 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | | | 0 |
| January, 2013 | | | 2 | | 1 | | | | | | | | | | 3 |
| February, 2013 | | | 1 | 0 | 0 | 3 | 0 | 0 | 1 | 1 | | | | | 6 |
| March, 2013 | | | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | | | | | 3 |
| April, 2013 | | 0 | 0 | 1 | 0 | 6 | 0 | 0 | 1 | 2 | | 0 | | | 10 |
| May, 2013 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | | | 0 |
| June, 2013 | | | 4 | 0 | 2 | 2 | 0 | 0 | 0 | 1 | | 0 | | | 9 |
| HUC Totals: | 0 | 0 | 15 | 1 | 5 | 24 | 2 | 0 | 3 | 4 | | 0 | | | 54 |

Appendix C-5

Exhibits for Minimum Control Measure #5 – Post-Construction Stormwater Management in New Development and Re- development

| Date | Address | Watershed | Rain Garden Size (sq ft) | Impervious treated (sq ft) | Pervious Treated (sq ft) | Total Area Treated (sq ft) |
|----------|------------------------|----------------|--------------------------|----------------------------|--------------------------|----------------------------|
| 08/25/12 | 119 Hartwell Perry Way | Powhatan Creek | 96 | 1133 | 1500 | 2633 |
| 09/09/12 | 3509 Longwood Drive | Ware Creek | 160 | 2760 | 1000 | 3760 |
| 09/24/12 | 6312 Glenwilton Lane | Powhatan Creek | 95 | 1136 | 1502 | 2638 |
| 10/12/12 | 3504 Neal Court | Powhatan Creek | 155 | 1883 | 1000 | 2883 |
| 02/26/13 | 105 Lawnes Circle | James River | 88 | 1068 | 3000 | 4068 |
| 03/08/13 | PO Box 348 | College Creek | 490 | 10000 | 5000 | 15000 |
| 04/12/13 | 201 Panmure | Powhatan Creek | 104 | 1300 | 1250 | 2550 |
| 05/17/13 | 100 Brancaster | Powhatan Creek | 182 | 2352 | 2058 | 4410 |
| 05/29/13 | 110 James Bray | Powhatan Creek | 110 | 1750 | 0 | 1750 |
| 05/16/13 | 125 Mahogany Run | Powhatan Creek | 264 | 2380 | 0 | 2380 |
| 05/22/13 | 4345 Landfall Drive | Powhatan Creek | 110 | 344 | 4779 | 5123 |
| 03/30/13 | 156 Old Field Road | Mill Creek | 80.5 | 1522 | 4000 | 5522 |
| 05/15/13 | 2700 Two Rivers Road | James River | 230 | 3000 | 3200 | 6200 |
| 06/08/13 | 110 Dover Road | Mill Creek | 216 | 2744 | 800 | 3544 |
| 05/31/13 | 316 The Maine West | James River | 160 | 2000 | 1500 | 3500 |
| 06/24/13 | 4808 COTSWOLD CT | Powhatan Creek | 190 | 1000 | 5000 | 6000 |
| 06/30/13 | 104 NORGE LANE | Yarmouth Creek | 255 | 4050 | 0 | 4050 |
| 06/24/13 | 138 ALWOODLEY | Powhatan Creek | 65 | 1000 | 800 | 1800 |

| | | | | |
|---------|-------------|-------|-------|-------|
| Total | 3050.5 | 41422 | 36389 | 77811 |
| Average | 169.4722222 | | | |



James City County
Engineering and Resource Protection Division
MS4 Permit Report Assistance (FY13 – PY5)

| BMP # | Item | Total in FY13 – PY5 | Supporting Information |
|-------|--|---|--|
| 4.1 | Number of E&SC Inspections | Development: 1,616 Single-Family: <u>1,493</u> Total 3,109 | See attached summary tables. |
| 4.1 | Number of E&SC Plan Reviews | Development: 147 Single-Family: <u>354</u> Total 501 | See attached summary tables. For development, first review E&S, drainage and SWM plans only. |
| 4.1 | Date of Last Finding of E&SC Control Program Consistency by Virginia DCR | Review: September 2011 Letter Received: 04/04/2012 (Bay Act – compliant 06/27/11) (Substantive Progress Application accepted for VSMP program on August 6, 2013) | See attached letters. |
| 4.1 | Number of Contacts from Citizens, E&SC Program | Total: 59 | See attached citizen complaint tracking log. |
| 4.1 | Number of Site Visits in Response to Citizen Contacts, E&SC Program | Total: 59 | See attached citizen complaint tracking log. |
| 4.1 | Number of Enforcement Actions (E&SC Program) | <u>Development:</u> Inspection Reports: 50 Notices to Comply: <u>4</u> 54 <u>Single-Family:</u> Notices to Comply 330 Stop work orders: <u>17</u> 347 No E&S Civil Charges in FY13. Two CBPA civil charges which total \$4,300. CBV-11-16 on March 26, 2013 and CBV-12-027 on May 28, 2013. Other – 26 Reports of Unauthorized Activities (RUAs); 10 were associated with E&S program activities. | See attached summary and the HRPDC-PARS report. |

| BMP # | Item | Total in FY13 – PY5 | Supporting Information |
|----------|---|--|--|
| 4.2, 5.3 | VSMP – Number of Permit Applications Received | Total: 37 | Assume “VSMP number of permit applications received” means number of Land-Disturbing Permits Issued. See attached summaries and explanation of VSMP processing. |
| 4.3 | Training – Certifications Obtained by Staff (Plan Review, Inspector, Program Administration, Combined Administration) (Virginia Soil & Water Conservation Board and Virginia DCR; now transferred to the State Water Control Board & Virginia DEQ) | <u>Recertifications</u> Program Admin: 1 renewal Inspector: 1 renewal Plan Review: 1 renewal Combined Admin: 1 renewal Professional License: 2 renewals (Note: Most all County staff has taken the basic stormwater management in VA course, offered by the DEQ in June/July 2013, which is first step to securing certifications of competence under the VSMP program.) | Staff total of 16 current certificates of competence including one program administrator; 5 inspector; 4 plan review; 2 combined administrator certifications. Also, 2 professional engineer licenses, one landscape architect license and one Engineer-in-Training designation. See attached table. |
| 4.4 | Tracking and Reporting of Land-Disturbing Permits | <u>VAHU6 HUC Codes</u> JL28 - 4 permits (5.78 acres) JL29- 3 permits (24.14 acres) JL30 - 1 permit (0.29 acres) JL31 - 13 permits (50.00 acres) JL33 - 3 permits (31.42 acres) JL34 - 2 permits (1.25 acres) JL35 - 7 permits (8.20 acres) YO62 - <u>4 permits (4.40 acres)</u> 37 permits(125.48 acres) | See attached tables and summary information. |
| 5.4 | Number of Declaration of Covenants – Inspection/Maintenance Agreements | 20 agreements secured of 37 land-disturbing permits issued. | See attached list. I/M agreements are required for storm conveyances and/or BMPs. Some cases would not have I/M agreements, if 1) no storm or BMPs were proposed; 2) E&SC only projects, 3) plan amendments (unless did not have a parent agreement) or 4) County/school projects. |

BMPs Installed in FY 2013 - James City County, Virginia

| <u>No.</u> | <u>ID Code</u> | <u>Plan No.</u> | <u>HUC</u> | <u>Project Name/Applicant</u> | <u>BMP Type</u> | <u>Drain. Area</u> | <u>DOC - I/M Agree</u> | <u>Dev Type</u> |
|-----------------------------------|----------------|-----------------|------------|---|------------------------|--------------------|------------------------|-----------------|
| 1 | PC 273 | SP-91-04 | JL31 | James City County - MidCounty Park 3793 Ironbound Road (Trail Sta. 7+90.61) | Dry Pond | 7.10 | No | New |
| 2 | MC 070 | SP-68-10 | JL33 | James City County - Fire Administration Building 5087 John Tyler Highway | Dry Swale | 3.10 | No | New |
| 3 | WC 107 | S-48-09 | YO62 | Stonehouse Tract 12 - Phase 1 | Bioretention | 1.72 | Yes | New |
| 4 | WC 108 | S-48-09 | YO62 | Stonehouse Tract 12 - Phase 1 | Wet ED Pond | 1.91 | Yes | New |
| 5 | YR 021 | E&S-21-08 | YO65 | Barlows Pond Dam - Laurel Lake LLWPOA SR646 Newman Road Private Dam | Private Lake | 0.00 | No | N/A |
| 6 | WC 109 | SP-150-06 | YO62 | Jacobs Industrial Center Parcel 2 (Hankins Industrial Park) BMP # 1 | Wet ED Pond | 25.00 | Yes | New |
| 7 | WC 110 | SP-150-06 | YO62 | Jacobs Industrial Center Parcel 2 (Hankins Industrial Park) BMP # 2 | Wet ED Pond | 24.50 | Yes | New |
| 8 | WC 111 | SP-8-09 | YO62 | Stonehouse Amenity H - 9205 Six Mount Zion Road BMP # 1 | Bioretention | 2.24 | Yes | New |
| 9 | WC 112 | SP-8-09 | YO62 | Stonehouse Amenity H - 9205 Six Mount Zion Road BMP # 2 | Infiltration Trench | 0.44 | Yes | New |
| 10 | WC 113 | SP-8-09 | YO62 | Stonehouse Amenity H - 9205 Six Mount Zion Road BMP # 3A/3B | Wet Swales - Detention | 2.30 | Yes | New |
| 11 | PC 274 | S-25-11 | JL31 | New Town Section 7 Phase 10 (MSWMP # A-14) | Wet ED Pond | 32.75 | Yes | New |
| 12 | PC 275 | SP-31-07 | JL31 | Colonies at Williamsburg Timeshares Basin # 2 (Building 4 and 6) | Bioretention | 5.78 | Yes | New |
| 13 | PC 276 | SP-31-07 | JL31 | Colonies at Williamsburg Timeshares Permeable Paving (Clubhouse) | Permeable Paving | 1.00 | Yes | New |
| 14 | PC 277 | SP-31-07 | JL31 | Colonies at Williamsburg Timeshares Basin # 6 (Building 7 and 8) | Bioretention | 0.95 | Yes | New |
| 15 | PC 278 | SP-31-07 | JL31 | Colonies at Williamsburg Timeshares Basin # 7 (Delaware Circle Buildings 8,9,10) | Bioretention | 0.67 | Yes | New |
| 16 | PC 279 | SP-31-07 | JL31 | Colonies at Williamsburg Timeshares Basin # 8 (Buildings 11 and 12) | Bioretention | 1.77 | Yes | New |
| 17 | PC 280 | SP-31-07 | JL31 | Colonies at Williamsburg Timeshares Basin # 12 (Mass. Court, Buildings 13) | Bioretention | 0.71 | Yes | New |
| 18 | PC 281 | SP-31-07 | JL31 | Colonies at Williamsburg Timeshares Basin # 14 (End Mass. Court, Buildings 16 & 17) | Bioretention | 1.20 | Yes | New |
| 19 | PC 282 | SP-31-07 | JL31 | Colonies at Williamsburg Timeshares Basin # 11 (Buildings 53) | Bioretention | 1.67 | Yes | New |
| 20 | PC 283 | SP-31-07 | JL31 | Colonies at Williamsburg Timeshares Basin # 10 (Parking Lot/Tennis Court) | Bioretention | 0.34 | Yes | New |
| 21 | PC 284 | SP-31-07 | JL31 | Colonies at Williamsburg Timeshares Basin # 19 (Building 65 & Tennis Court) | Bioretention | 2.45 | Yes | New |
| 22 | PC 285 | SP-31-07 | JL31 | Colonies at Williamsburg Timeshares Basin # 15 (Harrisburg Court/Building 60) | Bioretention | 4.49 | Yes | New |
| 23 | PC 286 | SP-31-07 | JL31 | Colonies at Williamsburg Timeshares Basin # 18 (Building 61) | Bioretention | 3.85 | Yes | New |
| 24 | JR 070 | S-53-05 | JL35 | Kingsmill Spencers Grant | Wet ED Pond | 25.78 | Yes | New |
| 25 | PC 287 | SP-11-10 | JL31 | WJCC Schools - Jamestown High School Auxillary Gym | Dry Swale | 0.20 | No | New |
| 26 | CR 001 | S-23-07 | JL28 | Uncle's Neck Subdivision - Preserve at Uncles Neck BMP # 1 (Road 28+00R) | Wet ED Pond | 9.50 | Yes | New |
| 27 | CR 002 | SP-115-07 | JL28 | Uncle's Neck Subdivision - Preserve at Uncles Neck Dry Pond (Road 39+00L) | Dry Pond with Forebay | 6.08 | Yes | New |
| 28 | WC 114 | SP-124-06 | YO62 | Weatherly at Whitehall BMP # 2.1 (SWM-02-06) | Wet ED Pond | 12.92 | Yes | New |
| 29 | WC 115 | SP-124-06 | YO62 | Weatherly at Whitehall BMP # 2.2 (SWM-02-06) | Wet ED Pond | 5.42 | Yes | New |
| 30 | WC 116 | SP-143-06 | YO62 | Whitehall Section 1 BMP # 3.2 (SWM-02-06) | Infiltration Basin | 6.74 | Yes | New |
| 31 | WC 117 | S-98-06 | YO62 | Whitehall Section 2 BMP # 1.1 (SWM-02-06) | Wet ED Pond | 18.61 | Yes | New |
| 32 | WC 118 | SP-46-07 | YO62 | Whitehall Section 4/5 BMP # 1.2 (SWM-02-06) | Wet ED Pond | 117.34 | Yes | New |
| 33 | WC 119 | S-98-06 | YO62 | Whitehall Section 2 BMP # 1.3 Pasture Pond (SWM-02-06) | Wet ED Pond | 14.30 | Yes | New |
| 34 | PC 288 | E&S-03-12 | JL31 | James City County - MidCounty Park (Demonstration Rain Garden) | Bioretention | 1.00 | No | New |
| 34 total new BMPs in FY13. | | | | | Total (acres) | 343.82 | | |

Turf Love – Garden Love Update
July 2012 through June 30, 2013

| Task/Activity | Amount |
|--|-----------|
| Property owners interested in rain garden installation | 9 |
| Completed rain gardens | 18 |
| Average proposed rain garden size | 170 SF |
| Total Impervious Treated Area | 41,422 SF |
| Total Pervious Treated Area | 36,389 SF |
| Total Treated Area | 77,811 SF |



TURF LOVE PROGRAM



DESIGNS



RAIN GARDENS TOO!

Your yard have an area that is slow to drain after rainfall? A rain garden could be your solution and beautify your property!



Included in \$30 Turf Love Program price

\$\$Rebate\$\$ (\$8 per square foot) from James City County



Help us clean up the Chesapeake Bay! Do your part to minimize yard runoff going down storm drains and return precious water to the earth for our use. Little steps can make a huge difference in our environment!

For more information about Turf Love Program and Rain Gardens, call James City County VCE at 757-564-2170.

Virginia Cooperative Extension programs and employment are open to all, regardless of race, color, national origin, sex, religion, age, disability, political beliefs, sexual orientation, or marital or family status. 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, Interim Administrator, 1890 Extension Program, Virginia State, Petersburg.



28-Aug-13

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 report.

If your inspection report(s) indicate(s) a total score of 2 or lower, please correct any deficiencies noted and contact me upon completion.

If your inspection report(s) indicate(s) a total score of 3 or higher, please contact me to discuss the appropriate corrective actions prior to initiating any remedial action.

In addition, the following documents: James City County's Private SWMF Program (summary), and the SWMF Glossary and Maintenance Guidance are enclosed for your review.

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 by calling 757-259-1443 to discuss your SWMF or any of the information contained within this letter. You may also email me at pmenichi@james-city.va.us.

Sincerely,

Patrick T.
Menichino
Stormwater Specialist



LOW IMPACT DEVELOPMENT CHECKLIST FOR HAMPTON ROADS

DEFINITION: Low Impact Development (LID) is a stormwater management approach that minimizes the hydrological impact of development by using design techniques that infiltrate, filter, store, evaporate, and detain runoff close to its source.

BACKGROUND: Virginia has adopted revised stormwater regulations that will be implemented by local governments beginning July 1, 2014. These regulations encourage LID through use of the runoff reduction method to reduce the impacts of development on water quality. This checklist is intended to help developers implement LID principles and reduce the cost of compliance with the stormwater regulations.

Follow these four steps to comply with Virginia’s new Stormwater Regulations:

- 1 Use Environmental Site Design Principles to minimize impervious area and preserve forest and open space.
- 2 Apply runoff reduction practices.
- 3 Add pollutant removal practices to meet water quality goals if necessary.
- 4 Add additional BMPs to meet channel protection and flood control requirements.

1. ENVIRONMENTAL SITE DESIGN

Employing the steps below will allow the developer to reduce the post development nutrient load for the site, thereby reducing the amount of nutrients that need to be reduced using expensive structural BMPs.

12 STEPS OF ENVIRONMENTAL SITE DESIGN

| Practices | Yes | No | N/A |
|---|-----|----|-----|
| 1 Conduct environmental mapping of site prior to layout. | | | |
| 2 Conserve natural areas (forest, wetlands, steep slopes, and floodplains). | | | |
| 3 Preserve stream, wetland, and shoreline buffers. | | | |
| 4 Minimize disturbance of permeable soils. | | | |
| 5 Maintain natural flow paths across site. | | | |
| 6 Layout buildings to reduce clearing and grading of site. | | | |
| 7 Grade site to promote sheet flow from impervious areas to pervious areas. | | | |
| 8 Reduce impervious area. | | | |
| Use minimum required width for roadways. | | | |
| Utilize pervious pavements for parking and pedestrian areas. | | | |
| 9 Maximize disconnection of impervious cover. | | | |
| 10 Identify potential hotspot generating areas for stormwater treatment. | | | |
| 11 Integrate erosion and sediment control practices and post construction stormwater management practices into a comprehensive site plan. | | | |
| 12 Use tree planting to convert turf areas into forest. | | | |

2. RUNOFF REDUCTION PRACTICES

These practices reduce the volume of runoff leaving a site and can also be credited towards the channel protection and flood control requirements. Implementing the practices below first will maximize the nutrients removed by the stormwater management practices because they reduce runoff and remove pollutants.

The Table below indicates which practices are appropriate for use in the Hampton Roads area. Specifications for these practices and coastal plain modifications can be found at the BMP Clearinghouse. Developers should also consult the public facilities manual of the applicable local government for additional restrictions.

| Runoff Reduction Practices | Preferred | Accepted | Restricted | Level 1 Efficiency (%) | Level 2 Efficiency (%) | Level 2 Available in Hampton Roads |
|----------------------------|-----------|-------------|-------------|------------------------|------------------------|------------------------------------|
| Rooftop Disconnection | X | | | 25 | 50 | A&B Soils/ CA ¹ |
| Sheet flow to open space | X | | | 50 | 75 | A&B Soils |
| Grass Channels | | | X | 24 | 30/40 | A&B Soils/ CA ¹ |
| Vegetated Roofs | | X | | 45 | 60 | Yes |
| Rainwater Harvesting | X | | | Up to 90 | NA | NA |
| Permeable Pavement | X | | | 59 | 81 | Limited |
| Infiltration | | Small Scale | Large Scale | 63 | 93 | Limited |
| Bioretention | X | | | 55 | 90 | Limited |
| Dry Swales | X | | | 52 | 76 | Limited |

¹Compost Amendments

3. POLLUTANT REMOVAL PRACTICES

If implementation of environmental site design principles and runoff reduction practices do not meet the stormwater regulations phosphorus target, then pollutant removal practices will need to be implemented. The Table below identifies the practices appropriate for use in the Hampton Roads area. Specifications for these practices and coastal plain modifications can be found at the BMP Clearinghouse.

| Pollutant Removal Practices | Preferred | Accepted | Restricted | Level 1 Efficiency (%) | Level 2 Efficiency (%) | Level 2 Available in Hampton Roads |
|-----------------------------|-----------|----------|------------|------------------------|------------------------|------------------------------------|
| Wet Swales | X | | | 20 | 40 | Yes |
| Filtering Practices | | X | | 60 | 65 | Limited |
| Constructed Wetlands | X | | | 50 | 75 | Yes |
| Wet Ponds | | X | | 45 | 65 | Yes |
| Extended Detention Ponds | | | X | 15 | 31 | Limited |

4. CHANNEL PROTECTION AND FLOOD CONTROL PRACTICES

If implementation of the runoff reduction practices does not meet the channel protection and flood control requirements, then additional practices will need to be constructed or pollution prevention practices will need to be modified to provide additional retention for quantity control.

RESOURCES:

Virginia Stormwater Management Handbook: http://www.dcr.virginia.gov/laws_and_regulations/lr2i.shtml

Virginia Stormwater Management BMP Clearinghouse Standards and Specifications: <http://vwrrc.vt.edu/swc/NonProprietaryBMPs.html>

Virginia Runoff Reduction Method Compliance Spreadsheet: http://www.dcr.virginia.gov/laws_and_regulations/lr2f.shtml

Appendix C-6

**Exhibits for Minimum Control Measure #6 –
Pollution Prevention/Good Housekeeping for Municipal Operations**

Phase II Stormwater Training Topics

Referenced in the following Program Plan Components: 1.1c, 1.3a, and 6.1

| Topic | Last offered | Previous dates | Planned | Notes |
|---|--------------------------------------|--------------------|---------|---|
| Landscaping | Mar 2006 | | | |
| IDDE | Oct 2009 | May 2007, Feb 2008 | | |
| General Pollution Prevention | (2) Nov 2012, (2) Dec 2012, Feb 2013 | Mar 2004, Feb 2009 | | Individual meetings with Fleet, Solid Waste, Custodial, and Facilities Mgmt Staff. All day meeting with General Services. |
| Parks & Open Space Mgt. (Nutrient Management) | Mar 2011 | | | |
| Pollution Prevention for Municipal Staff | May 2013 | | | Offered by HRPDC |

Note: Training topics are reviewed and prioritized at least twice during the permit cycle. Topics were reviewed and prioritized most recently at the September 2011 Ph II meeting, as documented in the meeting summary kept on file at the HRPDC.

POLLUTION PREVENTION/GOOD HOUSEKEEPING ACTIVITIES

6.1 – Employee Education and Training Activities

A major initiative was started in the County during Program Year 1 (PY1) and was built upon during PY2 and PY3 to address the training needs for Pollution Prevention and Good Housekeeping. In PY1, training was provided to over 160 County, James City Service Authority (JCSA – public utility), and Williamsburg/James City County School District employees regarding spill prevention and containment, and illicit discharges. In addition, signs were installed at all trash dumpsters to remind everyone of the proper materials that can be disposed of in the dumpster and to keep the lids closed. Signs were also placed at all hose bibs in the maintenance yards to discourage vehicle washing except at the designated and properly equipped wash rack.

In PY2, additional training was held for Stormwater Division staff regarding illicit discharges. This training involved dry weather screening procedures for illicit discharges. Also, storm drain markers were installed (NO DUMPING – DRAINS TO WATERWAY) in the County's maintenance yard to remind employees to properly dispose of waste materials and chemicals.

In PY3, JCSA conducted training on Good Housekeeping for its operational staff. Approximately 62 people with the County's public utility were trained in the general principles of pollution prevention, spill prevention and containment, and illicit discharges through a video presentation and discussion. Additional training will be held during PY4 for county staff in other departments.

In addition, training was held through the HRPDC on Nutrient Management Planning. The training described the proper use of fertilizers to maximize nutrient use by plantings and minimize the nutrient loss for those County turf areas that are actively managed such as athletic fields. The training was attended by the County's grounds staff personnel.

In PY4, an informal "lunch & learn" was held with County building maintenance staff to review the standard operating procedures and discuss ways to improve compliance with the procedures. Approximately 12 employees participated.

In PY5, A site visit and subsequent pollution prevention training was conducted at all three of the County's solid waste facilities, as well as Fleet Maintenance. This was an effort to follow up on corrective action recommendations from PY12 and to prevent illicit discharges. Meetings with the General Services custodial staff and the Facilities Management staff were also held this year, and standard operating procedures were reviewed and discussed.

Good Housekeeping and Pollution Prevention training was held for all General Services staff. The materials used in the training were "Raincheck Stormwater Pollution Prevention for MS4s" produced by Excal Visual LLC. The training included general principles of pollution prevention, spill

For MS4 Program Plan Items 6.1 and 6.4

prevention and containment, and illicit discharges, and were presented in a video format with quizzes and group discussion, followed by breakout sessions involving brainstorming activities for pollution prevention improvement by the municipality. Approximately 63 employees attended.

Additionally in PY5, the HRPDC offered regional training in Pollution Prevention and Spill Response for Municipal Operations which was attended by three James City County employees.

6.4 – Evaluation and Assessment of Program Plan

Significant accomplishments were achieved during PY1 regarding this Minimum Control Measure and these accomplishments were maintained and built upon during PY2 and PY3. As was the case in PY1, a staff person in the Stormwater Division has been assigned to lead this program area to ensure that continuing progress is made. This person devotes about 10% of his time to the program. In PY1, the principles of Pollution Prevention/Good Housekeeping contained in the Center for Watershed Protection's *Urban Subwatershed Restoration Manual 9* were applied. The Municipal Operations Analysis (MOA) contained in Chapter 3 of the Manual was used to evaluate program areas for improvement. The initial score using this evaluation procedure yielded a score of 57, which indicated that there was definitely room for improvement. The following actions were undertaken in PY1, PY2, PY3 and PY4 to improve the County's performance in this program element:

1. An interdepartmental Pollution Prevention Team was formed with members from the County, JCSA, and the School District. The team plans and implements pollution prevention actions for County operations.
2. Spill containment kits were purchased and installed at all fueling facilities.
3. Filters have been installed and are being maintained at all storm drain inlets in the two maintenance yards to capture sediments and other pollutants including hydrocarbons. The filters captured and removed approximately 500 pounds of material in PY2 and 535 pounds in PY3 that would have otherwise entered the storm drain system.
4. Street sweeping has been performed at both maintenance yards removing 4 tons of material from pavement surfaces in PY1 and another 3.2 tons in PY2. The sweeping was performed twice in PY2. Sweeping was not performed during PY3 because of construction activities in the maintenance yard. Sweeping will resume in PY4.
5. An enhanced wash rack facility was constructed to improve the ability of personnel to wash vehicles. The facility stores and dispenses environmentally-sensitive soaps and other cleaning supplies.
6. In PY3, the JCSA identified two floor drains in one of their maintenance facilities that discharged directly to the storm drain. They installed an oil/water separator in the discharge line so that the drainage from this area is now treated before it is discharged into a stormwater management facility.

For MS4 Program Plan Items 6.1 and 6.4

7. In PY3, new construction in the Tewning Road facility resulted in the relocation of trash dumpsters to an area where they are now positioned away from the stormwater management facility and in an area that is controlled by storm drain inlet filters. This construction also resulted in the creation of new storage areas for materials used by the JCSA that will reduce the amount of tracking and potential washoff of materials into the storm drain system filters.
8. A major initiative in PY3 was the development of Standard Operation Procedures (SOPs) for major operational areas of the County. These areas were Parks and Recreation, General Services, and the JCSA. These SOPs identified areas of improvement for these operations to reduce their potential for pollution and were developed in consultation with the involved departments.
9. In PY4 unannounced site visits were undertaken to evaluate compliance with SOPs. Results showed that the County convenience centers needed improvements to better control stormwater at the sites.
10. Covered housing for storage containers and BMP enhancements were completed during PY5. Follow-up visits to these sites have shown that pollution prevention strategies are in place.

These accomplishments allowed the County's score on the MOA to increase from 57 in PY1 to 69 in PY2 to 70 in PY3, a significant improvement over the pre-program condition. Continuing improvements have brought the County's score to 73 for PY4. In PY5 the County's score has risen from 73 to 86. This is in part due to the quarterly street sweeping efforts that the County has instituted, as well as the dedication to good housekeeping practices at municipal hotspots including periodic site visits and employee training.

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

| | | | Total FY 13 |
|---|-------|-------|--------------------|
| No. of Nutrient Management Plans Issued: | | | 191 |
| Residential | | 120 | |
| Commercial* | | 71 | |
| (James City County/School Properties = 0**) | | | |
| Acres Covered by Nutrient Management Plans: | | | 34.04 |
| Residential | | 18.89 | |
| Commercial | | 15.15 | |
| (James City County/School Properties = 0) | | | |
| Acres in relation to RPA: | | | 34.05 |
| In an RPA | | 5.9 | |
| Residential | 5.53 | | |
| Commercial | 0.37 | | |
| (James City County/School Properties = 0) | | | |
| Near an RPA | | 2.64 | |
| Residential | 2.64 | | |
| Commercial | 0 | | |
| (James City County/School Properties = 0) | | | |
| Not in or near an RPA | | 25.51 | |
| Residential | 10.72 | | |
| Commercial | 14.79 | | |
| (James City County/School Properties = 0) | | | |
| No. of Soil Tests Sent to VA Tech: | | | 168 |
| Turf Love Program: | | 168 | |
| Residential | 135 | | |
| Commercial | 33 | | |
| (JCC/School Properties = 1 {4th Qtr}; 15 {FY 13}) | | | |
| No. of Property Owners Contacted | | | 400 |
| Residential | 394 | | |
| Commercial | 6 | | |
| (James City County/School Properties = 1) | | | |
| Community Presentations | | | |
| JCC First-Time Homeowners | | | |
| General Contacts (may not be property owners): | | | 494 |
| Seminars (Super Turf Saturday/Turf Love University) | 186 | | |
| Farmers' Market | 151 | | |
| Others: | 157 | | |
| Ford's Colony Garden Tour | | | |
| Tractor Supply Booth | | | |
| Eastern State Hospital presentation | | | |

* ' Commercial' = non-residential property, plus reports to developers (as client) for residential properties

**** James City County Properties:**

- JCC Recreation Center athletic fields
- JC Service Authority
- School Properties

 =differences due to rounding

Appendix D

**Hampton Roads Regional Stormwater Management Program
Memorandum of Agreement
June 2013**

Hampton Roads Regional Stormwater Management Program

Memorandum of Agreement



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

ROBERT M. DYER

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

WHITNEY KATCHMARK

JENNIFER TRIBO

TIFFANY SMITH

MICHAEL LONG

CHRISTOPHER VAIGNEUR

JENNIFER COLEMAN

HRPDC DEPUTY EXECUTIVE DIRECTOR

PRINCIPAL WAER RESOURCES ENGINEER

SENIOR WATER RESOURCES PLANNER

WATER RESOURCES PLANNER

GENERAL SERVICES MANAGER

ASSISTANT GENERAL SERVICES MANAGER

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

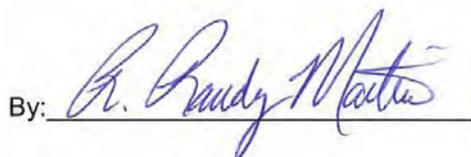
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James City County

By: 

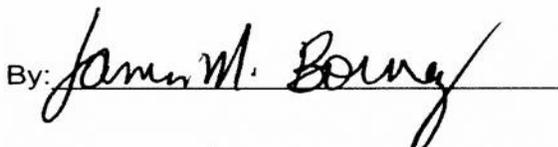
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City of Franklin

By: 

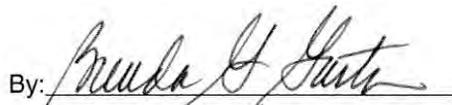
Date: 8/19/13

City of Newport News

By: 

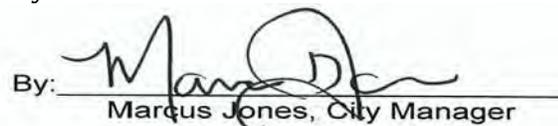
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Gloucester County

By: 

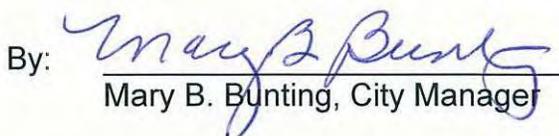
Date: July 3, 2013

City of Norfolk

By: 
Marcus Jones, City Manager

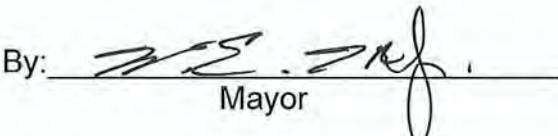
Date: 6/17/13

City of Hampton

By: 
Mary B. Bunting, City Manager

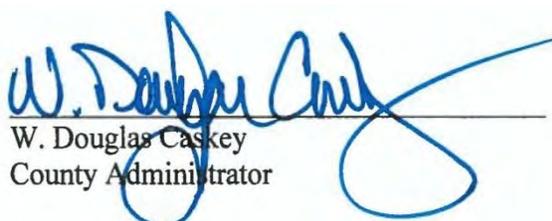
Date: 6/13/13

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: 

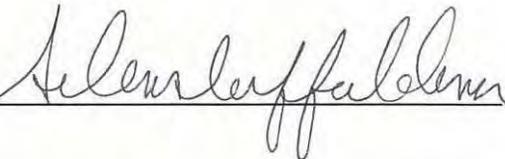
Date: 8/28/2013

City of Williamsburg

By: 

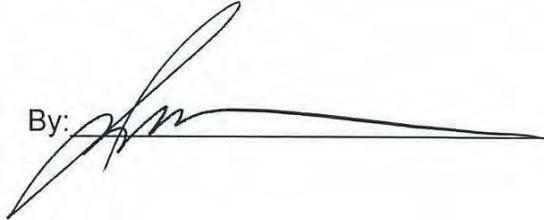
Date: 7/11/13

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

Appendix E

**Regional Cooperation in Stormwater Management
Fiscal Year 2012 – 2013, A Status Report
Hampton Roads Planning District Commission**

Regional Cooperation In Stormwater Management

Fiscal Year 2012-2013
A Status Report



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

ROBERT M. DYER

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

WHITNEY KATCHMARK

JENNIFER TRIBO

MICHAEL LONG

CHRISTOPHER VAIGNEUR

JENNIFER COLEMAN

HRPDC DEPUTY EXECUTIVE DIRECTOR

PRINCIPAL WAER RESOURCES ENGINEER

SENIOR WATER RESOURCES PLANNER

GENERAL SERVICES MANAGER

ASSISTANT GENERAL SERVICES MANAGER

ADMINISTRATIVE ASSISTANT

REGIONAL COOPERATION IN STORMWATER MANAGEMENT

FISCAL YEAR 2012-2013

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 2013

REPORT DOCUMENTATION

TITLE:
**Regional Cooperation in Stormwater
Management Fiscal Year 2012-2013:
A Status Report**

REPORT DATE
September 2013

GRANT/SPONSORING AGENCY
LOCAL FUNDS

AUTHORS:
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ABSTRACT

This document describes cooperative activities related to stormwater management undertaken by Hampton Roads local governments during Fiscal Year 2012-2013. 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

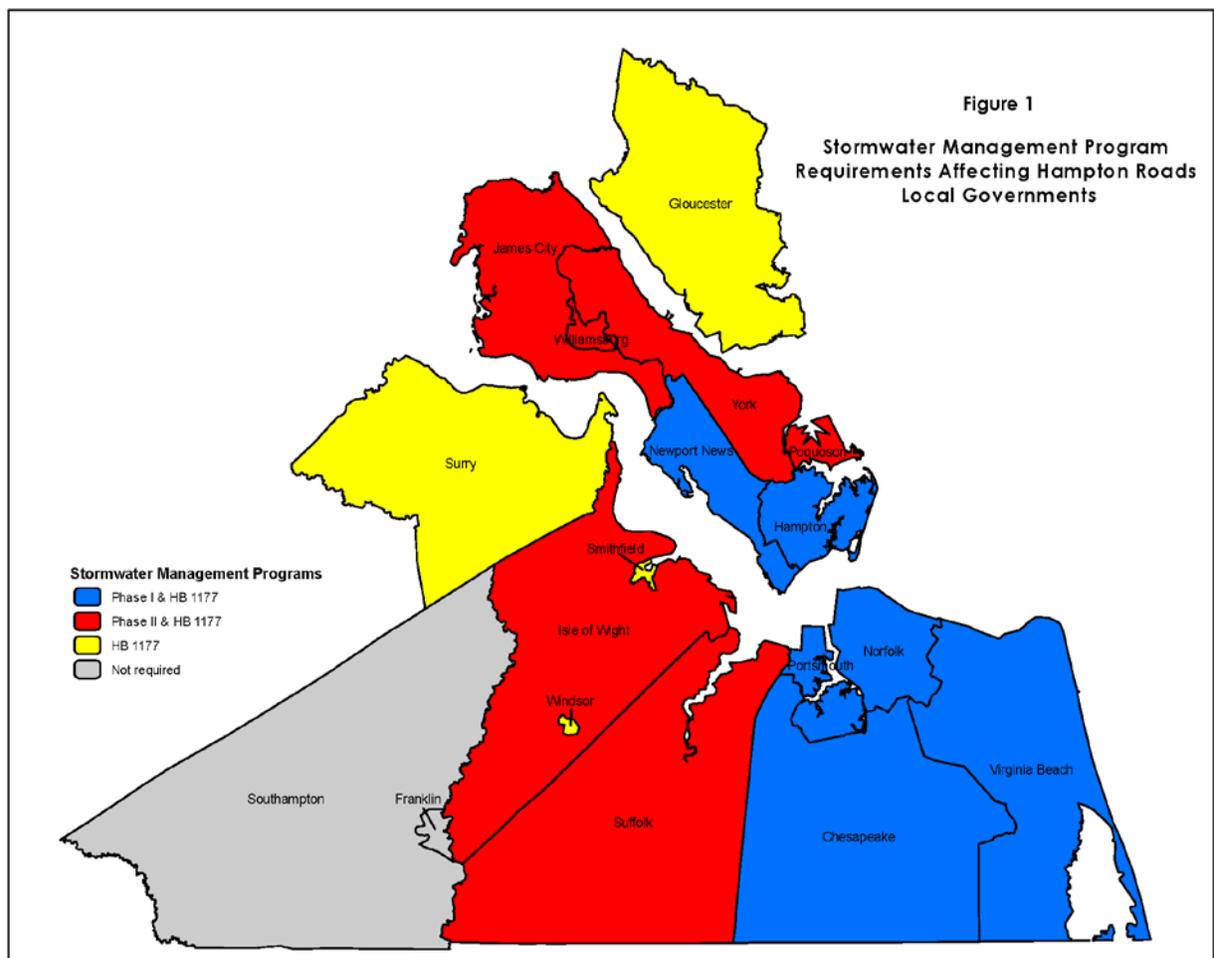
The Hampton Roads Planning District Commission, in cooperation with the regional Stormwater Technical Workgroup, prepared this report.

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 2012-2013. 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 will be required in July 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 the end of FY14. HRPDC staff worked with the localities to review the draft

permits. The Phase I localities have also monitored and commented on the Phase II MS4 General Permit reissued in July 2013, since the permit requirements will likely be proposed in the Phase I MS4 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 cooperated to evaluate proposed changes to the Phase II General Permit. The Phase II General Permit was reissued on July 1, 2013. Local staff served on the State's Regional Advisory Panel for the Phase II General Permit to represent the concerns of the stormwater staffs in the region and track proposed changes to the permit.

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 Technical 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 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 waterbodies. Issues associated with these programs are also addressed during the monthly meetings. In FY13, the Stormwater Technical 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 Virginia DCR on state initiatives related to the Virginia Stormwater Management Regulations, by DEQ staff on the development of TMDLs for local waters, and by the Virginia Institute of Marine Science on oyster restoration.

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 Technical 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. 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 a training event was conducted to review lessons learned from audits in the region including general pollution prevention and good housekeeping at municipal facilities. HRPDC also conducted Erosion and Sediment Control training for contractors to highlight common issues flagged by local government inspectors. HRPDC coordinated with DCR 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 have 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 | May 2013 | March 2004, Feb 2009 |
| Parks & Open Space Mgt. | March 2011 | |
| LID Practices | June 2010 | |
| Erosion & Sediment | 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 2012-2013, the regional emphasis was continued participation in the evolving regulatory stormwater program of the Department of Conservation and Recreation and the revisions to the General Permit which covers the Phase II MS4 localities.

Virginia Stormwater Regulations

Revisions to the Stormwater Regulations were approved by the Soil and Water Conservation Board in May 2011 and will be implemented by localities by July 1, 2014. In FY13, HRPDC and local government staff continued to serve on DCR's Stormwater Local Government Advisory Committee. The committee provided input to DCR on implementation of Local Stormwater Programs and need for guidance on creating TMDL Action Plans for the MS4 permits. Other challenges include management of grandfathered permits and defining the permit process for "common plans of development".

The region is also currently represented on the DCR Stormwater BMP Clearinghouse Committee which reviews protocols for proprietary BMP pollutant removal efficiencies. 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 Phase II General Permit, Construction General Permit, and Nutrient Trading. In each case, the panel representative from the region provided updates to the Stormwater Technical Workgroup or Joint Environmental Committee, collected input, and made recommendations to the panel. In several cases, the Commission submitted comments to the state to endorse revisions to the final proposed regulations.

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 FY13, 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. HRPDC staff have reached out to DCR and DEQ to develop consistent processes for tracking BMPs and calculating their effectiveness to comply with both Virginia Stormwater Regulations and Chesapeake Bay TMDL implementation.

REGIONAL STUDIES

Bacteria Source Tracking

The HRPDC led a regional effort to develop a bacterial identification methodology for the Hampton Roads Region. Proven genetic techniques are being used to differentiate bacteria sources, so that TMDL plans can be designed to address the cause of the bacterial impairment. During FY2013, the study was completed and findings were reviewed with the Stormwater Technical Workgroup and DEQ staff.

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 will focus on working closely with two pilot localities to identify the most appropriate tools and test their application. The project will result in a coastal plain BMP guidance document, 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.

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 FY13, 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 future 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, the Stormwater Technical Workgroup reviewed the potential for PARS to track and report the implementation of Chesapeake Bay TMDL strategies. The Chesapeake Bay Program and DEQ continue to refine the data reporting requirements for BMPs so the evaluation of PARS will continue in FY14.

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, the HRPDC staff have continued to follow the activities of the CBP primarily through participation in the Urban Stormwater Workgroup. In FY 2013, local government stormwater staff served on the Streetsweeping 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 Joint 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.

This year the Stormwater Technical Workgroup has provided input on the PCB TMDL for the Lower James and Elizabeth River and the bacteria TMDL for the Back and Poquoson Rivers. 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.

Sanitary Sewer Overflows

In late 2004, the 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.

Appendix F

DCR MS4 Program Evaluation and Response



COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

203 Governor Street
Richmond, Virginia 23219-2010
(804) 786-6124

May 11, 2010

Mr. Darryl E. Cook, County Engineer
James City County, Virginia
287 McLaws Circle, Suite 1
Williamsburg, Virginia 23188

RE: James City County, Permit Registration #VAR040037
MS4 Program Evaluation

Dear Mr. Cook:

Thank you for meeting with me and giving me the opportunity to evaluate your MS4 Program. Included with this letter is a copy of the MS4 Program Evaluation that contains my notes and recommendations. As we discussed during our May 5, 2010 meeting, the MS4 Program Plan should be updated to incorporate any changes you make based on those recommendations. DCR asks that you submit the amended MS4 Program Plan no later than June 30, 2010.

If you have any questions regarding this letter or the attached site visit summary, please contact me at (804) 225-2557, or by e-mail at mason.harper@dcr.virginia.gov. DCR looks forward to working with you as you continue to develop and refine your MS4 Program.

Sincerely,

A handwritten signature in cursive script that reads "J. Mason Harper".

J. Mason Harper
MS4 Permit Writer

MS4 Program Evaluation
James City County
Permit Registration #VAR040037
May 5, 2010

INTRODUCTION

James City County registered and obtained coverage under the new General Permit that became effective on July 8, 2008. The County submitted an updated MS4 Program Plan by the January 9, 2009 date established in that permit. As required by the permit, the County submitted an annual report describing MS4 Program Plan elements that were conducted for the July 1, 2008 – June 30, 2009 reporting cycle. On May 5, 2010, DCR staff met with Mr. Darryl Cook (County Engineer) to review the MS4 Program Plan and 2009 annual report, and discuss any potential compliance issues with the existing Plan in meeting General Permit requirements.

Although a large part of the County is designated by EPA as “urban area”, the MS4 is limited because VDOT owns the road system. The actual MS4 “system” owned by the County is a set of 39 distinct complexes made up of public schools, County parks, and maintenance facilities. There are approximately 50 MS4 outfalls.

MS4 PROGRAM PLAN/BMP OVERVIEW AND COMMENTS

The notes below summarize the existing MS4 program. Any compliance issues with the MS4 Program Plan are described, and recommendations are made where appropriate to assist you with amending your MS4 Program Plan. When making the necessary amendments, please review the General Permit carefully to ensure that new or modified BMPs satisfy all permit requirements.

Minimum Control Measure (MCM) #1 Public Education and Outreach on Stormwater Impacts

The County has implemented an effective public education program by partnering with the Hampton Roads Planning District Commission (HRPDC) outreach efforts. Numerous education and outreach BMPs are established through HR Storm, which is a regional stormwater education program administered by the HRPDC.

Public education and outreach specific to James City include the County's PRIDE (Protecting Resources in Delicate Environments) program. The goal of PRIDE is to improve water quality in the County by teaching residents the importance of watershed protection. Outreach is done primarily by posting info on the County website. Some aspects of the program include posting neighborhood BMP efficiencies, a mini grant program, and lawn care guidance.

The County has also begun targeted educational outreach towards local restaurant owners during the past year.

MCM #2 Public Involvement/Participation

BMPs to satisfy this MCM include: posting copies of the MS4 Program Plan and annual reports on the County Website, conducting PRIDE implementation projects that promote improved water quality, being a stakeholder in developing TMDL implementation plans, and training citizens to monitor instream water quality.

The MS4 Program Plan should be modified to include true measurable goals (eg. # of PRIDE projects the County commits to conduct per year) for BMPs 2.3b, 2.3c, and 2.4.

MCM #3 Illicit Discharge Detection and Elimination (IDDE)

All outfalls are mapped in the County's GIS system.

Evaluation of and improvements to County owned pump stations are required under the EPA SSO Consent Order. Activities conducted per the Consent Order are included as a BMP under this MCM.

The General Permit requires that MS4 owners "develop and implement procedures to detect and address nonstormwater discharges, including illegal dumping, to the regulated MS4". This requirement is commonly met through a dry weather screening program, where the number of outfalls to be screened (as well as prescribed frequency) is described as a formal BMP in the MS4 Program Plan. The annual report stated that dry weather screening programmed is planned in the future. However, the program is not yet formalized as a BMP in the MS4 Program Plan. The Plan must be revised to demonstrate compliance with this permit requirement.

MCM #4 Construction Site Stormwater Runoff Control

By letter dated February 15, 2006, DCR determined the County's E&S Program to be "consistent with the VA ESC Law and regulation". The entire County is designated as a Chesapeake Bay Preservation area, and all projects that disturb more than 2500 square feet are required to obtain VSMP construction permits.

The County tracks and reports on all land disturbance projects, and plan reviews and inspections are done by DCR certified individuals.

MCM #5 Post Construction Stormwater Management in New Development and Re-Development

The County Stormwater Management Ordinance is combined with the IDDE Ordinance. There are approximately 600 structural BMPs, of which 55 are owned and operated by James City County. Maintenance agreements have been developed and are in use. County tracks and reports on all BMPs constructed.

MCM#6 Pollution Prevention/Good Housekeeping

James City has many park facilities. One of those parks (Warhill Park) has numerous athletic fields and hosts regional sporting events. It is unknown if Nutrient Management Plans (NMPs) have been developed for any parks. If NMPs (or general procedures for fertilizer application) are in place then they should be included as a BMP in the MS4 Program Plan. Any SPCCC Plans developed for County facilities should also be added to the Plan as a BMP.

The MS4 Program Plan contains an employee training program as required by the General Permit. Please review all activities and procedures currently in place at the County relating to stormwater pollution prevention. Incorporate as appropriate when the MS4 Program Plan is revised.

If not already completed, operation and maintenance procedures need to be developed for County owned facilities and incorporated into the MS4 Program Plan.

If NMPs have been developed, incorporate into the MS4 Program Plan as a BMP under MCM#6.

General Services Stormwater Division
287 McLaws Circle, Suite 1
Williamsburg, Virginia 23185-5649
P: 757-259-1460
F: 757-259-5833
stormwater@james-city.va.us



jccEgov.com

June 28, 2010

Mr. J. Mason Harper
MS4 Permit Writer
Department of Conservation and Recreation
203 Governor Street
Richmond, VA 23219-2010

RE: James City County, Permit Registration #VAR040037 – MS4 Program Evaluation

Dear Mr. Harper:

As a follow-up to our meeting of May 5, 2010, and in response to your letter of May 11, 2010, attached is the revised MS4 Program Plan for James City County. The revisions include:

1. Deleting the BMP *Target Homeowners and Landscapers* under 1.2g "Chesapeake Club" Campaign. This BMP involved recruitment of lawncare companies to offer the "Chesapeake Club" treatment. Significant recruitment effort by Hampton Roads localities yielded little in results and therefore, the localities decided to eliminate this component of the "Chesapeake Club" campaign.
2. Specifying in BMP 2.3a. that at least one PRIDE implementation project will be undertaken annually.
3. Specifying in BMP 2.3b. a minimum number of sites for volunteers to conduct biological stream monitoring.
4. The addition of BMP 2.3d. to promote citizen involvement in at least one stream cleanup activity annually.
5. The addition of a dry weather screening BMP, item 3.3c, detailing the number and frequency of outfall screenings.
6. Revising the program year for completion of BMP 6.2, Spill Prevention and Control Plans for municipal facilities from PY2 to PY3.
7. The addition of a BMP under BMP 6.2 that documents the existence and implementation of an SPCCC Plan for the county's water desalination plant.
8. A BMP under BMP 6.3 that states that nutrient management plans will be developed for all irrigated, managed turf areas owned by the county or the WJCC schools.
9. The addition of two BMPs under BMP 6.3, *Operations and Maintenance Program*, for the development of operation and maintenance plans for General Services, and Parks and Recreation by the end of the permit cycle.

I hope these revisions and comments address the items in your letter satisfactorily. If you need any additional information or have any questions regarding this matter, please contact me at 757-259-1442.

Sincerely,

A handwritten signature in cursive script that reads "Darryl E. Cook".

Darryl E. Cook
County Engineer