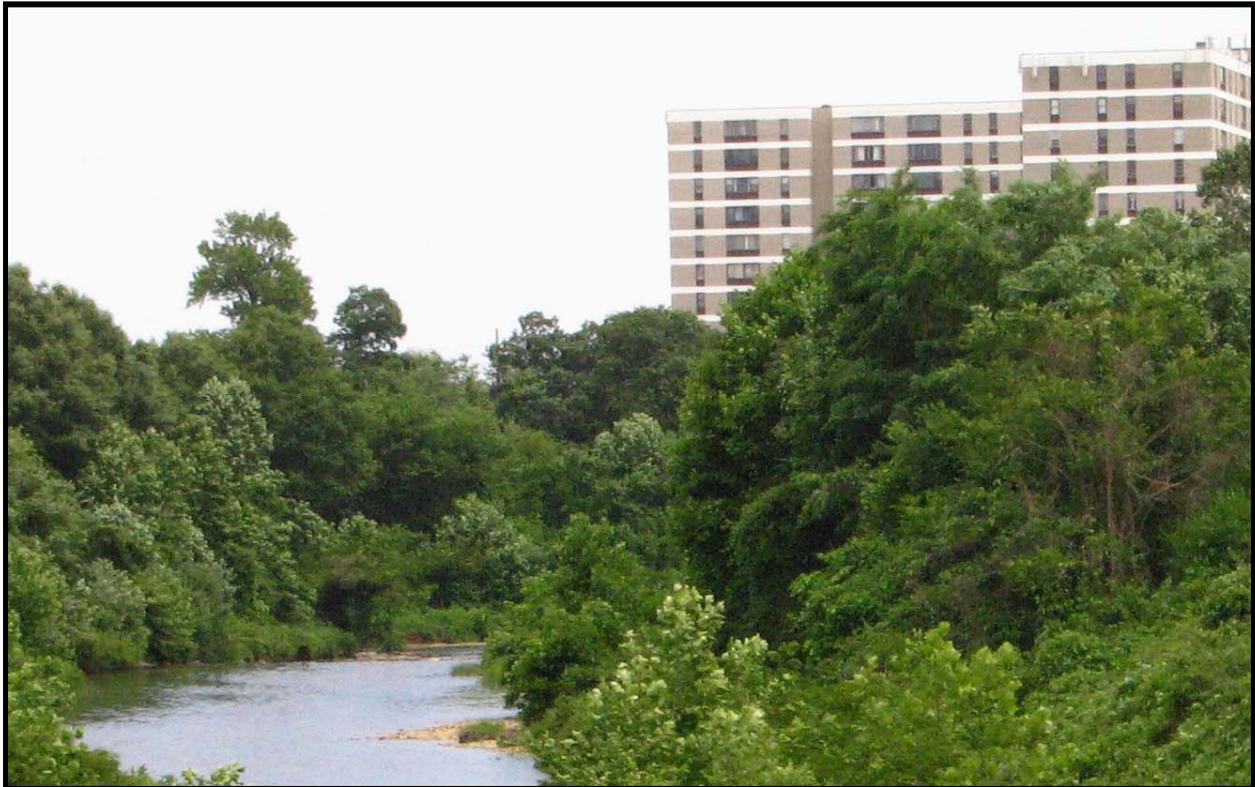


## City of Alexandria, Virginia

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# Year 2 VSMP MS4 Annual Report Permit No. VAR040057

For compliance with 4VAC50-60 "General Virginia Stormwater Management Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems"



Department of Transportation and Environmental Services  
Office of Environmental Quality  
301 King Street, Alexandria, VA 22314  
703-519-3400

**September 30, 2010**

**VSMP General Permit for  
Small Municipal Separate Storm Sewer Systems  
Permit No. VAR040057**

Year 2 Annual Report  
July 1, 2009 – June 30, 2010

City of Alexandria, Virginia



Submitted by  
City of Alexandria  
Department of Transportation and Environmental Services  
Office of Environmental Quality  
301 King Street, Alexandria, VA 22314

# CERTIFICATION

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

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Name

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Title

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Date

# VSMP General Permit for Small Municipal Separate Storm Sewer Systems Permit No. VAR040057

Year 2 Annual Report  
July 1, 2009 – June 30, 2010  
City of Alexandria, Virginia

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# 1 Introduction

This Permit Year 2 (PY2) Annual Report has been prepared by the City of Alexandria Office of Environmental Quality in accordance with the requirements of the Virginia Stormwater Management Program (VSMP) General Permit for Discharges of Storm Water from Municipal Separate Storm Sewer Systems (4VAC 50-60 *et seq.*). The City was originally issued General Permit VAR040057 on July 8, 2003 and successfully met the requirements over the initial five year permit period. The Department of Conservation and Recreation (DCR) re-issued the permit on July 9, 2008 for an additional five years.

Under the terms of the General Permit, the City has developed a Municipal Separate Storm Sewer System (MS4) Program Plan to implement six minimum control measures aimed at reducing the discharge of pollutants to the “maximum extent practicable.” Minimum control measures include:

1. Public Education and Outreach	4. Construction Site Runoff Control
2. Public Participation and Involvement	5. Post-Construction Stormwater Management
3. Illegal Discharge Detection and Elimination	6. Pollution Prevention and Good Housekeeping

The General Permit requires that the City submit annual reports no later than October 1<sup>st</sup> covering the reporting period of the preceding July 1<sup>st</sup> through June 30<sup>th</sup>. This PY2 Annual Report covers the period of July 1, 2009 through June 30, 2010. Part II E 3 of the General Permit outlines the requirements for the annual report:

- a. Background information, including: (1) the name and permit number of the program submitting the annual report; (2) the annual report permit year; (3) modifications to any operator’s department’s roles and responsibilities; (4) number of new MS4 outfalls and associated acreage by HUC added during the permit year; and, (5) signed certification in accordance with 4VAC50-60-370.
- b. The status of compliance with permit conditions, an assessment of the appropriateness of the identified best management practices, including an assessment of the appropriateness of the identified BMPs in addressing discharges into waters that are identified as impaired in the 2006 305(b)/303(d) Water Quality Assessment Integrated Report, and progress towards achieving the identified measurable goals for each of the minimum control measures.
- c. Results of information collected and analyzed, including monitoring data, if any, during the reporting period.
- d. A summary of the stormwater activities the operator plans to undertake during the next reporting cycle.

- e. Changes in any identified best management practices or measurable goals for any of the minimum control measures, including steps to be taken to address any deficiencies.
- f. Notice that the operator is relying on another government entity to satisfy some or the permit obligations, if applicable.
- g. The approval status of any qualifying local programs pursuant to Section II C of the General Permit, if appropriate, or progress towards achieving full approval of these programs.
- h. Information required pursuant to Section I B 9 of the General Permit regarding special conditions associated with a total maximum daily load (TMDL) approved by the State Water Control Board, if applicable.
- i. The number of illicit discharges identified and the narrative on how they were controlled or eliminated pursuant to Section II B 3 f of the General Permit.
- j. Regulated land-disturbing activities data tracked under Section II 4 c of the General Permit.
- k. All known permanent stormwater management facility data tracked under Section II B 5 b (6) of the General Permit submitted in a database format to be prescribed by the department.
- l. A list of any new or terminated signed agreements between the operator and any applicable third parties where the operator has entered into an agreement in order to implement minimum control measures or portions of minimum control measures.
- m. Copies of any written comments received during a public comment period regarding the MS4 Program Plan or any modifications.

## 2 Background Information

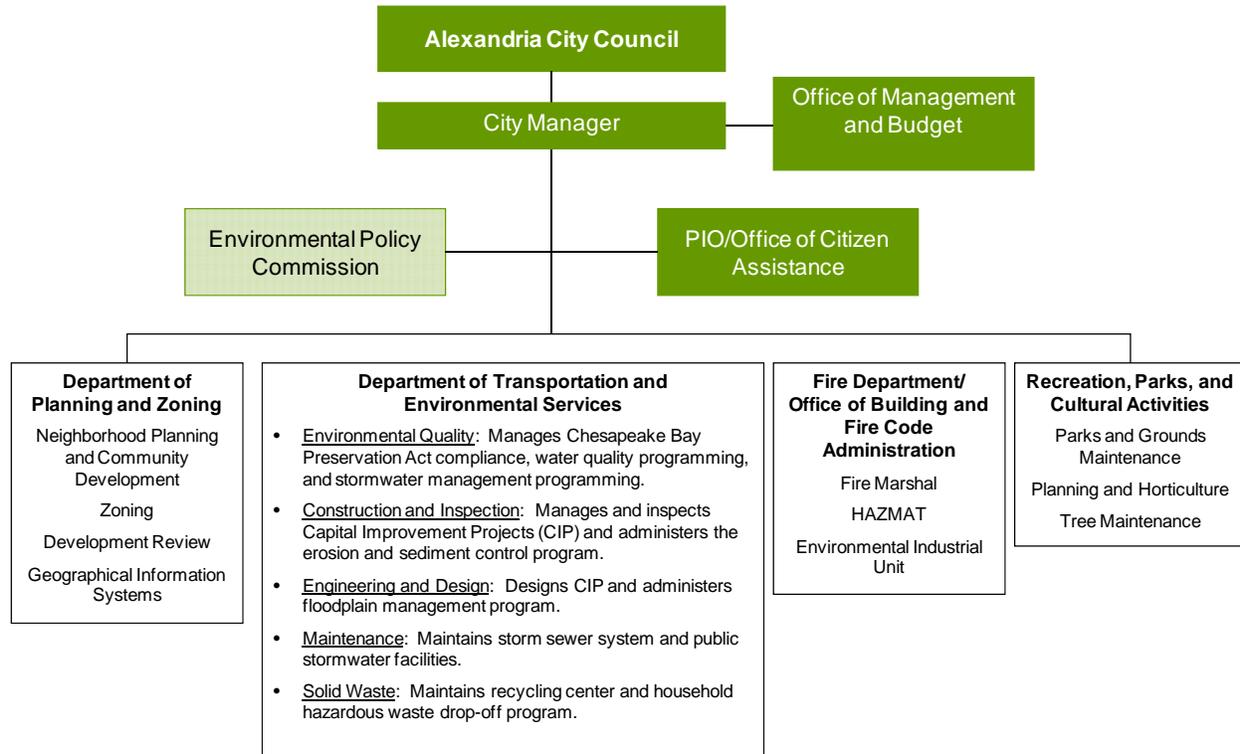
This section provides background information as required in Part II E 3 a of the General Permit.

<b>Name of Operator:</b>	<b>Permit Year:</b>		<b>Permit Number:</b>			
City of Alexandria	Permit Year 2		VAR040057			
<b>Modifications to Roles and Responsibilities:</b> None.						
<b>New MS4 Outfalls:</b>	<b>Potomac River (PL28)</b>		<b>Cameron Run (PL26)</b>		<b>Four Mile Run (PL25)</b>	
	Outfalls	Drainage	Outfalls	Drainage	Outfalls	Drainage
	None	None	None	None	None	None

The organizational chart below outlines City departments with major stormwater management functions or responsibilities. A new Environmental Industrial Unit within the Office of Building and

Fire Code Administration was established in 2009 and reported in the PY1 Annual Report. Additional information about each department is found in the MS4 Program Plan.

## Stormwater Management Organizational Chart



While stormwater activities and functions are divided among several different departments and divisions, the Office of Environmental Quality has primary responsibility for coordinating compliance with the permit.

### 3 Compliance with Year 2 Permit Conditions

The following provides the status of Permit Year 2 (PY2) conditions for each of the six minimum control measures (MCMs). This includes all ongoing BMPs that were implemented in PY1. One-time BMPs implemented in PY1 are not included, and may be found in the PY1 Annual Report previously submitted to DCR. Each section begins with a summary table describing the task, the implementation year, the measurable goal as described in the City’s adopted Stormwater Management Plan, and task status. Following the summary table is a more detailed discussion of the implementation status of each task. Additional support materials are located in the appendices.

### 3.1 Public Education and Outreach (MCM #1)

The following table is a summary of activities for Minimum Control Measure #1 and their completion status. Additional detail is provided after the table and in Appendix A.

BMP	Year	Measurable Goal	Status
<b>1A General Public Education and Outreach</b>			
Distribute brochure at community events.	All	Document efforts to engage and educate citizens, including the number of events attended and an estimate of the number of individuals reached.	✓ Complete
Include environmental/water quality article in FYI Alexandria.	2-On	Document publication of an environmental/water quality article in FYI Alexandria.	✓ Complete
Continue participation in regional education programs.	All	Summarize activities of the Clean Water Partners program and the results of any assessments of the program's effectiveness.	✓ Complete
<b>1B Stream Crossing Signs</b>			
Maintain stream crossing signs.	All	Document maintenance of the signs for the annual report.	✓ Complete
<b>1C Text Messages and PSAs for Cable TV</b>			
Implement cable TV text message and PSAs.	All	Document the PSAs and scrolling text message.	✓ Complete
<b>1D Stormwater BMP Signage</b>			
Implement stormwater BMP signage.	All	Provide examples of signage and labeling that has occurred, if any.	✓ Complete
<b>1E Storm Drain Inlet Marking</b>			
Implement storm drain inlet marking.	All	Provide the number of storm drain markers installed and the number of groups involved in storm drain marking projects.	✓ Complete
<b>1F Water Quality Website</b>			
Host water quality website.	All	Provide information on the website and a snapshot of the page.	✓ Complete

<b>BMP</b>	<b>Year</b>	<b>Measurable Goal</b>	<b>Status</b>
Conduct comprehensive web site assessment and update accordingly.	2	Provide a description of the assessment process and changes, if any, made to the web site.	✓ Complete
<b>1G Education Concerning Fecal Coliform Bacteria</b>			
Distribute pet waste brochure and post cards at appropriate events.	All	Summarize activities and report the number of brochures and post cards distributed to City residents.	✓ Complete
Distribute pet waste brochure at the animal shelter.	All	Report the number of brochures distributed at the animal shelter.	✓ Complete
<b>1I Education Concerning PCBs</b>			
Incorporate standard condition in all development SUPs regarding PCBs.	2	Provide standard language used in all SUPs for redevelopment.	✓ Complete
Develop PCB education brochure for businesses and industry.	2	Provide a copy of the PCB education brochure and describe outreach efforts.	✓ Complete
<b>1J Outreach to Minorities</b>			
Distribute bi-lingual brochures at appropriate events.	All	Summarize outreach activities where City staff distributed bi-lingual education information.	✓ Complete

### **BMP 1A General Public Education and Outreach**

The City implemented the following BMPs during PY2 in accordance with the MS4 Program Plan:

- The City updated the general education brochure and continued to distribute it at appropriate community events and meetings. See below for a table of events and meetings.
- The City included a water quality related article in the City’s *FYI Alexandria* newsletter. The newsletter is distributed to all Alexandria residents. Entitled “Water Quality – Keeping Your Yard Green,” the article focuses on proper lawn care for reducing pollutants to the Potomac River and the Chesapeake Bay. The article was published in the June 2010 edition of the newsletter and is included in Appendix A.
- The City continued to participate in the Northern Virginia Regional Commission’s Clean Water Partners program. The website, Only Rain, can be found at [www.onlyrain.org](http://www.onlyrain.org). While

the use of traditional radio advertizing has been effective in the past, the campaign decided in 2009 to also focus on social networking and on-line advertizing to get the message out to the public. In particular, the program launched a web blog about dogs that features interesting dog-related information with a proper pet waste disposal message woven into the articles. This interactive format will not only help attract new readers, but will also give previous visitors a reason to return to the site. The blog can be found at [www.northern-virginia-dog-blog.com](http://www.northern-virginia-dog-blog.com). In addition, the Only Rain website that was created in 2009 was also enhanced with new information – including specific information relevant to the City of Alexandria. Finally, a new radio public service advertisement entitled “Dog Bleep” will be rolled out in October 2010.

- During this permit year, the City engaged in a process to discuss the potential implementation of a stormwater utility. This effort included the formation of a nine-member Stormwater Working Group. As part of this effort, presentations were made to seven citizens associations that focused, in part, on the need for water quality improvements in Alexandria’s streams, the Potomac River, and the Chesapeake Bay.

#### Measure of Effectiveness

The goal of this BMP is to reach a wide audience with a general pollution prevention message as well as specific actions that can be taken to reduce pollution. The following table summarizes the City’s public education and outreach activities and events where information on pollution prevention and water quality were distributed. Appendix A contains examples from the City’s general education program.

<b>Activity</b>	<b>Description</b>	<b>Date</b>
Alexandria Public Schools Teacher Training	Teacher training program on watersheds and stream monitoring presented by Earth Force. Approximately 20 participants.	August 7, 2009
Plastic Bag Recycling Initiative	Alexandria launched a Plastic Bag Recycling Initiative to educate residents on the impacts of plastic bags on the environment and to encourage recycling. More information can be found at <a href="http://www.alexandriava.gov/plasticbags">www.alexandriava.gov/plasticbags</a> . The kick-off event at Market Square/City Hall resulted in the collection of 386 gallons of plastic bags. Several follow-up events (dates listed) were also held by City staff.	September 21, 2009 October 3, 2009 October 25, 2009 November 15, 2009 April 17, 2010 April 24, 2010
Rain Barrel Display	A display promoting rain barrels was set up at the North Ridge Citizen Association annual tree sale.	October 3, 2009
Rain Barrel Workshops	City staff, in partnership with the Northern Virginia Soil and Water Conservation District, sponsored a build your own rain barrel workshop at Polk Elementary School and Cora Kelly Elementary School. Approximately 40 people attended each event.	October 24, 2009 May 8, 2010

<b>Activity</b>	<b>Description</b>	<b>Date</b>
Alexandria Public Schools Fall Festival	City staff participated in the annual Maury Elementary Fall Festival and distributed brochures and other materials on water quality and proper disposal of dog waste.	November 17, 2009
ABCs of Going Green	City staff gave a presentation on environmental issues, including water quality, to Boy Scout Troop 135.	December 12, 2009
Alexandria Public Schools Science Fair	City staff participated in the annual science fair and provided information to students on water quality and environmental protection.	January 27, 2010
Del Ray Citizens Association Meet and Greet	City staff attended the annual Del Ray event and distributed water quality and watershed related materials.	March 8, 2010
Holmes Run Park Clean Up	City staff participated in a clean-up of Holmes Run park, which include participation from local high school students.	April 2010
Distribution of Water Quality and Pet Waste Brochures	The City placed brochures at Duncan Library as well as two businesses (Show of Hands and St. Elmo’s Coffee Pub) on Mount Vernon Avenue during Earth Day activities.	April 2010
Mount Vernon Community School “Habits of Mind” Group	City staff conducted Enviroscape demonstrations and distributed stormwater pollution prevention brochures to the students.	April 13, 2010
Alexandria Earth Day	City staff had a booth where pollution prevention and watershed information was distributed.	April 24, 2010
Earth Force 2010 Youth Summit	City staff participated in the 2010 Earth Force Youth Summit. The summit, which included participation from about 250 students from Alexandria and Arlington, focused on what youth can do to protect water quality and the environment.	April 27, 2010
City Employee Wellness Fair	City staff distributed water quality (and specifically bacteria related) brochures and materials at the Employee Wellness Fair.	May 12, 2010
Maury Elementary After School Science Club	City staff presented information and taught 14 participants about water quality and watershed issues.	May 14, 2010

A report from the Clean Water Partners with information on the effectiveness of the program is included in Appendix A. For example, past surveys indicated that on average 15 percent of those that heard the program’s radio ads were more careful with fertilizer, 12 percent noted that they no longer dumped used oil, and 11 percent stated that they pick up more frequently after their pet. Through August 2010, the new dog-oriented web blog has had 3,693 views. During PY3, the program will conduct a telephone survey following the new “Dog Bleep” radio ad initiative to measure the effectiveness at increasing awareness and changing behavior.

### **BMP 1B Stream Crossing Signs**

The City previously installed 33 signs at 18 locations where roads cross major waterways. In addition, the City installed nine signs at major stream crossings on hike/bike trails. The signs promote awareness of Alexandria's surface water resources, water bodies, and drainage basins.

#### Measure of Effectiveness

The City continues to actively maintain these signs so that they are in good condition.

### **BMP 1C Text Messages and PSAs for Cable Television**

The City continued to run a pollution-prevention message throughout the year on the Alexandria government channel (Channel 70) similar to that documented in previous years. The message provides information on the importance of water quality protection efforts and where residents can obtain additional information.

#### Measure of Effectiveness

The Channel 70 pollution prevention message ran approximately 10-30 times a day, seven days a week, during PY2.

### **BMP 1D Stormwater BMP Signage**

This task requires the City to implement, as a condition on new and redevelopment projects, a program to provide signage or labeling identifying new surface structural stormwater BMPs. No new surface structural BMPs were installed during PY2 for which this requirement would apply.

### **BMP 1E Storm Drain Inlet Marking**

The City continues to require new development and redevelopment to mark storm drain inlet covers with information on the drainage destination of waters entering the structures. In addition, City staff continues to promote the storm drain marking program at community events and to work with interested residents to implement storm drain marking.



#### Measure of Effectiveness

In addition to those installed as a requirement of development or redevelopment, City staff helped to coordinate several storm drain marking events during PY2, with 347 new labels installed by volunteers. In addition, 550 door hangers were distributed as part of the Boy Scout Troop 135 Eagle Scout project. Projects included the following:

Group	Date	Watershed	Markers
Boy Scout Troop 135 Eagle Project	12/12/2009	Timber Branch	255
Water Environment Federation Volunteer Day	4/23/1010	Timber Branch and Hooff's Run	27
Water Environment Federation Volunteer Day	4/29/2010	Timber Branch and Hooff's Run	65
Old Presbyterian Meeting House Volunteer Day	6/6/2010	Timber Branch and Hooff's Run	80

### **BMP1F Water Quality Web Site**

The City continues to host a stormwater quality web page and to update the page with new information. The page is located at <http://alexandriava.gov/tes/oeq/info/default.aspx?id=3844>. In addition, the Office of Environmental Quality page (<http://alexandriava.gov/Environment>) has a “What’s New” section that is updated by OEQ staff to highlight upcoming events or important information. For instance, this section has been used to promote volunteer stream clean-ups and to promote “build your own” rain barrel workshops. During this permit year, the City added new pages to the website on rain barrels and water conservation.

On May 18, 2010, a meeting was held to review the existing web page and to determine if changes were needed to make it a better resource for Alexandria residents. Topics covered at the meeting included content and format, frequency of updates, and how to better involve the public using web-based tools, including allowing volunteers to sign up for events using the web site.

#### Measure of Effectiveness

A snapshot of the web site is found in Appendix A. The minutes of the web page review meeting are also found in Appendix A. Future annual reports will report on implementation of recommendations.

### **BMP1G Education Concerning Fecal Coliform Bacteria**

The City distributed its pet owner education brochure at all events in BMP 1A and also made the brochure available at Duncan Library and St. Elmo’s Coffee in Old Town Alexandria. In addition, the City animal shelter distributes this information to anyone adopting a pet. According to the Animal Welfare League of Alexandria, 364 dogs were adopted in Alexandria and each went home with a brochure in the adoption package. The brochures are also given to animal control officers to distribute to dog-walkers who may not be picking up after their dogs in parks or other public areas. In total, approximately 450 were distributed during the permit year.

#### Measure of Effectiveness

The City’s pet owner education brochure is located in Appendix A.

## **BMP1I Education Concerning PCBs**

The City is subject to a TMDL for PCBs as a result of contamination in the tidal portions the Potomac River and its tributaries. The City has adopted a standard condition in development special use permits (SUPs) requiring the screening for PCBs as part of the site characterization for sites that fall into the Department of Environmental Quality's identified high risk categories for PCBs. The language reads:

*e. The applicant shall screen for PCBs as part of the site characterization in compliance with the City's TMDL permit. [Internal Note: Required for MS4 permit compliance for VDEQ identified high risk category sites for potential sources of residual PCBs, which includes the following SICs: 26&27 (Paper and Allied Products), 30 (Rubber and Misc. Plastics), 33 (Primary Metal Industries), 34 (Fabricated Metal Products), 37 (Transportation Equipment), 49 (Electrical, Gas, and Sanitary Services), 5093 (Scrap Metal Recycling), and 1221&1222 (Bituminous Coal).*

During PY2, the City developed a brochure about PCBs and why they are a concern in Alexandria. This brochure will be provided to target property owners during normal interactions (inspections, permit reviews, etc.) or during the redevelopment process.

### Measure of Effectiveness

The City's PCB education brochure is located in Appendix A.

## **BMP1J Outreach to Minorities**

The City continues to distribute bi-lingual brochures/door hangers that emphasize the importance of not dumping anything into the storm drains. These are hung on doors in conjunction with neighborhood storm drain marking events. The bi-lingual brochure is distributed at all events in BMP 1A.

### Measure of Effectiveness

The bi-lingual brochure is found at <http://alexandriava.gov/tes/DEQ/pdfs/SpanishStormwater.pdf> and in Appendix A. In PY1, the City developed a map showing high densities of Spanish-speaking residents to help focus minority outreach efforts.

### 3.2 Public Involvement/Participation (MCM #2)

The following table is a summary of activities for Minimum Control Measure #2 and their completion status. Additional detail is provided after the table and in Appendix B.

BMP	Year	Measurable Goal	Status
<b>2A Public Notice and Participation</b>			
Meet all public notice requirements.	All	Document public notices, minutes, and other actions as appropriate.	✓ Complete
Post annual reports on web site.	All	Document that annual reports have been placed on the website.	✓ Complete
<b>2B Staff Support and Annual Water Quality Update to the EPC</b>			
Provide staff support to the Environmental Policy Commission.	All	Provide annual reports of the EPC as available and any relevant meeting minutes.	✓ Complete
Provide annual water quality update to the EPC.	All	Document the annual EPC update and provide a summary of any feedback.	✓ Complete
<b>2C City Sponsorship of Earth Day</b>			
Sponsor annual Alexandria Earth Day.	All	Document sponsorship and participation in Earth Day.	✓ Complete
<b>2D City Promotion of Clean Up Events</b>			
Sponsor, promote, and participate in clean up events by non-profits and the City.	All	Document promotion of events.	✓ Complete

#### BMP 2A Public Notice and Participation

The City implemented the following BMPs during PY2 in accordance with the MS4 Program Plan.

- The City met all requirements with respect to public notice and comments regarding the stormwater management program and permit requirements. There were no changes relating to the City’s Code that would require public notice.
- The City has posted the MS4 Program Plan and the PY1 Annual Report on the stormwater web site.

Once the PY2 annual report is finalized, it will be posted to the web site and distributed to the Environmental Policy Commission.

### Measure of Effectiveness

A screen shot of the stormwater web page that shows the on-line link to the MS4 Program Plan and the PY1 Annual Report is shown below.

**Stormwater Management**

**Municipal Separate Storm Sewer System (MS4) Stormwater Program Plan**  
Under the Virginia Stormwater Management Program (VSMP) permit regulations, the City is required to control stormwater pollution to the maximum extent practicable and to develop a pollution prevention plan – known as a Municipal Separate Storm Sewer System (MS4) Program Plan. The City's initial plan was developed in 2003 and has been revised to reflect changes to the City's latest state permit - effective July 2008. The permit contains Six Minimum Control Measures (MCMs) listed below. The City has developed appropriate and effective Best Management Practices (BMPs) to control stormwater pollution to the maximum extent practicable. The [MS4 Program Plan](#) contains the BMPs that address the MCMs, which are discussed in some detail here.

**MS4 Annual Report for 2008-2009**  
Also under the Virginia Stormwater Management Program (VSMP) permit regulations, the City is required to submit an annual report to the Virginia Department of Conservation and Recreation (DCR). The report provides details of the BMPs the City performs as part of the MS4 Program Plan to meet or exceed the control measures (MCMs) of the MS4 Phase II General Permit. The reporting period is from July 1, 2008 to June 30, 2009.

[MS4 Annual Report 2008-2009 Main Body](#)

[MS4 Annual Report 2008-2009 Appendix A](#)

[MS4 Annual Report 2008-2009 Appendix B](#)

[MS4 Annual Report 2008-2009 Appendix C](#)

[MS4 Annual Report 2008-2009 Appendix D](#)

[MS4 Annual Report 2008-2009 Appendix E](#)

[MS4 Annual Report 2008-2009 Appendix F](#)

### **BMP 2B Staff Support and Annual Water Quality Update to EPC**

The Office of Environmental Quality continues to provide ongoing staff support to the Environmental Policy Commission. Appointed by City Council, the EPC makes recommendations on environmental issues, including stormwater management. In order to ensure that the EPC provides a balanced perspective, its members represent predetermined stakeholder groups and professional backgrounds.

This BMP also requires an annual update to the EPC on water quality programming in the City. This is conducted at the same time as the review of the EPC's annual report, which occurred on July 21, 2009. The EPC has continued working with the City to implement a new, strategic collaborative planning process called *Eco-City Alexandria*. This effort includes water quality and had an aggressive public involvement and engagement component.

Measure of Effectiveness

Appendix B contains the EPC’s FY2009 annual report and the agenda for the July 21, 2009 EPC meeting.

**BMP 2C City Sponsorship of Earth Day**

The City continues to be an active sponsor of the Alexandria Earth Day event. The City’s support for this event serves to strengthen private environmental stewardship efforts and provides citizens with a broad range of educational opportunities. The website for official Alexandria Earth Day activities is [www.alexearthday.org](http://www.alexearthday.org). Earth Day celebrations were held on April 24, 2010.

Measure of Effectiveness

Despite rainy weather, more than 1,100 people attended the 2010 Alexandria Earth Day event. City staff was on hand to distribute materials and literature to educate residents about water quality and the importance of pollution prevention. The City’s press release and the Earth Day 2010 poster are included in Appendix B.

**BMP 2D Promotion of Clean Up Events**

The City continued to partner with non-profit volunteer organizations to promote and encourage stream clean-up events.

Measure of Effectiveness

The City sponsored or helped promote the following stream clean-up events. Press releases and event brochures are found in Appendix B. The efforts resulted in the removal of approximately 220 bags of trash from City streams and open space. Appendix B also has a breakdown of information from the Four Mile Run Stream Clean Up.

Activity	Date	Volunteers	Bags of Trash
Four Mile Run Stream Clean Up (Alice Ferguson Foundation Potomac River Watershed Clean Up)	April 10, 2010	82	157
Holmes Run Clean Up (Part of America Recycles Day with T&ES Solid Waste)	November 14, 2009	35	30
Virginia Clean Waterways Clean Up (Part of the International Coastal Clean Up)	September 26, 2009	12	16
Holmes Run Spring Clean Up	April 2009	≈20	15-20

### 3.3 Illicit Discharge Detection and Elimination (MCM #3)

The following table is a summary of activities for Minimum Control Measure #3 and their completion status. Additional detail is provided after the table and in Appendix C.

BMP	Year	Measurable Goal	Status
<b>3A Nuisance Abatement Hotline and Web Based Reporting Form</b>			
Maintain Nuisance Abatement Hotline and web based reporting form.	All	Provide a snapshot of the Nuisance Abatement Hotline web page and web based reporting form. Document the number and types of incidents handled.	✓ Complete
<b>3B Household Hazardous Waste (HHW) Program</b>			
Provide HHW and used oil collection services.	All	Provide copies of the program web site and brochures. Document program participants and the number of barrels accepted.	✓ Complete
<b>3C Prohibition on Illicit Discharges</b>			
Enforce prohibition on illicit discharges (Chapter 13 of City Code).	All	Report number of discharges and provide a narrative on how they were controlled or eliminated. Review procedures and make recommendations accordingly.	✓ Complete
<b>3D Illicit Disposal Hazards Education for City Employees</b>			
Provide new and existing staff with pollution prevention information through the “My City” program.	All	Provide copy of information given to new employees.	✓ Complete
<b>3E Mapping of All Permitted Stormwater Discharges</b>			
Keep map of permitted discharges up-to-date and distribute to field crews.	All	Provide up-to-date map and list of state-permitted stormwater discharges.	✓ Complete
<b>3F Prohibition of Outdoor Cleaning of Restaurant Equipment</b>			
Enforce prohibition on outdoor cleaning of restaurant equipment.	All	Document example SUP, if one has been done in the reporting period.	✓ Complete

<b>BMP</b>	<b>Year</b>	<b>Measurable Goal</b>	<b>Status</b>
<b>3G Storm Sewer System Map</b>			
Maintain an up-to-date storm sewer map.	All	Provide a summary of annual activities and a copy of the storm sewer outfall map.	✓ Complete
Identify and map physical interconnections with other MS4s.	2	Provide a map of physical interconnections with neighboring MS4s.	✓ Complete
Notify neighboring MS4s of physical interconnections	3	Provide a copy of the letter sent to neighboring MS4s.	✓ Completed Ahead of Schedule
<b>3H Outfall Reconnaissance</b>			
Conduct outfall reconnaissance as required by the permit.	2-On	Summarize outfall reconnaissance activities, including the total number of outfalls inspected.	✓ Complete
<b>3I High Risk Facility Evaluation for Bacteria and PCBs</b>			
Assess properties for sources of bacteria and PCBs and assign any “high risk” facilities.	2	Provide DCR with the outcomes of all evaluations, including the list of “high risk” facilities, as applicable.	✓ Complete
<b>3J Estimate of WLA Discharge for Bacteria and PCBs</b>			
Report WLA discharges to City streams.	All	Provide required discharge estimates.	✓ Complete

### **BMP 3A Nuisance Abatement Hotline and Web Based Reporting Form**

The City continues to maintain a Nuisance Abatement Hotline (703-836-0041), which is prominently displayed in many areas on the City’s web site. In addition, the City has an on-line complaint reporting form, which includes information on stormwater management. This can be accessed under “Report a Problem, Request a Service, Contact City Officials” on the City’s home page. Complaints are handled primarily through the newly formed Environmental and Industrial Unit (EIU), which is part of Building and Fire Code Administration, in coordination with the Office of Environmental Quality.

#### Measure of Effectiveness

The City received and handled 24 complaints about potential illicit discharges or other water quality related issues. Responsibility for entering this information into the Permit Plan database shifted from

OEQ to the EIU in late 2009. Both agencies coordinate on response and follow-up. Section 11 provides a summary of these complaints and a narrative on how each discharge was controlled or eliminated. No pattern of illicit discharges necessitated a review of policies, procedures, or ordinances.

### **BMP 3B Household Hazardous Waste Program**

The City maintains a vigorous HHW program, and participation has increased for the third straight year (FY2008 participation was 4,987 residents compared to 7,059 residents in FY2010). The web site (<http://alexandriava.gov/tes/solidwaste/info/default.aspx?id=19206>) includes information on the types of materials that may be left at the drop-off points and the schedule for drop-offs. The following table provides a snapshot of HHW program statistics:

Quarter	FY 2009		FY 2010	
	Residents	Barrels	Residents	Barrels
July -September	1,432	129	1,841	210
October - December	1,785	203	2,130	225
January - March	1,442	242	1,521	170
April - June	1,408	180	1,567	270
<b>Total</b>	<b>6,067</b>	<b>754</b>	<b>7,059</b>	<b>875</b>

#### Measure of Effectiveness

By providing citizens with an opportunity to properly dispose of HHW, the City hopes to reduce illegal dumping. An updated HHW program brochure is provided in Appendix C.

### **BMP 3C Prohibition on Illicit Discharges**

The purpose of this BMP is to ensure that the City has the legal tools necessary to effectively prohibit illicit discharges and to conduct necessary enforcement in the case of an illicit discharge. City Council has already adopted appropriate measures and provided documentation in previous annual reports. The City Attorney has reviewed the City Code and has determined that no additional changes are needed at this time.

#### Measure of Effectiveness

Section 11 provides a summary of illicit discharge complaints and a narrative on how each complaint was handled, including how any actual discharge was controlled or eliminated as appropriate. No pattern of illicit discharges necessitated a review of policies, procedures, or ordinances.

### **BMP 3D Illicit Disposal Hazards Education for City Employees**

The City has a brochure for all City operational employees that is available on the T&ES web page and is provided to them by their supervisor during orientation. The City’s “My City” program also includes a bullet point entitled “Illicit Discharges and Dumping to the Storm Drain System.” See BMP 6D for more information.

#### Measure of Effectiveness

A snapshot of the “My City” program web page and training provided to T&ES-Maintenance staff is found in Appendix F.

### **BMP 3E Mapping of All Permitted Stormwater Discharges**

The City continues to maintain a map of all state-permitted stormwater discharges within the City limits. The purpose of this BMP is to provide field operations staff with a visual tool for identifying permitted and non-permitted discharges.

#### Measure of Effectiveness

A current map and spreadsheet of state-permitted stormwater discharges, current as of July 2010, is located in Appendix C.

### **BMP 3F Prohibition of Outdoor Cleaning of Restaurant Equipment**

The City continues to include in the special use permit issued for restaurant facilities a statement that says: “Kitchen equipment shall not be cleaned outside, nor shall any cooking residue be washed into the streets, alleys, or storm sewers.”

#### Measure of Effectiveness

A sample of a recently approved SUP with the appropriate language regarding restaurant equipment is found in Appendix C.

### **BMP 3G Storm Sewer System Map**

The City implemented the following BMPs during PY2 in accordance with the MS4 Program Plan:

- The City has developed and continues to maintain a storm sewer system map. No additional outfalls have been added during PY2.
- The City identified and mapped physical interconnections with MS4s operated by Fairfax County and Arlington County through data sharing. VDOT is currently working within the Four Mile Run watershed. The scheduled start date for the outfall survey of the Cameron Run and Little Hunting Creek watersheds will follow.

- The City provided neighboring MS4s with letters informing them of the presence of downstream interconnections. This is a PY3 task that was done ahead of schedule.

Measure of Effectiveness

A map of physical interconnections with neighboring MS4s and letters send to these MS4s are found in Appendix C.

**BMP 3H Outfall Reconnaissance**

In accordance with the MS4 Program Plan, the City began its outfall monitoring program during PY2 using the prioritization process established in PY1. The City also created an IDDE SOP to ensure consistency in all outfall reconnaissance. The following provides a summary of the City’s efforts in PY2:

HUC	Minimum Required Inspections	Actual Inspections	Outfalls Requiring Further Investigation
PL25 – Four Mile Run	14	16	None
PL28 – Direct Potomac	2	2	None
PL26 – Cameron Run	25	37	1 Unlikely 1 Potential

Measure of Effectiveness

A detailed report of outfalls inspected, the results of each inspection, and any required follow-up activities can be found in Appendix C.

**BMP 3I High Risk Facility Evaluation for Bacteria and PCBs**

Under the City’s permit, all properties owned or operated by the City must be evaluated for potential sources of TMDL wasteload allocations. During PY1, the City compiled a list of all City-owned and operated facilities. During PY2 these properties were further assessed in the following manner:

- All facilities were assessed for whether PCBs are currently stored, or have been transferred, transported, or historically deposited in a manner than would expose it to precipitation.
- Facilities in the non-tidal portion of Four Mile Run watershed were assessed for whether fecal coliform bacteria is currently stored, or has been transferred, transported, or historically disposed in a manner than would expose it to precipitation.

Based on a review and assessment of U.S. EPA databases for registered PCB sites, Environmental Site Assessments (ESAs) that included a number of municipal facilities, interviews with City staff, and City land record databases the City conclude that PCBs have not been transferred, transported, or historically disposed of in a manner that would expose it to precipitation at any municipal facilities. Details of the review and assessment, including the research methodology, are found in Appendix C. Therefore, the City has determined that it does not have any facilities that should be categorized as a “high risk” for PCBs and a stormwater runoff characterization will not be performed for this WLA pollutant.

The City assessed the Fort Ward Dog Park area, which is located in the non-tidal portion of the Four Mile Run watershed, to determine if it should be considered a high risk facility for fecal coliform bacteria. The City has an ordinance in place for picking up after pets and displays this ordinance prominently on a sign in the park. The City also has an aggressive education and outreach program related to pet waste and provides trash receptacles throughout the park to encourage proper disposal of pet waste bags. Based on the success of these efforts, the City has concluded that Fort Ward Dog Park is not a high risk facility.

#### Measure of Effectiveness

A detailed report entitled “Assessment of Properties for Sources of PCBs and Bacteria and Assignment of High Risk to Municipal Facilities” is found in Appendix C.

### **BMP 3J Estimate of WLA Discharge for Bacteria and PCBs**

In accordance with the requirements of Section I B 9 of the General Permit, the City must conduct an annual characterization that estimates the volume of stormwater discharged in cubic feet, and the quantity of the pollutant identified in any WLA discharged in a unit consistent with any WLA. For Alexandria, this includes the non-tidal Four Mile Run, which is impaired for fecal coliform, and the entire Potomac River drainage area, which is impaired for PCBs.

#### Measure of Effectiveness

This requirement is addressed in Section 10.

### 3.4 Construction Site Stormwater Runoff Control (MCM #4)

The following table is a summary of activities for Minimum Control Measure #4 and their completion status. Additional detail is provided after the table and in Appendix D.

BMP	Year	Measurable Goal	Status
<b>4A Maintain DCR Erosion and Sediment Control Program Consistency</b>			
Maintain E&SC program consistency with State regulations.	All	Document the City’s consistent E&SC program, based on VDCR standards.	✓ Complete
<b>4B VSMP Permits for Construction Activities</b>			
Require construction site owners/operators to obtain VSMP stormwater construction permits.	All	Provide copies of modified checklists.	✓ Complete
<b>4C Citizen Complaint Reporting Mechanism</b>			
Maintain citizen complaint tracking system.	All	Report number of discharges and provide a narrative on how they were controlled or eliminated.	✓ Complete
<b>4D Land Disturbing Activities Tracking System</b>			
Collect all required information on land disturbing activities.	All	Summarize annual land disturbing activities.	✓ Complete

#### **BMP 4A Maintain DCR Erosion and Sediment Control Program Consistency**

The City’s Erosion and Sediment Control Program has been determined to be “consistent” with State regulations by the Virginia Soil and Water Conservation Board. Staff from DCR performed a review of the City’s Erosion and Sediment Control Program in December 2006. The City received very high marks, scoring 100/100 for Plan Review, 100/100 for Inspection, and 95/100 for Enforcement. The City entered into a Corrective Action Agreement (CAA) with DCR to correct minor ordinance-related issues after which the Board found the program to be fully consistent.

#### Measure of Effectiveness

The City of Alexandria’s E&SC program consistency status is documented at [www.dcr.virginia.gov/soil\\_and\\_water/eslpr.shtml](http://www.dcr.virginia.gov/soil_and_water/eslpr.shtml).

## BMP 4B VSMP Permits for Construction Activities

This BMP requires the City to ensure that all construction site owners and operators secure and implement a separate VSMP stormwater permit for construction activities. The City continues to include language in the plan review checklist stating that a stormwater permit is required. This language was further modified in PY1 to state that a VSMP permit must be secured prior to release of the final site plan. See below:

*All required permits from Virginia Department of Environmental Quality, Environmental Protection Agency, Army Corps of Engineers, Virginia Marine Resources must be in place for all project construction and mitigation work prior to release of the final site plan. This includes the state requirement for a VSMP permit for land disturbing activities greater than 2500 SF.*

The City’s Erosion and Sediment Control preliminary and final checklists were also modified in PY1 to check for a VSMP stormwater permit while conducting field visits. The City has also included this requirement on its website (see below) under “Construction Site Stormwater Runoff Control” at <http://alexandriava.gov/tes/oeq/info/default.aspx?id=3844>.

### Construction Site Stormwater Runoff Control

Due to earth-disturbing operations, construction sites can contribute more sediment to streams than can be deposited naturally during several decades. The resulting sedimentation and the contribution of other pollutants from construction sites can harm the City’s streams, the Potomac River and the Chesapeake Bay. Construction site runoff control is key to preventing sediment from earth-disturbing operations, as well as construction debris, from contaminating the City’s streams. Developers must keep sediment onsite. They must also control all construction site waste such as litter generated by job site workers and equipment waste materials such as used parts and oils.

Controlling sediment and debris at construction sites is crucial to protecting the environment, mitigating flooding by keeping this material out of our streams and storm drain system and ensuring safer vehicular travel by keeping mud out of the streets. This practice also reduces citizen complaints about mud in the street and loose litter.

The City’s efforts to control stormwater runoff from construction sites are derived from the State’s Erosion & Sediment Control Program and Chesapeake Bay Preservation Act. Local compliance of these two programs requires any construction project that disturbs at least 2,500 square feet must have an Erosion and Sediment Control Plan. Additionally, the Virginia Department of Conservation and Recreation (DCR) Stormwater Management Program (VSMP) requires the project to have a Stormwater Pollution Prevention Plan (SWPPP) related to the General Permit for Discharges from Construction Activities. Once the SWPP is prepared, a registration statement for coverage under the VSMP Construction General Permit must be submitted to the Virginia Department of Conservation and Recreation (DCR). Currently the City seeks to ensure that the project has coverage under a VSMP Permit, but DCR administers the VSMP permit.



### Measure of Effectiveness

The City’s Erosion and Sediment Control checklist and a representative copy of the plan note to meet this requirement are found in Appendix D.

## BMP 4C Citizen Complaint Reporting Mechanism

The City continues to maintain a mechanism to collect and process citizen complaints with regard to E&SC and illicit discharges. Complaints can be reported through 911, the City’s 24-hour Nuisance Abatement Hotline or on the City’s website (see BMP3A). Complaints are logged into the City’s PERMIT-PLAN system (Tidemark Advantage). Hard copies of closed complaint reports are kept on file.

### Measure of Effectiveness

Section 11 provides a summary of these complaints and a narrative on how each discharge was controlled or eliminated. Below is a screen shot of the PERMIT-PLAN complaint entry form.

The screenshot shows the 'Tidemark Advantage' software interface. The main window is titled 'Environmental Quality Complaints -- EQC2009-00073 Status CLO'. The form contains the following information:

- Name: LYNCH GEORGE F OR HELEN A MANOS
- Address: 21 W ROSEMONT AV
- Project Description: Project: DUMPED PAINT WASHED DO
- Complaint Description: Complaint was that paint was dumped and that City staff washed it down the drain.
- Map: 063.01 Blk: 06 Lot: 16 Zoning: R 5 Tract: 2015.00
- Received By: JEM
- Date Received: 6/18/09
- Assigned To: JESSE MAINES
- Date Completed: 6/18/09
- Water Area: BER BRANCH/HOOF'S f
- Receipt Type: EMAIL
- Complaint Type: WATER
- SUP: 0.75

### **BMP 4D Land Disturbing Activities Tracking System**

The City is required to report to DCR the number of regulated land disturbing activities and total disturbed acreage annually. These reports are also filed on a monthly basis with DCR.

### Measure of Effectiveness

Section 12 provides a summary of annual land disturbing activities and total disturbed acreage.

### 3.5 Post Construction Stormwater Management (MCM #5)

The following table is a summary of activities for Minimum Control Measure #5 and their completion status. Additional detail is provided after the table and in Appendix E.

BMP/Task	Year	Measurable Goal	Status
<b>5A BMP Data Tracking System</b>			
Track BMP information required for reporting.	All	Provide a spreadsheet of all BMPs with information required by DCR.	✓ Complete
<b>5B Implement BMP Maintenance Agreements</b>			
Execute BMP maintenance agreements.	All	Provide a sample of a properly executed BMP agreement.	✓ Complete
<b>5C Implement Environmental Management Ordinance</b>			
Implement the City's Environmental Management Ordinance.	All	Document consistency by the Chesapeake Bay Local Assistance Board.	✓ Complete
<b>5D Evaluate BMP Design Guidelines</b>			
Continue to evaluate BMP guidelines and incorporate into City documents as appropriate.	All	Summarize changes to standards and provide update on incorporating LID into the Northern Virginia BMP Handbook.	✓ Complete
<b>5E BMP Facility Inspection and Enforcement</b>			
Inspect all BMP facilities for proper operation at least once during the permit period.	All	Document the number of BMPs inspected each year and provide statistics on number of facilities requiring follow-up action.	✓ Complete

#### BMP 5A BMP Data Tracking System

The City has developed a system to track all permanent structural BMPs installed in the City and to collect information required under Section II B 5 b (6) of the General Permit.

#### Measure of Effectiveness

A map of all structural BMPs in the City is included in Appendix E. All required information for new facilities brought on line in PY2, including the types of BMPs, location, discharging water body, and number of acres treated, is provided in Section 13.

### **BMP 5B Implement BMP Maintenance Agreements**

The City continues to require the proper recordation and distribution of executed stormwater BMP maintenance agreements to ensure long term operation and maintenance of new BMPs. In addition, staff has also created a BMP maintenance vendors list for use by facility owners and operators.

#### Measure of Effectiveness

A copy of a properly executed BMP maintenance agreement during PY2 is located in Appendix E.

### **BMP 5C Implement Environmental Management Ordinance**

The Chesapeake Bay Local Assistance Board designated the City's Environmental Management Ordinance to be fully consistent with the Chesapeake Bay Preservation Area Designation and Management Regulations.

#### Measure of Effectiveness

Specific information on the City's consistency status can be found at [www.dcr.virginia.gov/chesapeake\\_bay\\_local\\_assistance/comply4status.shtml](http://www.dcr.virginia.gov/chesapeake_bay_local_assistance/comply4status.shtml).

### **BMP 5D Evaluate BMP Design Guidelines**

No new changes have been made to the City's design and performance standards. Once the new Virginia Stormwater Management Regulations are adopted, now anticipated between September and December 2011, the City will use that process as an opportunity to again review the sufficiency of these standards. The City has adopted a Green Building Policy to encourage development to meet green building standards such as LEED certification, which includes stormwater management. The policy is attached in Appendix E.

### **BMP 5E BMP Facility Inspection and Enforcement**

The MS4 Program Plan commits the City to inspecting all stormwater management facilities at least once during the five year permit window. The City inspected 77 out of 467 stormwater management facilities in PY2.<sup>1</sup> In PY1, 110 facilities were inspected, meaning that 187 of 467 facilities, or 40% of all facilities, have been completed to-date. This places the City on schedule for meeting the requirement to inspect all facilities during the five year permit window. The City provides pre- and post-inspection letters as well as a BMP maintenance brochure to each owner.

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<sup>1</sup> Note that 11 new facilities were added during PY2, making the total number of facilities 478. However, inspections for these new facilities will occur after the City has completed inspections for the 467 facilities that were on-line at the beginning of the permit cycle.

Measure of Effectiveness

A spreadsheet showing the results of facilities inspected in PY2 is located in Appendix E. Of the 77 facilities inspected, 30 required follow up maintenance.

**3.6 Pollution Prevention/Good Housekeeping for Municipal Operations (MCM #6)**

The following table is a summary of activities for Minimum Control Measure #6 and their completion status. Additional detail is provided after the table and in Appendix F.

<b>BMP</b>	<b>Year</b>	<b>Measurable Goal</b>	<b>Status</b>
<b>6A Environmental Coordinating Group</b>			
Coordinate ECG meetings.	All	Provide ECG meeting agendas.	✓ Complete
<b>6B Street Sweeping Program</b>			
Continue the City’s street sweeping program.	All	Document lane miles swept and cubic yards of debris collected.	✓ Complete
<b>6C Catch Basin and Inlet Cleaning Program</b>			
Continue the City’s catch basin and inlet cleaning program.	All	Document the number of catch basins and inlets cleaned.	✓ Complete
<b>6D “My City” Program</b>			
Implement the “My City” program.	All	Document ongoing implementation.	✓ Complete
<b>6E Pollution Prevention Training</b>			
Conduct annual training for operational employees.	All	Document all training activities.	✓ Complete
<b>6F Pollution Prevention Protocols and Inspection</b>			
Conduct facility inspections using SWPPP inspection checklist.	2	Provide completed inspection checklists.	✓ Complete
<b>6G Fertilizer and Pesticide Management</b>			

BMP	Year	Measurable Goal	Status
Investigate and implement certification needed to ensure that fertilizers and pesticides are applied according to manufacturer's recommendations.	2	Document the training and/or certification chosen by RP&CA and General Services, if applicable.	✓ Complete

**BMP 6A Establish Environmental Coordination Group**

The City's Environmental Coordination Group (ECG) continued to meet monthly during PY2 to help coordinate environmental issues, including water quality, across departmental lines.

The City also established a new Environmental and Industrial Use Unit (EIU) within the Office of Building and Fire Code Administration during PY1. The EIU provides a central location for the investigation, enforcement, and documentation of environmentally sensitive activities. It also provides better coordination and documentation across departmental lines, particularly with regard to monitoring the City's industrial uses. Three staff have been assigned to the EIU. The EIU coordination group also meets monthly.

Measure of Effectiveness

A sample ECG meeting agenda and sample EIU meeting agenda for PY2 are included in Appendix F.

**BMP 6B Street Sweeping Program**

The City continued to implement a City-wide street sweeping program.

Measure of Effectiveness

The City swept approximately 2,632 linear miles and collected 7,765 cubic yards of debris in PY2.

**BMP 6C Catch Basin and Inlet Cleaning Program**

The City continued to implement a City-wide catch basin and inlet cleaning program.

Measure of Effectiveness

The City cleaned 1,640 inlets and catch basins in PY2. The City has a total of approximately 2,000 inlets/catch basins, meaning that 82% were cleaned during PY2.

## **BMP 6D “My City” Program**

The City continues to implement the “My City” program to empower employees to report problems. In addition, the City continues to distribute a “Whose Job Is It?” brochure to all City staff. The brochure provides a one-page quick reference for reporting problems associated with City infrastructure, including stormwater management.

### Measure of Effectiveness

A screen shot of the “My City” program from the City’s intranet is found in Appendix F.

## **BMP 6E Pollution Prevention Training**

The City conducted a stormwater pollution prevention training workshop on June 24, 2010 for City maintenance and field crew staff. The City conducted an additional training workshop on June 28, 2010 during RP&CA Safety Day for 18 staff members. The agenda for both workshops included: (1) general background information on stormwater pollution and stormwater runoff requirements; (2) an overview of Alexandria’s facilities and operations; (3) a stormwater pollution prevention video; and, (4) training to identify illicit discharges. In addition, City staff and its consultant AMEC Earth & Environmental, Inc. conducted a walk-through of the T&ES maintenance facility on June 23, 2010.

### Measure of Effectiveness

The training PowerPoint presentation (June 24, 2010 version) and copies of sign-in sheets are included in Appendix F.

## **BMP 6F Pollution Prevention Protocols and Inspection**

The City’s permit requires a focus on inspection procedures and protocols to reduce illicit discharges from municipal sources. During PY1, the City identified all storage yards, fleet and maintenance shops, outdoor storage areas, waste transfer stations, and other municipal facilities that have the potential for significant material exposure. In addition, the City developed checklists for inspecting these facilities. These facilities include the following:

- T&ES Maintenance Division at 2900 Business Center Drive
- T&ES Maintenance Division at 133 South Quaker Lane
- General Services Fueling Station at 3550 Wheeler Avenue
- General Services Fleet Services Division at 133 South Quaker Lane
- T&ES Solid Waste Recycling and HHW at Wheeler Avenue
- T&ES Solid Waste at 2900 Business Center Drive and 133 South Quaker Lane
- T&ES Transportation Division Impound Lot at 5249 Eisenhower Avenue
- RP&CA Equipment Yards at 2900 Business Center Drive, 133 South Quaker Lane, Hensley Park, and Fort Ward Park
- Alexandria Fire Department at Various Stations

During PY2, the City inspected each facility that was identified as having the potential for significant material exposure using the new inspection checklist.

#### Measure of Effectiveness

A summary of inspection findings and follow-up activities and completed inspection checklists for each facility are found in Appendix F. In each case, OEQ staff followed-up with facility staff to discuss issues and to correct deficiencies.

### **BMP 6G Fertilizer and Pesticide Management**

The City's permit requires that measures be taken to ensure that City staff applies fertilizers and pesticides in accordance with manufacturer's recommendations. At this time, City employees do not perform applications. Contractors apply pesticides and fertilizers according to the manufacturer's recommendations. The City is currently working toward formally incorporating this requirement into procurement language. This task will be completed during PY3.

In addition, the City is closely tracking the Chesapeake Bay TMDL with regard to fertilizer applications on municipal lands and will implement any measures necessary to be consistent with the Commonwealth of Virginia's Watershed Implementation Plan (WIP).

#### Measure of Effectiveness

Because City employees do not apply pesticides or fertilizers, no additional action is needed regarding employee certifications and training. A copy of procurement language specifying that all contractors will apply pesticides and fertilizers in accordance with manufacturer's regulations will be included in the PY3 Annual Report.

## **4 Evaluation and Assessment of BMPs**

In accordance with Part II E 3 b of the General Permit, the City has reviewed and assessed the BMPs established to meet the requirements of the City's permit and have found them to be appropriate and effective.

## **5 Results of Information Collected**

No information, including monitoring data, was required to be collected or analyzed under the City's permit in PY2.

## 6 Summary of Year 3 Planned Activities

The following table summarizes by minimum control measure the planned activities to meet new PY3 measurable goals. These tasks are in addition to any ongoing activities summarized in this PY2 Annual Report.

BMP/Task	Year	Planned Activity
<b>Minimum Control Measure #1 – Public Education and Outreach</b>		
BMP 1H. Send letters and brochures to targeted businesses and industries.	3	The City conducted an assessment of business activities with a high potential for improper disposal of waste materials during the first permit. The City is on track for reassessing these businesses, updating the mailing lists, and sending targeted information on pollution prevention and the City's enforcement authority.
<b>Minimum Control Measure #2 – Public Involvement</b>		
No new tasks started in PY3	N/A	N/A
<b>Minimum Control Measure #3 – Illicit Discharge Detection and Elimination</b>		
BMP 3G. Notify neighboring MS4s in writing of the presence of storm sewer interconnections.	3	The City conducted this task ahead of schedule in PY2.
BMP 3I. Conduct site review and characterization for all City-owned high risk facilities.	3-4	During PY2, the City performed a comprehensive assessment of affected municipal properties and determined that none were high risk for the pollutants of concern. As a result, no additional characterization will be performed.
<b>Minimum Control Measure #4 – Construction Site Runoff Control</b>		
No new tasks started in PY3	N/A	N/A
<b>Minimum Control Measure #5 – Post Construction Stormwater Management</b>		
No new tasks started in PY3	N/A	N/A
<b>Minimum Control Measure #6 – Pollution Prevention and Good Housekeeping</b>		
BMP 6G. Implement certification needed to ensure that fertilizers and pesticides are applied according to the manufacturer's recommendation.	3-On	In PY2 the City determined that no additional certifications or training is required since the City relies solely on contractors for the application of fertilizers and pesticides.
BMP 6G. Revise procurement standards to require that contractors apply fertilizers and pesticides according to manufactures recommendations.	3	The City is currently working with procurement staff to determine the best way to implement this task. This task will be completed during PY3.

## **7 Changes in Identified BMPs or Measurable Goals**

The City's MS4 Program Plan is working to the satisfaction of the residents of Alexandria. No changes to identified BMPs or measurable goals are proposed at this time.

## **8 Reliance On Other Government Entities**

The City of Alexandria currently provides funding to the Northern Virginia Regional Commission to conduct supplemental public education and outreach activities (the regional Clean Water Partners program) and to maintain and update the Northern Virginia BMP Handbook.

## **9 Approval Status of Qualifying Local Programs**

The City of Alexandria has identified the Erosion and Sediment Control Ordinance, mandated by the Virginia Erosion and Sediment Control Regulations, to help satisfy Minimum Control Measure #4 - Construction Site Stormwater Runoff Control. In addition, the City has identified the Environmental Management Ordinance, mandated by the Virginia Chesapeake Bay Preservation Area Designation and Management Regulations, to help satisfy Minimum Control Measure #5 - Post Construction Stormwater Runoff Control.

The City's Erosion and Sediment Control Program has been reviewed and found consistent by the Virginia Soil and Water Conservation Board. In addition, the Chesapeake Bay Local Assistance Board (CBLAB) has also found the City's Environmental Management Ordinance to be fully consistent with State regulations.

## **10 Special Conditions Associated with TMDLs**

In Alexandria, the non-tidal Four Mile Run has a TMDL for fecal coliform bacteria and the Potomac River drainage area (the entire City) has a TMDL for PCBs. Because the City is subject to TMDL wasteload allocations, Alexandria must comply with the special conditions found in Section I B of the General Permit. For the annual report, this means providing:

- Copies of any updates to the MS4 Program Plan completed during the reporting cycle and any new information regarding the TMDL in order to evaluate its ability to assure the consistency of its discharge with the assumptions of the TMDL WLA.
- The estimate of the volume of stormwater discharged, in cubic feet, and the quantity of the pollutant identified in the WLA discharged, in a unit consistent with the WLA.

The City used the comprehensive update of the MS4 Program Plan, submitted to DCR in December 2008, as an opportunity to establish specific goals, schedules, and strategies to meet the special WLA-related requirements contained in the City's permit. The City re-evaluated

these goals, schedules, and strategies and notified DCR on January 7, 2010 that no modifications were necessary and that the MS4 Program Plan adequately addresses the permit requirements.

The following provides the required estimates for discharges to the non-tidal Four Mile Run and the Potomac River drainage area.

Four Mile Run Fecal Coliform TMDL

No change in land use categories occurred in the Four Mile Run watershed during PY2. Therefore, the estimate for total stormwater and fecal coliform bacteria discharged from the MS4 has not changed from the PY1 Annual Report.

Based on guidance from DCR, the City utilized the Basic L-THIA (Long-Term Hydrologic Impact Assessment) model developed by the Purdue Research Foundation and hosted by the Local Government Environmental Network. The City used 2010 land use information generated from its GIS to populate the model. The following land use categories and acreage were used:

Commercial/Office .....	33.94 acres
Industrial/Utility.....	30.08 acres
Medium/High Density Residential .....	739.30 acres
Low Density Residential.....	654.71 acres
Parks and Open Space.....	145.13 acres

Based on these inputs, the model estimates a total annual volume of stormwater discharged at 68,800,406.4 cubic feet. The initial analysis also estimated a total discharge of 298,748 million fecal coliform bacteria. The City then examined several other factors, most of which there is not sufficient data to base making changes to the estimate. However, the City has implemented a more aggressive dog owner education and outreach program. DNA analysis from the Four Mile Run TMDL predicts that 12.9% of the WLA is dog related. While there are scattered surveys, there is little research on the overall effectiveness of dog owner education programs in reducing bacteria and no information on efficiencies is found in the EPA’s Stormwater Menu of BMPs. However, using the Center for Watershed Protection’s Watershed Treatment Model (v. 3.1), the City estimates that the program has reduced fecal coliform bacteria in stormwater by 5%. This uses the land use categories above and an estimate of 45% awareness of the City’s outreach programs (as derived from estimates by the Clean Water Partners program). As a result, the final estimated total discharge is 283,811 million fecal coliform bacteria.

Potomac River PCB TMDL

No change in land use categories occurred in the PCB affected watersheds during PY2. However, a PCB remediation project conducted during PY2 at the Hume Substation tract, a former electrical substation, will result in a reduced discharge of PCBs from the MS4. However, due to the small size of the parcel (0.53 acres), the anticipated reduction of 0.0016 grams does not make a difference in the PCB discharge reported from PY1.

As with the Four Mile Run TMDL, the City utilized the Basic L-THIA model to generate base information. The following land use categories and acreage were used:

Commercial/Office .....	2,422.50 acres
Industrial/Utility.....	805.09 acres
Medium/High Density Residential .....	2,290.92 acres
Low Density Residential.....	3,317.47 acres
Parks and Open Space.....	896.56 acres

Based on these inputs, the model estimated a total annual volume of stormwater discharged at 364,197,319.2 cubic feet. In the absence of a more robust model, such as the one used to actually develop the Potomac River TMDL, it is very difficult to accurately predict the discharge of PCBs from the City of Alexandria.

In determining a PCB discharge, similar to the Potomac River TMDL, the City utilized the correlation between TSS and PCBs. The Basic L-THIA analysis estimated a total discharge of 1,093,562 pounds of TSS. Using the conversion formula developed for the Potomac River PCB TMDL, it is estimated that 1,093,562 pounds of TSS correlates to 26,168,450,932 nanograms (26.17 grams) of PCB.<sup>2</sup> It is noted that the equation is non-linear and will not produce the same results as if the City were to take actual TSS measurements from discrete storm events. It is also noted that this figure is significantly less than the baseline amount of 115 grams established for the Alexandria MS4 in the TMDL. The City will continue to work with DCR over the next year to refine the estimate methodology.

Summary of TMDL Discharges

Four Mile Run		Potomac River (City-Wide)	
Stormwater Discharge	Est. Fecal Coliform Discharge	Stormwater Discharge	Est. PCB Discharge
68,800,406.4 CF	283,811 million fecal coliform bacteria	364,197,319.2 CF	26.17 grams

<sup>2</sup> Discussion with Carlton Haywood, ICPRB, September 30, 2009. Mr. Haywood expressed the concern that the equation used ( $PCB_{3+} = 0.329 * TSS$  in  $mg/l^{0.5059}$ ) is non linear. A consequence is that a mean TSS value when plugged into the equation will not generate the same  $PCB_{3+}$  as the sum of  $PCB_{3+}$  values computed from a time series of TSS values from the individual flow events that make up the total stormwater volume. In order to address this concern, the City would need to get actual TSS measurements from discrete storm events. The City will work with DCR and ICPRB to refine the methodology for producing estimates of PCB discharges.

## 11 Illicit Discharges

The City identifies illicit discharges through the web based complaint form and the Nuisance Abatement Hotline. Complaints are handled collaboratively by the Office of Environmental Quality and the Environmental Industrial Unit, with the EIU recently taking on responsibility for tracking complaints in the Permit Plan database. The following provides information on all water pollution related complaints tracked by the City with a narrative on how the illicit discharge was controlled or eliminated, if applicable.

#	Open – Close Dates	Description	Narrative and Result
EQC2009-00077	07/01/2009 - 07/06/2009	Complaint that raw sewage was being discharged to storm grate inlet.	Plumber onsite in the parking lot. Talked to them and they said that the cleanout popped and sewage was discharging into the basement and on the ground. Were able to snake the line and replace the cleanout cap. Spoke to the complainant and told him there was no direct evidence of a discharge (although possible) and that the problem had been corrected.
EQC2009-00081	07/17/2009 - 07/17/2009	Report of possible illicit discharge behind the print shop.	Fire Emergency Hazmat tested stained water. Appears to have originated from a busted air condensate line that is dripping on a tire and then running down the pavement to a grate inlet in the back alley. Hazmat found it to be non-oil, neutral pH and therefore not applicable to further response by them. Staining on the pavement believed to be legacy/historic and that this discharge is from the busted AC condensate line.
EQC2009-00082	07/31/2009 - 08/04/2009	Complaint about sewer bypass pipes and trucks in Hooffs Run.	Visited the site to inspect. Observed the black bypass pipes in the run from the Alexandria Sanitary Authority (ASA) sewer relining project being performed. There were trucks on/adjacent to the west bank of Hooffs Run. A newly-installed sewer junction box and manhole was observed. Sent email to citizen explaining the work and requested they contact ASA for further explanation if needed.
EQC2009-00084	08/10/2009 - 08/10/2009	Valley Proteins spilled 55-gallon drum of used cooking grease in the alley at Five Guys.	Investigated extent of release by popping manholes. Valley Proteins cleaned up the spilled material with dry absorb. Also, the City contracted to have the combined system cleaned and billed Valley Protein.

#	Open – Close Dates	Description	Narrative and Result
EQC2009-00085	08/18/2009 - 08/18/2009	Resident observed water being discharged from curb outfall into Prince Street and into CI at South Washington.	Potable water valve accidentally left open. After inspection, the valve was closed. No further action needed.
EQC2009-00090	08/22/2009 - 08/25/2009	Erosion and Sediment Control complaints at the Triangle Property.	Silt fence was down in a number of locations and curb inlets not protected. Referred to C&I for enforcement action.
EQC2009-00098	09/09/2009 - 09/10/2009	Fish kill in Holmes Run that is probably due to water main break at London Park Apartments.	Operations and OEQ staff observed dead fish and turbid water that was traced back to an outfall from the London Park Apartments. Staff observed a crew backfilling a trench for a water main pipe that had been repaired. Notification sent to DEQ Northern Regional Office.
CMP2009-05069	08/18/09	Permit check - excavation in rear of property	Referred to T&ES for permit check and follow up.
CMP2009-05303	09/01/09	Abandoned underground tank.	While excavating the old ARHA site, workers discovered a 100 gallon tank at this site. Tank appears to be leaking water. There was a smell of fuel in the vicinity. DEQ contacted. Obtained FPP for tank removal and performed soil sampling in the area around tank.
CMP2009-05563	09/17/09	Cooking oil spill in loading dock.	Cited violation to clean up drain in loading dock 3. Gave Notice of Violation to shopping mall manager.
CMP2009-06203	11/04/09	Complaint about water with possible chemicals from dentist office leaking into basement business.	Spoke with caller and dentist. Water does not have chemicals in it. Management company was on scene fixing leak.
CMP2009-06501	11/30/09	Report of antifreeze in drains.	Located drains and observe no antifreeze. Case closed.
CMP2009-06671	12/09/09	Possible dumping investigation. Complaint that FBT Tile & Marble specialist washing off tools with caulking and cement.	No discharge observed. Will continue to monitor location for future problems.

#	Open – Close Dates	Description	Narrative and Result
CMP2010-00146	01/05/10	Green substance in pond reported.	Green substance in pond reported. HAZMAT team responded and ran tests. All came back negative for abnormal pH and waste water. Forwarded samples to consolidated labs for testing.
CMP2010-00529	01/29/10	Sheen reported on Potomac River.	At approximately 14:45 Hours while patrolling the Potomac River, the Coast Guard reported a sheen in the water in the rear of the Mirant Plant. They immediately reported it to the Mirant Plant staff who in turn reported it to the National Response Center (NRC reporting number #929921). The area was about 15x30 in size and after close examination it was determined that it did not originate from the plant but it migrated to a boomed area directly behind the plant near outfalls # 3 and # 4 which are no longer in use and have been closed. Staff arrived on the scene and noticed an odor of diesel fuel, which the Mirant Plant staff reported was a result of a foam mattress soaked with fuel that had floated into this area. The foam mattress had already been bagged and was awaiting pick up by the environmental contractor (Industrial Marine Services).
CMP2010-00726	02/17/10	Response to overturned sailboats to ensure no fuel spill.	<p>Responded to # 1 Marina Drive and spoke to Ron Hessler, Assistant Manager for the marina and he stated that on the first snow storm (Saturday, February 6) six sail boats overturned and sunk. He stated that none of the sail boats had any portable or onboard fuel tanks. Most employees at the marina reported to work by Sunday afternoon to try and upright the boats and clear the snow.</p> <p>On Tuesday, February 9 (second snow storm) three more sailboats tipped over for a total of nine sailboats under water. Of these, two remain under water and the owners have yet to be contacted for their approval to lift the boats out of the water. On inspection, there was no evidence of petroleum products in the water.</p>
CMP2010-00727	02/16/10	Follow up to a fuel spill.	Met with Hertz representatives regarding a fuel spill and was told Atlas Environmental responded for the clean up. Later spoke with Atlas and they stated that a boom was placed in storm drain to absorb any material that migrated into drain but will not be able to remove boom until all snow was removed over drain. They will email me all clean up documentation by next week

#	Open – Close Dates	Description	Narrative and Result
CMP2010-01199	03/11/10	Green substance found floating on roadway and in storm drain.	HAZMAT responded to the scene and ran several tests. Substance came back negative on all tests and the pH level was neutral. It appears someone had flowed a fire hydrant causing all the dried liquids on the roadway to start flowing into the storm drain. Case closed.
CMP2010-01724	04/07/10	Hot water leak undermining bike trail behind power plant	Arrived on scene and spoke to plant manager who stated they are working on repairing a hot water line. City contacted National Park Service and advised them about damage to the bike trail. They will be responding to the scene. Cones were placed in area as precaution.
CMP2010-02005	04/21/10	Response to reported oil slick under I-395 bridge near Beauregard Street.	City staff walked Holmes Run and did not find anything out of the ordinary. Staff conducted two chemical classifier strip tests with negative results. Another test was run where sheet was observed on top of a pool of water. Test came out negative. Case closed.
CMP2010-02057	04/23/10	Complaint of carpet cleaner dumping water.	Report of backwash from clean water tank. Ran pH test, water test, and chemical classification test. All tests negative with no violations.
CMP2010-02441	05/10/10	Complaint of draining pool water.	City staff ran test strips with negative results. No chlorine found in water.
CMP2010-02603	05/19/10	Green dye found at outfall behind the Mirant Plant	While checking the area behind the Mirant, City staff discovered a greenish tint to the water at the outfall. Staff advised the plant staff and they responded to the area. Chemical test strip came back negative for hydrocarbons. Plant staff advised City staff that it was a green dye that they had previously used to find a leak and that it was probably resurfacing. Photos were taken and sent to AFM Furr and plant staff.
CMP2010-02984	06/11/10	Investigation of workers cleaning ovens in parking lot.	Workers using soap and water. City staff advised them they could not discharge soapy water onto the storm sewer system.

## 12 Land Disturbing Activities

The following table provides an annual summary of land-disturbing activities data tracked under Section II 4 c of the General Permit. This data is also provided to DCR on a monthly basis.

City Reference #	Location	Month/Year	Disturbed Acres
GRD2009-00014	3801 West Braddock Road	7/31/2009	0.32
DSP2007-00031	3300 Duke Street	8/25/2009	0.72
PLT2007-00003	801 Commonwealth Ave	8/5/2009	0.45
GRD2009-00019	630 N. Columbus Street	8/21/2009	0.047
GRD2009-00023	98 Arell Court	8/11/2009	0.08
PLT2008-00025	400 Fontaine Street	8/31/2009	0.0567
PLT2008-00027	400 Fontaine Street	8/31/2009	0.0413
GRD2009-00020	714 Wythe St	10/13/2009	0.137
DSP2008-00017	4615 Seminary Rd/ 4550 W. Braddock Rd	11/4/2009	0.82
GRD2007-00033	418 E. Alexandria Ave	11/13/2009	0.2236
DSP2007-00025	2950 Eisenhower Ave	12/3/2009	1.82
DSP2007-00014	2600 Business Center Dr	12/31/2009	13.22
GRD2009-00003	214 W. Alexandria Ave	12/8/2009	0.74
PLT2007-00027	1200 Duke Street	12/11/2009	0.4744
DSP2008-0013	918 N. Columbus	1/7/2010	3.47
GRD2010-00001	3 & 5 Sunset Drive	1/27/2010	0.1644
DSP2009-00005	Mark Center Drive	2/22/2010	3.44
GRD2009-00021	3002 Cameron Mills Rd	2/3/2010	0.1329
GRD2009-00018	1200 N. Quaker Lane	2/19/2010	0.335
GRD2010-00008	112 & 112A E. Glebe Rd	2/19/2010	0.1469
GRD2009-00007	3600 Commonwealth Ave	3/10/2010	0.14
GRD2010-00013	4825 Mark Center Dr	3/16/2010	0.11
GRD2010-00014	116 N. Early St	3/16/2010	0.143
GRD2010-00020	1100 N. Fayette Street	4/15/2010	0.11
GRD2010-00002	926 N. Lindsay Place	4/29/2010	0.112
DSP2009-00009	5000 Polk Avenue	5/28/2010	3.48
GRD2010-00012	307 Park Rd	5/5/2010	0.1318
GRD2010-00005	3301 Landover St.	5/6/2011	0.1926

City Reference #	Location	Month/Year	Disturbed Acres
GRD2010-00016 Charuhas Property, 634 S. Pitt St	634 S. Pitt St.	5/19/2010	0.07
PLT2008-00024	25 E Masonic View	5/28/2010	0.1239
GRD2010-00019	4800 Ben Brenman Dr	6/1/2010	2.85
GRD2010-00021	1101 Janneys Ln	6/9/2010	0.73
GRD2010-00006	107 Stewart Ave	6/8/2010	0.099
GRD2010-00011	4109 Orleans Pl	6/22/2010	0.23
GRD2010-00009	5501 Sanger Ave	6/29/2010	0.101
GRD2010-00023	5651 Rayburn Ave	6/30/2010	0.075
GRD2010-00024	5651 Rayburn Ave	6/30/2010	0.17
<b>Total Sites:</b>	<b>37</b>	<b>Total Acres</b>	<b>35.7075</b>

### 13 Information on Stormwater Management Facilities

The following table provides a summary of new permanent stormwater management facilities brought on-line in PY2. In total, 10.083 additional acres are now treated. The PY1 Annual Report contained information on all previously installed stormwater management facilities in the City of Alexandria. As required in the General Permit, information for each facility includes BMP type, HUC, impaired water, and number of acres treated. This information is also found as an Excel spreadsheet on a CD in the back pocket.

BMP ID	BMP TYPE	LOCATION	HUC	DISCHARGES TO	ACRES TREATED
2005000301	STORMCEPTOR	INOVA ALEXANDRIA HOSPITAL EXPANSION	PL26	HOLMES RUN	2.35
2005000302	STORMCEPTOR	INOVA ALEXANDRIA HOSPITAL EXPANSION	PL26	HOLMES RUN	0.93
2005001601	CDS HYDRODYNAMIC	FANNON PETROLEUM	PL26	HOOFFS RUN	1.57
2006002301	CDS HYDRODYNAMIC	EDMONSON PLAZA	PL26	HOFFSS RUN	0.842
2005002401	STORMCEPTOR	900 N WASHINGTON ST	PL28	CSO-PENDLETON	1.05

2006001201	AQUASWIRL	CARLYLE CENTRE	PL26	HOOFFS RUN	0.69
2006001202	AQUASWIRL	CARLYLE CENTRE	PL26	HOOFFS RUN	2.41
2009001401 GRD	FILTERRA	MINNIE HOWARD SCHOOL	PL26	TAYLOR RUN	0.068
2009001402 GRD	FILTERRA	MINNIE HOWARD SCHOOL	PL26	TAYLOR RUN	0.069
2009001403 GRD	FILTERRA	MINNIE HOWARD SCHOOL	PL26	TAYLOR RUN	0.052
2009001404 GRD	FILTERRA	MINNIE HOWARD SCHOOL	PL26	TAYLOR RUN	0.052
				<b>TOTAL</b>	<b>10.083</b>

## 14 New or Terminated Signed Agreements

There are no new or terminated signed agreements between the City of Alexandria and any third parties for the purpose of implementing minimum control measures.

## 15 Written Public Comments

No written comments were received on the PY1 Annual Report or during the public comment period on the MS4 Program Plan.

