

# MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4)

## PROGRAM PLAN

VPDES PERMIT NUMBER VAR040057

June 2014



**Eco-CITY**  **ALEXANDRIA**

Department of Transportation and Environmental Services  
Stormwater and Sanitary Infrastructure Division  
2900-B Business Center Drive, Alexandria, VA 22314  
703-746-4014

# MS4 PROGRAM PLAN

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June 2014

Prepared by City staff and



URS No. 15303979

City of Alexandria P.O. No. 14001471

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# MS4 PROGRAM PLAN

VPDES PERMIT NUMBER VAR040057

## A. INTRODUCTION

Stormwater discharges within and from the City of Alexandria are regulated under the terms of a Virginia Pollutant Discharge Elimination System (VPDES) *General Permit for Discharges from Small Municipal Separate Storm Sewer Systems* (General Permit No. VAR040057). This Municipal Separate Storm Sewer System (MS4) permit is issued to the City by the Virginia Department of Environmental Quality (DEQ), consistent with the provisions of Section 402 of the Clean Water Act and the Virginia Stormwater Management Act, which authorizes the Virginia Stormwater Management Program (VSMP) regulations.

The terms of this MS4 General Permit require the City to prepare an MS4 Program Plan and to operate its stormwater program according to that plan. Specific items to be addressed are prescribed in the permit.

The City was originally issued Permit No. VAR40057 on July 8, 2003 and successfully met the requirements over the initial five-year permit period. The permit was re-issued on July 9, 2008, and was subsequently reissued through June 30, 2018.

Promulgation of the Chesapeake Bay Total Maximum Daily Load (TMDL) regulations and extensive changes to the VSMP regulations have manifested themselves in the City's current MS4 permit. While the basic framework has not changed, several permit modifications require significant changes to the City's stormwater management program. This Program Plan document describes specifically how the City will meet the requirements of its new permit through 2018.

To achieve the required water quality goals, the permit requires the City to control the discharge of pollutants by addressing the following six minimum control measures (MCMs).

1. Public Education and Outreach on Stormwater Impacts
2. Public Involvement/Participation
3. Illicit Discharge Detection and Elimination
4. Construction Site Stormwater Runoff Control

5. Post-Construction Stormwater Management
6. Pollution Prevention/Good Housekeeping for Municipal Operations

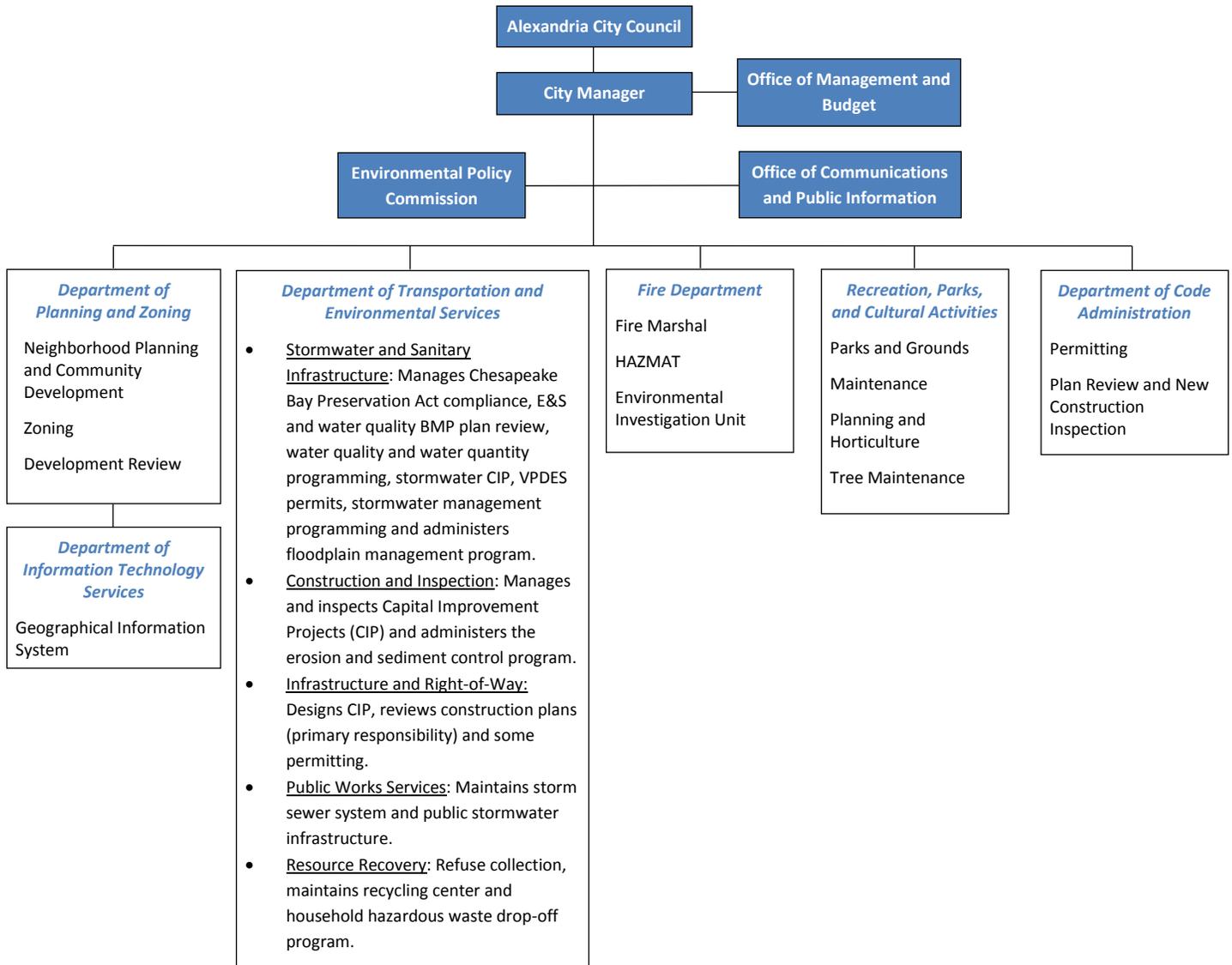
With the 2013 reissuance of the permit, special conditions were added to address approved local TMDLs and the Chesapeake Bay TMDL. These special conditions are new to Virginia MS4 permits. Alexandria must develop TMDL Action Plans for each TMDL that has an approved waste load allocation (WLA). The burden lies with the City to determine how to reduce pollutant discharges below the levels that comprise the WLAs. EPA anticipates that these reductions will be achieved through the implementation of best management practices (BMPs) identified in the forthcoming TMDL Action Plans that the City must prepare. The pollutants of concern are nitrogen and phosphorus (nutrients), sediment, bacteria, and polychlorinated biphenyls (PCBs).

Due to the extent and scale of the new requirements, the permit allows the City to update its Program Plan according to a timetable, with specific items to be completed and implemented annually. For this reason, the Program Plan must be a 'living' document, with its first major update due at the end of Permit Year 1 (PY1, ending on June 30, 2014). Subsequent modifications prescribed in the City's MS4 permit will require significant additions to this Program Plan document, which will have to be updated annually and maintained continually.

A key obligation contained in the permit is the requirement to submit an Annual Report by October 1 of each year. This Program Plan identifies the steps that are necessary for the City to maintain compliance with its MS4 General Permit, and the annual report requirements for each permit year. In effect, the Program Plan comprises a road map that must be followed, and will require ongoing management efforts and substantial resource commitments on the part of the City.

## B. ORGANIZATION OF THE CITY'S STORMWATER MANAGEMENT PROGRAM

While stormwater activities and functions are divided among several different departments and divisions, the Department of Transportation and Environmental Services has primary responsibility for coordinating compliance with the permit. VPDES permit compliance activities are coordinated through the Stormwater and Sanitary Infrastructure Division within the Department of Transportation and Environmental Services (T&ES-S&SI). While T&ES-S&SI is responsible for overall permit coordination, including the submittal of annual reports, several other departments and divisions have important roles in implementing the VPDES permit. The following organizational chart provides a summary of roles and responsibilities:



**Figure 1. Organization of the City of Alexandria’s Stormwater Management Program**

Department and division acronyms are used in this MS4 Program Plan (particularly in the BMP descriptions) are listed in Table 1.

**Table 1. Department and Division Acronyms**

<b>Acronym</b>	<b>Department or Division</b>
ARE	Alexandria Renew Enterprises
Code	Department of Code Administration
CWP	Northern Virginia Clean Water Partners
ECG	Environmental Coordinating Group (from T&ES, Health Department, FD, RP&CA, P&Z, General Services, Alexandria Renew Enterprises, Alexandria City Public Schools, Virginia American Water and OCPI)
EPC	Environmental Policy Commission
FD	Fire Department
GS-FSD	Department of General Services, Fleet Services Division
ITS	Department of Information Technology Services
ITS-GIS	Department of Information Technology Services, Geographic Information Systems Division
OCPI	Office of Communications & Public Information
P&Z	Department of Planning and Zoning
RP&CA	Department of Recreation, Parks, and Cultural Activities
T&ES	Department of Transportation and Environmental Services
T&ES-I&ROW	Department of T&ES, Infrastructure and Right-of-Way Division
T&ES-S&SI	Department of T&ES, Stormwater and Sanitary Infrastructure Division
T&ES-C&I	Department of T&ES, Construction and Inspection Division
T&ES-PWS	Department of T&ES, Public Works Services Division
T&ES-RR	Department of T&ES, Resource Recovery Division

## C. SPECIAL REQUIREMENTS FOR TMDLS AND IMPAIRED WATERS

The City's *General Permit for Discharges from Small Municipal Separate Storm Sewer Systems* (General Permit No. VAR040057) makes many references to "TMDL Action Plans" and "TMDL Implementation Plans." The distinctions between an 'Action' and 'Implementation' plan—as explained by Charlie Lunsford at DEQ—are as follows.

*"A **TMDL Implementation Plan (IP)** is designed to provide management measures and corrective actions that can be employed **to meet TMDL pollutant nonpoint source reduction goals (load allocations) from the TMDL**. The pollutant reductions are assigned to the various contributing land uses in the impaired watershed. The IP includes a staged implementation timeline, agreed upon by the various affected stakeholders, to eventually attain the pollutant water quality standard. IPs may be utilized by localities that have Phase I or Phase II MS4 permits for pollutant reduction strategies; however, they are **not considered a requirement for permit compliance**. The IPs **do not prescribe specific BMPs for localities to implement to meet their MS4 requirements**. The BMPs prescribed in IP are a "broad brush" applying a menu of appropriate BMPs based on pollutant reduction efficiencies for each specific land use in the watershed contributing to the pollutant loading entering the impaired water body. TMDL Action Plans will be prescribing BMPs to reduce pollutant loadings from small drainage areas that contribute a pollutant loading to the permitted outfall.*

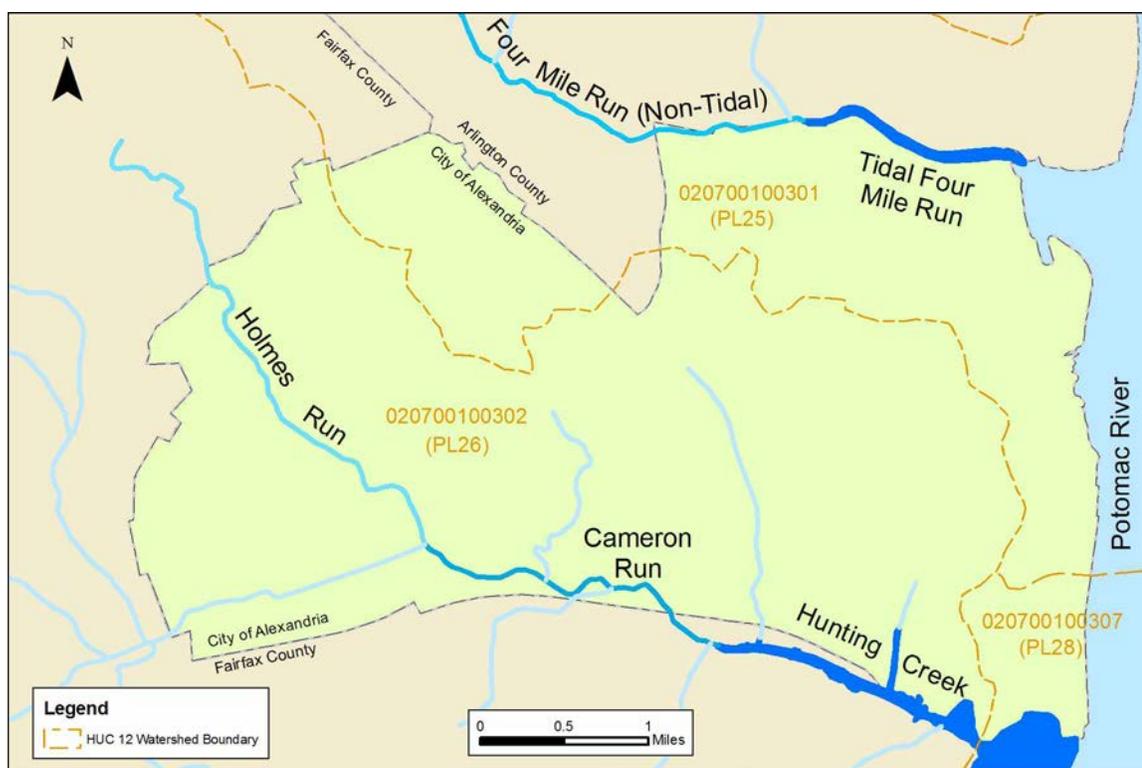
*"A **TMDL Action Plan (AP)** is required by the MS4 permit and is designed for a permittee **to address the waste load allocations (WLAs) assigned in their permit**. TMDL Action Plans should describe the Best Management Practices (BMPs), either structural or non-structural, other interim milestone activities, and monitoring strategies the permittee will use to address their TMDLs. MS4 permitted localities will develop their own timelines for attaining local TMDL WLAs (generally bacteria) and present them in the TMDL Action Plans. The timeline will track with the permit reissuance schedule. The Chesapeake Bay Watershed Plan set pollutant reduction targets for sediment and nutrients over a 15-year permit cycle. Localities in the Bay watershed will be required to develop a Chesapeake Bay TMDL Action Plan (draft guidance drafted by DEQ) and Local TMDLs Action Plan (guidance under development by DEQ).*

*"MS4 localities are encouraged to participate in local TMDL and IP development for discussion and exchange of information on various strategies to reduce the pollutant of concern loadings in the watershed. Their knowledge on various stormwater BMPs and treatment systems, and local conditions that impact the functionality and maintenance of these BMPs and systems is valuable."*

Charlie Lunsford, DEQ, June 2014 (emphasis added)

## APPROVED LOCAL TMDLS

In 2010, the Environmental Protection Agency approved two new bacteria TMDLs for previously impaired waters receiving stormwater runoff from Alexandria's regulated MS4. The new TMDLs apply to the Tidal Four Mile Run watershed and the Hunting Creek, Cameron Run, and Holmes Run watersheds (see Figure 2). In both recent TMDLs, bacterial water quality is based on levels of *E. coli*. Prior to the addition of these two TMDLs in 2010, the City had two existing TMDLs within its MS4 area. A bacteria TMDL for fecal coliform was approved in 2002 for the non-tidal portion of Four Mile Run, and in 2007, a TMDL for PCBs was approved for the Tidal Potomac watershed.



**Figure 2. Alexandria's Waterways with Local TMDLs**

Approved local TMDLs for the City of Alexandria are listed in Table 2. This data was retrieved from DEQ's website on June 9, 2014. All four TMDLs are in the Potomac River Basin. Electronic versions of this Program Plan document contain active links to DEQ source documents and data (where underlined).

**Table 2. Approved TMDLs for the City of Alexandria**

TMDL Project	Pollutant	Final Report Link	EPA Approval Date	SWCB Approval Date	Comments
<a href="#">Four Mile Run Watershed</a> (Non-Tidal Portion)	Bacteria (Fecal Coliform)	<a href="#">Final Report Addendum</a>	05/31/2002	06/17/2004	
<a href="#">Hunting Creek, Cameron Run, Holmes Run</a>	Bacteria ( <i>E. Coli</i> )	<a href="#">Final report</a>	11/10/2010	08/04/2011	Hunting Creek was included on the 1999 Consent Decree for bacteria. Cameron Run and Holmes Run are non-Consent Decree segments impaired for bacteria.
<a href="#">Potomac River Watershed PCB</a>	PCB	<a href="#">Final report Addendum</a>	10/31/2007	04/11/2008	
<a href="#">Tidal Four Mile Run Watershed</a>	Bacteria ( <i>E. Coli</i> )	<a href="#">Final report</a>	06/14/2010	09/30/2010	

In 2004, a TMDL implementation plan was developed for the non-tidal Four Mile Run watershed. The implementation plan outlined specific actions for all localities with watersheds draining to Four Mile Run. Those actions assigned to the City of Alexandria were listed in the 2008-2013 MS4 Program Plan, and are incorporated into the City’s BMPs for the six minimum control measures required by the VSMP permit. The City’s MS4 program plan was also updated to address BMPs and actions related to PCBs and the Tidal Potomac TMDL.

The Implementation Plan for Four Mile Run was a 10-year plan, and called for an evaluation of the plan to be performed during the tenth year, which occurred in 2013. The results of this evaluation will be very important to the City, as many of the actions assigned to the City in the implementation plan are likely to be repeated in the newly required action plans for the 3 bacteria TMDLs.

The City has performed sampling as required by the 2008-2013 MS4 permit, and to comply with the specific TMDLs for both the Four Mile Run bacteria TMDL as well as the Potomac River TMDL for PCBs. During the previous permit cycle, the City estimated annual loads of fecal coliform bacteria as well as PCBs, based on guidance from DCR by using the Basic L-THIA (Long-Term Hydrologic Impact Assessment) model developed by Purdue Research Foundation. The estimated annual pollutant loads were included with the City’s MS4 Annual reports.

New requirements in the 2013-2018 permit require the City to develop TMDL Action Plans for all approved Local TMDLs by PY2. Guidance from DEQ on developing these actions plans is forthcoming, but the plans are to include the following elements:

- A list of Best Management Practices (BMPs), either structural or non-structural, beyond those listed in Section II.B. of the permit that will be used to address pollutants listed in the TMDL.
- Enhanced public education and outreach as well as employee training to address TMDL pollutants.
- Assess all areas owned or operated by the City that may contain significant sources of the pollutants of concern and may be a source of the TMDL pollutants.
- Develop and implement a method to assess TMDL Action Plans for their effectiveness in reducing the pollutants identified in the WLAs. The evaluation shall use any newly available information, representative and adequate water quality monitoring results, or modeling tools to estimate pollutant reductions for the pollutant or pollutants of concern from implementation of the MS4 Program Plan. Monitoring may include BMP, outfall, or in-stream monitoring, as appropriate, to estimate pollutant reductions.

The Action plans for Local TMDLS will be included in Appendix A.

## CHESAPEAKE BAY TMDL

The Chesapeake Bay TMDL was rushed to final publication in the Federal Register well before the technology required to support the published waste load allocations was fully vetted. The EPA acknowledged that it did not have time to follow standard quality control procedures and meet the deadlines mandated by the Principal Steering Committee (authorized by Executive Order 13508). Several deficiencies with the Chesapeake Bay Watershed Model, which was used to generate WLAs for the TMDL, were noted by Virginia Secretary of Natural Resources Douglas W. Domenech. In official correspondence and meetings between the Commonwealth and EPA, Secretary Domenech documented specific problems with the computational results and the input data used in the modeling.

Given that no locality distinctions were used in the Chesapeake Bay Watershed Model modeling (computational boundaries were set based on segmentshed and watershed boundaries, not by MS4 boundaries or municipal limits), a workaround was agreed to by EPA for MS4 permitting purposes. Specifically, the MS4 permits issued in Virginia contain:

- Tables with river-basin-specific **pollutant loading rates** for Nitrogen, Phosphorous, and Total Suspended Solids from regulated urban pervious and impervious land use categories. These tables are designated as **Tables 2a – 2d** in the MS4 General Permit and approximate existing conditions pollutant loading rates as of June 30, 2009.

- Tables with river-basin-specific **required pollutant reduction rates for the 2013-2018 permit cycle** for Nitrogen, Phosphorous, and Total Suspended Solids from regulated urban pervious and impervious land use categories. These tables are designated as **Tables 3a – 3d** in the MS4 General Permit and establish the required pollutant reductions that must be achieved during the current MS4 permit cycle.
- A table with river-basin-specific **nutrient loading rate ratios to offset increased loads from new sources** that initiated construction between July 1, 2009, and June 30, 2014, that disturbed one acre or greater as a result of the utilization of an average land cover condition greater than the Commonwealth’s average 16% impervious cover (the previous pollutant treatment standard) for the design of post-development stormwater management facilities. This table is included as **Table 4** in the MS4 General Permit, and the City must offset five percent of the calculated increased load from these new sources during the permit cycle. Pollutant loads from projects that are grandfathered under the new VSMP regulations will be ‘offset’ by the City in this manner.

The pollutant load reductions required under the Chesapeake Bay TMDL have been incorporated into the City’s MS4 General Permit by prescribing the rates documented above and requiring a Chesapeake Bay TMDL Action Plan as a condition in the permit. The City must prepare the required action plan by June 30, 2015 using guidance that has not yet been finalized by DEQ (as of June 2014 when this Program Plan was prepared).

## D. MINIMUM CONTROL MEASURES

The following sections describe the best management practices (BMPs) that the City of Alexandria will utilize and implement to meet each of the six minimum control measures. Included with each BMP is a description of:

- Policies, ordinances, schedules, inspection forms, written procedures, and other documents necessary for BMP implementation.
- The objective and expected results of each BMP in meeting the measurable goals of the minimum control measure.
- Parties responsible for BMP implementation.
- The implementation schedule for the proposed BMP.
- Documentation and the method that will be utilized to determine the effectiveness of the BMP.

## 1. Minimum Control Measure #1 — Public Education and Outreach on Stormwater Impacts

### Minimum Control Measure #1 – Permit Requirements:

**Section II.B.1.b.** - The public education and outreach program should be designed with consideration of the following goals: (1) Increasing target audience knowledge about the steps that can be taken to reduce stormwater pollution, placing priority on reducing impacts to impaired waters and other local water pollution concerns; (2) Increasing target audience knowledge of hazards associated with illegal discharges and improper disposal of waste, including pertinent legal implications; and (3) Implementing a diverse program with strategies that are targeted towards audiences most likely to have significant stormwater impacts. **Section II.B.1.c.** - The updated program shall be designed to: (1) Identify, at a minimum, three high-priority water quality issues, that contribute to the discharge of stormwater (e.g., Chesapeake Bay nutrients, pet wastes and local bacteria TMDLs, high-quality receiving waters, and illicit discharges from commercial sites) and a rationale for the selection of the three high-priority water quality issues; (2) Identify and estimate the population size of the target audience or audiences who is most likely to have significant impacts for each high-priority water quality issue; (3) Develop relevant message or messages and associated educational and outreach materials (e.g., various media such as printed materials, billboard and mass transit advertisements, signage at select locations, radio advertisements, television advertisements, websites, and social media) for message distribution to the selected target audiences while considering the viewpoints and concerns of the target audiences including minorities, disadvantaged audiences, and minors; (4) Provide for public participation during public education and outreach program development; (5) Annually conduct sufficient education and outreach activities designed to reach an equivalent 20% of each high-priority issue target audience. It shall not be considered noncompliance for failure to reach 20% of the target audience. However, it shall be a compliance issue if insufficient effort is made to annually reach a minimum of 20% of the target audience; and (6) Provide for the adjustment of target audiences and messages including educational materials and delivery mechanisms to reach target audiences in order to address any observed weaknesses or shortcomings.

## BMP 1A - GENERAL PUBLIC EDUCATION AND OUTREACH

The City has developed educational brochures and materials concerning stormwater pollution and high-priority water quality issues. These materials are widely distributed by City staff at events and meetings throughout the community. In addition, as a member of the Northern Virginia Clean Water Partners (CWP) program, the City participates in the CWP's Only Rain Down the Drain regional stormwater education initiative through television ads, social media, print ads, and the CWP's [OnlyRain.org](http://OnlyRain.org) website.

The City and CWP have identified three high priority water quality issues that contribute to the pollution of stormwater runoff within the City's MS4 outfall area. The three issues are listed below, along with the rationale for their selection.

- **Pet Waste** – Currently, Alexandria has a TMDL for fecal coliform bacteria in non-tidal Four Mile Run and TMDLs for E. coli in the tidal portion of Four Mile Run, Hunting Creek, Cameron Run, and Holmes Run. During PY1, the number of active pet licenses in Alexandria was approximately 5,380. A bacterial source analysis of non-tidal Four Mile Run predicted that approximately 12.9% of the fecal coliform was pet waste related.
- **Lawn Fertilizers** – Nitrogen and phosphorus are two of the three pollutants listed in Section I of the MS4 General permit requiring an action plan for the Chesapeake Bay TMDL. Over fertilization of residential lawns provides a direct runoff source of nitrogen and phosphorous to the City's waterways. With approximately 2,000 acres of residential turf in the City and an estimated target audience of 139,883 residents within the MS4, public awareness of the effects of over fertilization is important to reducing those pollutants in stormwater.
- **Motor Oil** – Prior annual reports have documented oily sheens on surface waters, as noted in the City's inspection records. The Clean Water Partners found that the majority of respondents to their 2013 survey of over 500 Northern Virginia residents take their vehicle to a service station to change their oil (85%) or take used oil to a gas station or hazmat facility for recycling (11%), but that one percent of Northern Virginians store used motor oil in their garage, place it in the trash or dump it down the storm sewer. With 104,222 vehicles registered in Alexandria (in 2014) this seemingly small one percent potentially represents the equivalent of motor oil from over 1,000 engines being illegally dumped in the City.

The Clean Water Partner's primary goal is to reduce the amount of pollution in stormwater runoff reaching local waterways. The focus of its ad campaign and website is to raise public awareness about the three high-priority water quality issues described above. The ads provide education concerning the sources of the pollutants, the effect those pollutants have on water quality, and ways citizens can reduce or prevent those pollutants from entering the City's waterways through stormwater runoff.

The City has analyzed demographics from the 2010 Census, breaking out the Combined Sewer Overflow area (which is permitted separately from the MS4 Permit) from the rest of Alexandria, to determine the target audience demographics within the MS4. Public Education and Outreach will be targeted in accordance with Section II.B.1 based on the demographics in Table 3a.

**Table 3a. City of Alexandria’s Demographics Within the MS4**

Group	2010 Census Count <sup>(1)</sup>	8% Adjustment to 2013 <sup>(2)</sup>	Percent of Total Population
Total Population	129,521	139,883	100.0
Hispanic	21,954	23,710	17.0
White	67,782	73,205	52.3
Black	27,448	29,644	21.2
American Indian	314	339	0.2
Asian	8,116	8,765	6.3
Hawaiian, Pacific Islander	101	109	0.1
Other	459	496	0.4
Multi-Race	3,347	3,615	2.6
Over 18	103,601	111,889	80.0

**Notes:**  
**1. Does not include population living inside the City’s CSO watershed.**  
**2. 8% Adjustment based upon data from Weldon Cooper Center for Public Service Demographics Research Group, University of Virginia (released January 27, 2014).**

The target audiences for the pollutants of concern are given in Table 3b.

**Table 3b. Estimated Target Audiences for Pollutants of Concern**

Pollutant of Concern	Target Audience	Population of Target Audience
Pet Waste	Pet Owners	5,380
Lawn Fertilizers	Alexandria Residents	139,883
Motor Oil	Households with Motor Vehicles	60,000 <sup>1</sup>

**Notes:**  
**1. Estimated number of households in Alexandria with one or more vehicles. Taken from the U.S. Census Bureau’s 2008-2012 American Community Survey 5-Year Estimates for Alexandria, Virginia.**

**Objective and Expected Results:** Distributing general education brochures and participating in regional education outreach efforts increases individual and household knowledge about the steps that can be taken to reduce stormwater pollution and increases understanding of the legal implications of the improper disposal of waste.

**Responsible Party:** T&ES-S&SI

**Implementation and Schedule:**

- During PY1, the City will update its MS4 Program Plan to comply with the requirements for Minimum Control Measure #1 in the 2013-2018 MS4 permit.
- The City will continue to distribute general education brochures at appropriate community events and meetings.
- The City will continue to be a member and support the CWP and to participate in regional education programs.

**Documentation and Measure of Effectiveness:** The City will document efforts to engage and educate citizens and will report these efforts in the annual report. This will include the number of events attended and an estimate of the number of individuals reached. In addition, the CWP conducts an annual survey to assess the impacts of the program on individual behavior. The City will use this information to determine whether to continue participation in this regional effort.

#### BMP 1B – STREAM CROSSING SIGNS

The City has installed 33 signs at 18 locations where roads cross major waterways. In addition, the City has installed nine signs at major stream crossings on hike/bike trails. The signs display the name of the waterway and explain that the waterway is part of the Chesapeake Bay watershed.

**Objective and Expected Results:** Stream crossing signs help promote general citizen and visiting motorist awareness of the City's surface water resources, water bodies, and drainage basins. The signs also help link local watershed protection efforts with larger Chesapeake Bay protection efforts.

**Responsible Party:** T&ES-S&SI

**Implementation and Schedule:** Initial installation of the signs is complete and no additional signs have been identified as being needed at this time. The City will continue to maintain the existing signs during the permit period.

**Documentation and Measure of Effectiveness:** The City will document the maintenance of the signs in the annual report.

#### BMP 1C – TEXT MESSAGES AND PSAs FOR CABLE TV

The City is fortunate to have a government access channel (Channel 70) and a community access channel (Channel 69) that can be used to broadcast pollution prevention messages to the general public. For the past several years, the City has run a scrolling text message on pollution

prevention and has aired pollution prevention PSAs on both Channel 69 and Channel 70. The PSAs have covered three topics: proper disposal of used oil, proper fertilization techniques, and proper disposal of pet waste.

**Objective and Expected Results:** The purpose of the text messages and the PSAs is to expose a wide audience to both a general pollution prevention message and to highlight actions that can be taken to reduce specific pollutants of concern, such as bacteria.

**Responsible Party:** T&ES-S&SI will take the lead with assistance from OCPI.

**Implementation and Schedule:**

- The City will continue to broadcast a seasonal, scrolling text message on the government access channel (Channel 70) and the community access channel (Channel 69) dealing with stormwater pollution prevention.
- The City will continue to air PSAs throughout the year on both the government access channel (Channel 70) and the community access channel (Channel 69). Topics will be selected to deal with specific pollutants of concern.

**Documentation and Measure of Effectiveness:** The City will provide documentation of the PSAs and the seasonal scrolling text message in the annual report.

## BMP 1D – STORMWATER BMP SIGNAGE

The City has implemented a requirement for all new and redevelopment projects to provide signage or labeling to identify new surface structural stormwater BMPs.

**Objectives and Expected Results:** Signage and labeling of structural stormwater BMPs helps educate the general public and those maintaining structural stormwater BMPs about the purpose of these facilities.

**Responsible Party:** T&ES-S&SI and P&Z

**Implementation and Schedule:** This requirement is implemented for all new and redevelopment projects during the City site plan approval process.

**Documentation and Measure of Effectiveness:** All final site plans will show the location and details of signage or labeling to identify new surface structural stormwater BMPs.

## BMP 1E – STORM SEWER INLET MARKING

The City was one of the first localities in Northern Virginia to implement a storm sewer marking program. To facilitate this program, the City has adopted a requirement for all new

development and redevelopment to mark storm sewer inlet covers located within 50 feet of the property line. The City also works with volunteers to install markers in existing neighborhoods. When this is done, the City distributes a door hanger that explains the program and provides information on alternatives to dumping.

**Objectives and Expected Results:** The goal of the storm sewer inlet marking is to reduce dumping by providing a visual way of alerting residents and visitors that storm sewers empty into local streams and eventually the Chesapeake Bay. The door hanger provides specific information on where to properly dispose of commonly dumped materials. Finally, the program provides a way for citizens and community groups to become directly involved in pollution prevention activities.

**Responsible Party:** T&ES-S&SI is responsible for ensuring that the requirement to mark storm sewer inlet covers is satisfactorily implemented. P&Z is responsible for ensuring compliance with the overall site plan approval process.

**Implementation and Schedule:**

- All final site plans will require storm sewer inlets within 50 feet of the project to be marked. This will occur during the City site plan approval process.
- The City will promote the City's storm sewer marking program at community events and on the web page to engage volunteers.

**Documentation and Measure of Effectiveness:** The City will document that all final site plans have a requirement for storm water inlets within 50 feet of the project to be marked. In addition, the City will provide a table with the number of storm sewer markers installed and the number of groups involved in storm sewer marking projects that are hosted or promoted by the City.

## BMP 1F – WATER QUALITY WEBSITE

The City has developed a website dedicated to water quality and stormwater management. According to 2012 Census data, over 77% of Virginia households have access to the internet. The site provides information about the program, serves as a forum to distribute educational materials, and includes information on where to report suspected illegal dumping.

**Objectives and Expected Results:** The website is a tool to provide water quality and pollution prevention information to the general public in an easily accessible format. It also provides a way to make documents accessible to the public for review and comment.

**Responsible Party:** T&ES-S&SI is responsible for keeping site content up-to-date and for assessing options for increasing site traffic. ITS is responsible for website hosting and technical development.

**Implementation and Schedule:** The City will continue to host the website and update it with new information.

**Documentation and Measure of Effectiveness:** The City will provide information on the website and provide a snapshot of the web page in the annual report.

## BMP 1G – EDUCATION CONCERNING FECAL COLIFORM BACTERIA

Several City tributaries are on the impaired waters list for either fecal coliform bacteria or *E. coli*. The Four Mile Run TMDL states that approximately 13% of the pollutant load is attributed to fecal coliform from canines. The City has developed a pollution prevention brochure specifically targeting pet owners and has obtained “Please Pick Up My Poop” post cards developed through the CWP program.

**Objectives and Expected Results:** The goal of this measure is to reduce bacterial pollution by targeting pollution prevention educational materials to the City’s pet owners.

**Responsible Party:** T&ES-S&SI will take the lead on this effort with the assistance and cooperation of RP&CA and the City Animal Shelter.

### **Implementation and Schedule:**

- The City will provide pet waste stations where appropriate to address fecal coliform issues.
- The City will continue to distribute the pet waste brochure and the post card at all appropriate events.
- The City will distribute the brochure at the animal shelter.
- The City will maintain a kiosk-style pet waste station at the Fort Ward Dog Exercise Area. The station may include educational materials and pet waste bags for disposing of fecal materials. Fort Ward is the only dog run located in the Four Mile Run non-tidal watershed subject to the bacteria TMDL.

**Documentation and Measure of Effectiveness:** The City will summarize all activities where brochures and post cards were distributed to City residents. The City will continue to assess whether additional dog exercise area kiosks are warranted based on usage.

## 2. Minimum Control Measure #2 — Public Involvement and Participation

Minimum Control Measure #2 – Permit Requirements:

**Section II.B.2.a.** - Public involvement. (1) The operator shall comply with any applicable federal, state, and local public notice requirements. (2) The operator shall: (a) Maintain an updated MS4 Program Plan. Any required updates to the MS4 Program Plan shall be completed at a minimum of once a year and shall be updated in conjunction with the annual report. The operator shall post copies of each MS4 program plan on its webpage at a minimum of once a year and within 30 days of submittal of the annual report to the department. (b) Post copies of each annual report on the operator's web page within 30 days of submittal to the department and retain copies of annual reports online for the duration of this state permit; and (c) Prior to applying for coverage as required by Section III M, notify the public and provide for receipt of comment of the proposed MS4 Program Plan that will be submitted with the registration statement. As part of the reapplication, the operator shall address how it considered the comments received in the development of its MS4 Program Plan. The operator shall give public notice by a method reasonably calculated to give actual notice of the action in question to the persons potentially affected by it, including press releases or any other forum or medium to solicit public participation.

**Section II.B.2.b.** - Public participation. The operator shall participate, through promotion, sponsorship, or other involvement, in a minimum of four local activities annually e.g., stream cleanups; hazardous waste cleanup days; and meetings with watershed associations, environmental advisory committees, and other environmental organizations that operate within proximity to the operator's small MS4. The activities shall be aimed at increasing public participation to reduce stormwater pollutant loads; improve water quality; and support local restoration and clean-up projects, programs, groups, meetings, or other opportunities for public involvement. **Section II.B.2.c.** - The MS4 Program Plan shall include written procedures for implementing this program.

### BMP 2A – PUBLIC NOTICE AND PARTICIPATION

The City is committed to meeting all public notice requirements regarding implementation of the VSMP permit. The City is also committed to ensuring that citizens have an opportunity to review and comment on the MS4 Program Plan, and providing citizens with access to or copies of the City's annual compliance reports.

**Objective and Expected Results:** Providing an opportunity for public input will allow the City to take advantage of the expertise of residents and ensure that stormwater management efforts enjoy community support. The City is also committed to complying with all local, state, and federal public notice requirements for local ordinances or legislative actions related to the stormwater management program.

**Responsible Party:** T&ES-S&SI is responsible for meeting public notice requirements and providing materials for release.

**Implementation and Schedule:**

- The City shall meet all legal obligations with respect to public notice and comment regarding the stormwater management program and permit requirements.
- The City shall maintain an updated MS4 Program Plan. Required updates to the Program Plan shall be completed at a minimum of once per year in conjunction with the annual report.
- The Program Plan for each permit year shall be posted on the City's webpage within 30 days of submitting the annual report to the department.
- Each annual report shall be posted online within 30 days of submittal to the department. Annual reports shall be retained online for the duration of the 2013-2018 permit cycle.
- During PY5, as part of its permit reapplication process, the City shall give adequate public notice and provide for public comments on the draft MS4 Program Plan. The City shall address how public comments were considered in the development of the draft Program Plan.

**Documentation and Measure of Effectiveness:** The City will provide minutes of any actions taken and a summary of public comments received during the public information meeting on the draft MS4 Program Plan and draft annual reports. The City will provide documentation of public notices issued regarding the stormwater program and permit.

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

T&ES-S&SI provides ongoing staff support to the Environmental Policy Commission (EPC) in order to provide citizen/stakeholder input into the City's stormwater program. The EPC is appointed by the City Council and makes recommendations on environmental issues, including stormwater management.

**Objective and Expected Results:** Citizen/stakeholder input strengthens the overall program. The EPC provides valuable feedback regarding the City's stormwater management programs and helps to assess the effectiveness of different efforts from a citizen perspective.

**Responsible Party:** T&ES-S&SI

**Implementation and Schedule:**

- TE&S-S&SI will continue to provide staff support to the EPC, which meets on a monthly basis.
- TE&S-S&SI will provide the EPC with an annual update on stormwater management program activities each year.

**Documentation and Measure of Effectiveness:** The City will provide annual reports by the EPC (as available) along with relevant meeting minutes to document ongoing staff support. The City will document the annual EPC stormwater program update meeting and provide a summary of significant feedback, as appropriate.

## BMP 2C – City Sponsorship of Earth Day

For many years, the City has sponsored the annual Alexandria Earth Day event. The event draws thousands of Alexandrians and provides them with an opportunity to learn about ways to protect their environment. Information can be found at <http://alexandriava.gov/EarthDay>.

**Objective and Expected Results:** This well attended event serves to strengthen private environmental stewardship efforts and provides citizens with a broad range of environmentally-related educational opportunities.

**Responsible Party:** RP&CA and the Earth Day Committee serve as the City’s primary point of contact for Alexandria Earth Day events.

**Implementation and Schedule:** The City will continue to actively sponsor and promote the annual Alexandria Earth Day.

**Documentation and Measure of Effectiveness:** The City will document its sponsorship of, and participation in, the Alexandria Earth Day event in the Annual Report. Event organizers assess the success of the event each year and make changes as appropriate to ensure that the event is a success.

## BMP 2D – City Promotion of Clean Up Events

The City is fortunate to have several non-profit organizations that enhance public involvement and clean the environment through local litter clean-up efforts. The City has partnered with these organizations to promote these events through press releases, by placing links on the City’s web page and the City’s calendar, organizing volunteers, and performing site leader duties. The City also sponsors cleanup events.

**Objective and Expected Results:** Increased involvement in stream and river clean-up activities reduces pollution and encourages other residents to become more actively involved in watershed pollution prevention.

**Responsible Party:** T&ES-S&SI and RP&CA support these efforts, send out information via Environmental News eNews, and develop press releases for the OCPI. T&ES-RR collects the bags of trash after events.

**Implementation and Schedule:** The City will promote and/or sponsor non-profit stream and river clean up events through press releases and/or links on the City's web page.

**Documentation and Measure of Effectiveness:** The City will document its promotion of events in the annual report.

### 3. Minimum Control Measure #3 — Illicit Discharge Detection and Elimination

Minimum Control Measure #3 – Permit Requirements:
<p><b>Section II.B.3.a.</b> - The operator shall maintain an accurate storm sewer system map and information table and shall update it in accordance with the schedule set out in Table 1 of this section. (1) The storm sewer system map must show the following, at a minimum: (a) The location of all MS4 outfalls. In cases where the outfall is located outside of the MS4 operator's legal responsibility, the operator may elect to map the known point of discharge location closest to the actual outfall. Each mapped outfall must be given a unique identifier, which must be noted on the map; and (b) The name and location of all waters receiving discharges from the MS4 outfalls and the associated HUC. (2) The associated information table shall include for each outfall the following: (a) The unique identifier; (b) The estimated MS4 acreage served; (c) The name of the receiving surface water and indication as to whether the receiving water is listed as impaired in the Virginia 2010 303(d)/305(b) Water Quality Assessment Integrated Report; and (d) The name of any applicable TMDL or TMDLs. (3) Within 48 months of coverage under this state permit, the operator shall have a complete and updated storm sewer system map and information table that includes all MS4 outfalls located within the boundaries identified as "urbanized" areas in the 2010 Decennial Census and shall submit the updated information table as an appendix to the annual report. (4) The operator shall maintain a copy of the current storm sewer system map and outfall information table for review upon request by the public or by the department. (5) The operator shall continue to identify other points of discharge. The operator shall notify in writing the downstream MS4 of any known physical interconnection.</p>

**Section II.B.3.b.** - The operator shall effectively prohibit, through ordinance or other legal mechanism, nonstormwater discharges into the storm sewer system to the extent allowable under federal, state, or local law, regulation, or ordinance. Categories of nonstormwater discharges or flows (i.e., illicit discharges) identified in 4VAC50-60-400 D 2 c (3) must be addressed only if they are identified by the operator as significant contributors of pollutants to the small MS4. Flows that have been identified in writing by the Department of Environmental Quality as de minimis discharges are not significant sources of pollutants to surface water and do not require a VPDES permit. **Section II.B.3.c.** - The operator shall develop, implement, and update, when appropriate, written procedures to detect, identify, and address unauthorized nonstormwater discharges, including illegal dumping, to the small MS4. These procedures shall include: (1) Written dry weather field screening methodologies to detect and eliminate illicit discharges to the MS4 that include field observations and field screening monitoring and that provide: (a) A prioritized schedule of field screening activities determined by the operator based on such criteria as age of the infrastructure, land use, historical illegal discharges, dumping or cross connections. (b) The minimum number of field screening activities the operator shall complete annually to be determined as follows: (i) if the total number of outfalls in the small MS4 is less than 50, all outfalls shall be screened annually or (ii) if the small MS4 has 50 or more total outfalls, a minimum of 50 outfalls shall be screened annually. (c) Methodologies to collect the general information such as time since the last rain, the quantity of the last rain, site descriptions (e.g., conveyance type and dominant watershed land uses), estimated discharge rate (e.g., width of water surface, approximate depth of water, approximate flow velocity, and flow rate), and visual observations (e.g., order, color, clarity, floatables, deposits or stains, vegetation condition, structural condition, and biology); (d) A time frame upon which to conduct an investigation or investigations to identify and locate the source of any observed continuous or intermittent nonstormwater discharge prioritized as follows: (i) illicit discharges suspected of being sanitary sewage or significantly contaminated must be investigated first and (ii) investigations of illicit discharges suspected of being less hazardous to human health and safety such as noncontact cooling water or wash water may be delayed until after all suspected sanitary sewage or significantly contaminated discharges have been investigated, eliminated, or identified. Discharges authorized under a separate VPDES or state permit require no further action under this permit. (e) Methodologies to determine the source of all illicit discharges shall be conducted. If an illicit discharge is found, but within six months of the beginning of the investigation neither the source nor the same nonstormwater discharge has been identified, then the operator shall document such in accordance with Section II B 3 f. If the observed discharge is intermittent, the operator must document that a minimum of three separate investigations were made in an attempt to observe the discharge when it was flowing. If these

attempts are unsuccessful, the operator shall document such in accordance with Section II B 3 f. (f) Mechanisms to eliminate identified sources of illicit discharges including a description of the policies and procedures for when and how to use legal authorities; (g) Methods for conducting a follow-up investigation in order to verify that the discharge has been eliminated. (h) A mechanism to track all investigations to document: (i) the date or dates that the illicit discharge was observed and reported; (ii) the results of the investigation; (iii) any follow-up to the investigation; (iv) resolution of the investigation; and (v) the date that the investigation was closed. **Section II.B.3.d.** - The operator shall promote, publicize, and facilitate public reporting of illicit discharges into or from MS4s. The operator shall conduct inspections in response to complaints and follow-up inspections as needed to ensure that corrective measures have been implemented by the responsible party.

### BMP 3A – NUISANCE ABATEMENT HOTLINE AND WEB BASED REPORTING FORM

The City has established a 24-hour Nuisance Abatement Hotline (703-836-0041) for citizens and staff to report suspected illicit discharges. The Nuisance Abatement Hotline is highlighted on the City’s website and the City’s pollution prevention brochures. In addition, the City maintains a web-based problem reporting form that can be used by citizens to report suspected illicit discharges and other environmental concerns. The reporting form can be found on the City’s “Call, Click, Connect” webpage. Reports of illicit discharges are investigated by the Fire Marshal’s Office and T&ES-S&SI. Reports of illicit discharges and investigation results are tracked using Cityworks™ asset management software. The City’s policies and procedures for responding to reports of illicit discharges are found in the City’s Illicit Discharge Detection and Elimination (IDDE) manual, which is included in Appendix C.

**Objective and Expected Results:** The purpose of the Nuisance Abatement Hotline and the web-based reporting form is to empower residents to report potential stormwater pollution or illicit discharges.

**Responsible Party:** Code Administration manages the Nuisance Abatement Hotline. T&ES- S&SI responds to the web-based reporting and ITS manages the form on the website.

**Implementation and Schedule:** The City will maintain the Nuisance Abatement Hotline and the web-based reporting form. The City will continue to promote the availability of these tools through the website and education and outreach brochures.

**Documentation and Measure of Effectiveness:** In the Annual Report, the City will provide a snapshot of the Nuisance Abatement Hotline web page and the web based reporting form. The City will also report the number and types of incidents handled through these two mechanisms.

### BMP 3B – HOUSEHOLD HAZARDOUS WASTE (HHW) PROGRAM

Household hazardous waste (HHW) has been identified by the City as a significant potential source of illicit discharges to the storm sewer system. To help prevent such discharges, the City has a long-standing HHW program. In addition to HHW, the program also accepts used oil, antifreeze, and other automotive fluids. The City produces a brochure that provides information on the types of materials that may be left at program drop-off points. The information is also available on the City's website.

**Objective and Expected Results:** The HHW program reduces illegal dumping by providing residents with an opportunity to properly dispose of hazardous household waste materials and used oil, antifreeze, and automotive fluids.

**Responsible Party:** T&ES-RR

**Implementation and Schedule:** The City will continue to provide HHW collection services to all residents. In addition, the City will continue to produce and distribute materials promoting the program, as well as providing program information on the City's website.

**Documentation and Measure of Effectiveness:** In its Annual Report, the City will provide copies of the program website and brochure, track and report the number of residents taking advantage of the City's program, and report the number of barrels of HHW accepted by the City. The City will also report on any efforts by T&ES-RR to enhance program effectiveness.

### BMP 3C – PROHIBITION ON ILLICIT DISCHARGES

In 2004, the City Attorney determined that the City's existing enforcement and right-of-entry tools meet VSMP permit requirements. These are found in Title 11, Chapter 13 of the City Code "Environmental Offenses."

**Objective and Expected Results:** This measure ensures that the legal tools are in place to effectively prohibit illicit discharges to the storm sewer system and to conduct necessary enforcement in the case of an illicit discharge.

**Responsible Party:** T&ES-S&SI with support as necessary from FD

**Implementation and Schedule:** This BMP is continuously implemented. The City Attorney has reviewed the City Code in the context of the new permit requirements and has determined that no additional changes are required.

**Documentation and Measure of Effectiveness:**

- The City has adopted appropriate enforcement and right-of-entry provisions in the City Code.

- The City's enforcement policies and procedures for incidents of illicit discharges are contained in the City's IDDE manual (See Appendix C).
- Annually, the City will report the number of illicit discharges detected and provide a narrative on how the discharges were controlled or eliminated.
- After a significant enforcement activity, or where a pattern of illicit discharges indicates the need for more rigorous enforcement, the City will review policies, procedures, and ordinances and make recommendations for program enhancements as appropriate.

### BMP 3D – ILLICIT DISCHARGE DETECTION AND ELIMINATION TRAINING

Staff from T&ES-S&SI include training on illicit discharges during pollution prevention and good housekeeping training for municipal employees. This training is performed on a biennial basis and is described under BMP 6F – Pollution Prevention Policies and Procedures.

**Objective and Expected Results:** City employees are essential partners in ensuring that City operations do not contribute to stormwater pollution. The objective of this measure is to help employees identify potential illicit discharges while out in the field or simply out in the community.

**Responsible Party:** T&ES-S&SI. Staff from T&ES-PWS may assist with training if necessary.

**Schedule and Implementation:** This BMP is continuously implemented. The City will continue to incorporate illicit discharge and dumping prevention into its pollution prevention training to municipal staff on a biennial basis.

**Documentation and Measure of Effectiveness:** Training activities will be tracked and documented in the Annual Report.

### BMP 3E – IDENTIFICATION OF ALL PERMITTED STORMWATER DISCHARGES

Staff with T&ES-S&SI obtained information from DEQ on all permitted stormwater discharges in the City and incorporated the information into their GIS data. This provides a visual tool for identifying permitted and non-permitted discharges during outfall field screening, and when investigating reports of illicit discharges, such as those received on the City's Nuisance Abatement Hotline.

**Objective and Expected Results:** The purpose of this effort is to provide T&ES-S&SI staff with the ability to quickly identify and better monitor permitted discharges. It also provides staff with a tool to identify if a reported discharge has a permit, so they may locate the source quickly, if it is determined it is not a permitted discharge.

**Responsible Party:** Updated information will be kept at T&ES-S&SI.

**Implementation and Schedule:** The City will make annual requests to DEQ to provide updated information and incorporate changes into GIS.

**Documentation and Measure of Effectiveness:** Staff with T&ES-S&SI will maintain an up-to-date map and a list of State-permitted stormwater discharges within the City limits.

### BMP 3F – PROHIBITION OF OUTDOOR CLEANING OF RESTAURANT EQUIPMENT

The City has included as standard language on all special use permits (SUPs) issued for restaurant facilities, a prohibition against outdoor cleaning of equipment and the deposition of cooking residue into the storm sewer system.

**Objective and Expected Result:** Outdoor cleaning of restaurant equipment has been identified by the City as a potential source of stormwater pollution. Prohibiting outdoor cleaning of equipment will reduce the likelihood that cooking residue will enter the storm sewer system.

**Responsible Party:** P&Z is responsible for ensuring compliance with the overall SUP approval process, with review assistance from T&ES-S&SI.

**Implementation and Schedule:** This BMP is continuously implemented for all SUPs issued for restaurant facilities.

**Documentation and Measure of Effectiveness:** All SUPs will contain the appropriate prohibition against outdoor cleaning of restaurant equipment and the deposition of restaurant cooking residue into the storm sewer system. The City will include a sample SUP (if one was approved during the year) in each annual report.

### BMP 3G – STORM SEWER SYSTEM MAP

The City has developed a storm sewer system map showing all stormwater outfalls discharging to the waters of the Commonwealth, pipes, catch basins, and inlets. There are 425 known outfalls in the City. The map shall be updated in accordance with the 2013-2018 permit. The City shall continue to identify physical interconnections with other regulated MS4s and notify in writing any downstream regulated MS4 to which the City is physically interconnected.

**Objective and Expected Results:** This measure ensures that the City has a full understanding of the storm sewer system and also enables the City to conduct outfall field screening as required in the 2013-2018 permit, and described in BMP 3H – Outfall Field Screening.

**Responsible Party:** T&ES-S&SI and T&ES-I&ROW work cooperatively to maintain the storm sewer system map.

**Implementation and Schedule:**

- The City shall maintain an up-to-date storm sewer system map and outfall information table for review upon request by the public or by DEQ.
- The City shall update the storm sewer map and outfall information table to include those items listed in Section II.B.3.a. of the 2013-2018 permit. Map updates shall be completed by the end of PY4.
- The updated outfall information table shall be submitted as an appendix to the PY4 annual report.
- Downstream regulated MS4s shall be notified in writing of any physical interconnections as they are identified by the City.

**Documentation and Measure of Effectiveness:** The City will continuously collect any new data and record updates to the City's storm sewer outfall map. The City will provide a summary of annual activities regarding map updates and will provide a copy of the City's storm sewer outfall map. The City will include as part of its annual reports a list of any written notifications of physical interconnections given by the City to other MS4s during that permit year. The PY4 annual report shall contain the updated outfall information table.

**BMP 3H – OUTFALL FIELD SCREENING AND ILLICIT DISCHARGE INVESTIGATIONS**

During PY1, the City developed written policies and procedures for the detection, investigation, and elimination of illicit discharges. The City's 2014 IDDE manual provides policies, procedures, methodologies and legal authority for dealing with illicit discharges. Outfall field screening shall be performed in accordance with Section II.B.3.c of the 2013-2018 permit. The City's IDDE manual is found in Appendix C.

**Objective and Expected Results:** The purpose of this BMP is to detect and eliminate illicit discharges as required by the City's VSMP permit.

**Responsible Party:** T&ES-S&SI

**Implementation and Schedule:**

- The City will perform dry weather field screening on 50 priority outfalls annually.
- Outfalls shall be prioritized for field screening by the City in accordance with the procedures in its IDDE manual.
- Dry weather discharges will be investigated in accordance with the IDDE manual. Those discharges suspected of being sanitary sewage or significantly contaminated discharges are to be investigated first.
- Enforcement actions and legal penalties shall be used for incidents of illicit discharge, when necessary, by the City.

- Incidents of illicit discharge, as well as the outcome of investigations and any follow up investigations or actions will be tracked in the City’s database.

**Documentation and Measure of Effectiveness:** The City will document and track reported illicit discharges or illicit discharges discovered during dry weather field screening, and the results of any investigations in accordance with the requirements in Section II.B.3.c.(1)(h) of the 2013-2018 permit. The City will include with each annual report the results of outfall screenings for that permit year. Any follow-up actions required for illicit discharges discovered during the field screening shall also be included. The annual report shall also include a summary of each investigation performed for reported illicit discharges to include investigation results, resolution, and date of investigation closure.

#### 4. Minimum Control Measure #4 — Construction Site Stormwater Runoff Control

Minimum Control Measure #4 – Permit Requirements:
<p><b>Section II.B.4.a.</b> - Applicable oversight requirements. The operator shall utilize its legal authority, such as ordinances, permits, orders, specific contract language, and interjurisdictional agreements, to address discharges entering the MS4 from the following land-disturbing activities: (1) Land-disturbing activities as defined in § 10.1-560 of the Code of Virginia that result in the disturbance of 10,000 square feet or greater; (2) Land-disturbing activities in Tidewater jurisdictions, as defined in § 10.1-2101 of the Code of Virginia, that disturb 2,500 square feet or greater and are located in areas designated as Resource Protection Areas (RPA), Resource Management Areas (RMA) or Intensely Developed Acres (IDA), pursuant to the Chesapeake Bay Preservation Area Designation and Management Regulations adopted pursuant to the Chesapeake Bay Preservation Act; (3) Land-disturbing activities disturbing less than the minimum land disturbance identified in subdivision (1) or (2) above for which a local ordinance requires that an erosion and sediment control plan be developed; and (4) Land-disturbing activities on individual residential lots or sections of residential developments being developed by different property owners and where the total land disturbance of the residential development is 10,000 square feet or greater. The operator may utilize an agreement in lieu of a plan as provided in § 10.1-563 of the Code of Virginia for this category of land disturbances. <b>Section II.B.4.b.</b> - Required plan approval prior to commencement of the land disturbing activity. The operator shall require that land disturbance not begin until an erosion and sediment control plan or an agreement in lieu of a plan as provided in § 10.1-563 is approved by a VESCP authority in accordance with the Erosion and Sediment Control Act (§ 10.1-560 et seq.). The plan shall be: (1) Compliant with the minimum standards</p>

identified in 4VAC-50-30-40 of the Erosion and Sediment Control Regulations; or (2) Compliant with department-approved annual standards and specifications. Where applicable, the plan shall be consistent with any additional or more stringent, or both, erosion and sediment control requirements established by state regulation or local ordinance. **Section II.B.4.c. - Compliance and enforcement.** (1) The operator shall inspect land-disturbing activities for compliance with an approved erosion and sediment control plan or agreement in lieu of a plan in accordance with the minimum standards identified in 4VAC50-30-40 or with department-approved annual standards and specifications.(2) The operator shall implement an inspection schedule for land-disturbing activities identified in Section II B 4 a as follows: (a) Upon initial installation of erosion and sediment controls; (b) At least once during every two-week period; (c) Within 48 hours of any runoff-producing storm event; and (d) Upon completion of the project and prior to the release of any applicable performance bonds. Where an operator establishes an alternative inspection program as provided for in 4VAC50- 30-60 B 2, the written schedule shall be implemented in lieu of Section II B 4 c (2) and the written plan shall be included in the MS4 Program Plan.(3) Operator inspections shall be conducted by personnel who hold a certificate of competence in accordance with 4VAC-50-50-40. Documentation of certification shall be made available upon request by the VESCP authority or other regulatory agency. (4) The operator shall promote to the public a mechanism for receipt of complaints regarding regulated land-disturbing activities and shall follow up on any complaints regarding potential water quality and compliance issues. (5) The operator shall utilize its legal authority to require compliance with the approved plan where an inspection finds that the approved plan is not being properly implemented. (6) The operator shall utilize, as appropriate, its legal authority to require changes to an approved plan when a inspection finds that the approved plan is inadequate to effectively control soil erosion, sediment deposition, and runoff to prevent the unreasonable degradation of properties, stream channels, waters, and other natural resources. (7) The operator shall require implementation of appropriate controls to prevent nonstormwater discharges to the MS4, such as wastewater, concrete washout, fuels and oils, and other illicit discharges identified during land-disturbing activity inspections of the MS4. The discharge of nonstormwater discharges other than those identified in 4VAC50-60-1220 through the MS4 is not authorized by this state permit. (8) The operator may develop and implement a progressive compliance and enforcement strategy provided that such strategy is included in the MS4 Program Plan and is consistent with 4VAC50-30. **Section II.B.4.d. - Regulatory coordination.** The operator shall implement enforceable procedures to require that large construction activities as defined in 4VAC50-60-10 and small construction activities as defined in 4VAC50-60-10, including municipal construction activities, secure necessary state permit authorizations from the department to discharge

stormwater.

#### BMP 4A – MAINTAIN DEQ EROSION AND SEDIMENT CONTROL PROGRAM CONSISTENCY

The Virginia Department of Conservation and Recreation performed a review of the City's Erosion and Sediment Control Program in December 2006. After minor modifications, the City was determined to be fully consistent with the Virginia Erosion and Sediment Control Regulations. Since that time, the City has maintained its consistency with Virginia's Erosion and Sediment Control Regulations. During PY1, the City formalized its policies and procedures for its Erosion and Sediment Control Program. The City's legal authority, procedures for Erosion and Sediment Control inspections, and enforcement procedures for violations can be found in the *City's Policies and Procedures for Construction Site Runoff Control Inspections* (see Appendix D). Also during PY1, the City began a review of its E&S ordinance to ensure it is consistent with the City's updated Environmental Management Ordinance.

**Objective and Expected Results:** The 2013-2018 MS4 permit requires the City to ensure land disturbing activities listed in Section II.B.4.a obtain the proper permits and approval prior to commencement of land disturbing activities, and ensure that discharges into the MS4 from those land disturbing activities meet the requirements set forth in the Virginia Erosion and Sediment Control Act and regulations.

**Responsible Party:** The Watershed Program Administrator from T&ES-S&SI is the Erosion and Sediment Control Program Authority. Staff from TE&S-C&I and T&ES-I&ROW perform site plan reviews, and staff from T&ES-C&I perform construction site inspections.

**Implementation and Schedule:**

- The City will continue to implement the Erosion and Sediment Control Program consistent with State regulations.
- After review, any necessary modifications to the City's Erosion and Sediment Control Ordinance will be adopted during PY2.

**Documentation and Measure of Effectiveness:** The effectiveness of the City's program is measured by consistency with State regulations as determined by staff from the Stormwater and Sanitary Infrastructure division. Should differences be identified between the City and State Program requirements, the City will take action to address them.

## BMP 4B – VPDES PERMITS FOR CONSTRUCTION ACTIVITIES

The City expects to receive approval of its VSMP program from DEQ (it was not available as of June 2014). The VSMP permit requires the City to ensure that all construction site owners and operators secure a separate VPDES stormwater permit for construction activities. To meet this requirement, the City has incorporated language into its plan review checklist to alert those proposing a land disturbing activity that all permits must be in place prior to release of the final site plan. Legal authority requiring a VPDES permit before the start of land disturbing activities is found in Section 13-111 of the City's Environmental Management Ordinance.

During PY1, the City amended its Environmental Management Ordinances to require a VPDES permit before land disturbance and to meet other stormwater related requirements in the 2013-2018 VSMP permit. The City also amended its formal plan review policies and procedures during PY1 to adhere to the VSMP requirements. The City's *Development Review Process* requires that a SWPPP is submitted and approved prior to final site plan release.

**Objective and Expected Result:** This measure implements the requirement in Section II.B.4.b of the City's MS4 permit, and helps the City ensure that all construction site owners and operators secure a separate VPDES stormwater permit for construction activities and implement a SWPPP.

**Responsible Party:** T&ES-S&SI is responsible for implementing this BMP with support from TE&S-C&I and T&ES-I&ROW.

### **Implementation and Schedule:**

- This is an ongoing BMP.
- The City will implement its formalized policies and procedures during plan reviews.
- The City will continue to require that site operators and owners secure a separate VPDES stormwater permit for construction activities and implement a SWPPP.
- T&ES-C&I staff will continue to use a checklist during site visits to verify the presence of the stormwater construction permit.

**Documentation and Measure of Effectiveness:** The City's plan review policies and procedures as well as checklists used during plan reviews can be found in Appendix D.

The City's Environmental Management Ordinance can be found on the City's website at the following link:

[http://www.alexandriava.gov/uploadedFiles/tes/oeg/info/Adopted%20Alexandria\\_ARTICLE%20XIII\\_Environmental%20Management\\_Ordinance%203.15.14.pdf](http://www.alexandriava.gov/uploadedFiles/tes/oeg/info/Adopted%20Alexandria_ARTICLE%20XIII_Environmental%20Management_Ordinance%203.15.14.pdf)

## BMP 4C – SITE INSPECTIONS FOR LAND DISTURBING ACTIVITIES

As part of its Erosion and Sediment Control Program, and as required by Section II.B.4.c of the 2013-2018 permit, the City shall conduct inspections of land disturbing activities.

During PY1, the City formalized its policies and procedures for construction site inspections. The document, *Policies and Procedures for Construction Site Runoff Control Inspections* contains legal authority, procedures for E&S and VSMP inspections, as well as compliance and enforcement policies and documents.

**Objective and Expected Results:** The purpose of this activity is to ensure that a land disturbing activity is in compliance with an approved erosion and sediment control plan or agreement in lieu of a plan, as well as the requirements contained in the site's VSMP permit where applicable.

**Responsible Party:** T&ES-S&SI and T&ES-C&I

### **Implementation and Schedule:**

- Inspections will be performed according to the schedule given in the City's policies and procedures document, and Section II.B.4.c.(2) of the MS4 permit.
- The City shall ensure inspectors obtain and hold certificates of competence in accordance with 9VAC25-850-40.
- In accordance with permit Sections II.B.4.c(5) & (6), the City shall continue to utilize its legal authority to require compliance with an approved plan if one is not being followed, or require changes in a plan if the inspection shows an approved plan to be inadequate to control stormwater runoff.
- The City shall continue to require proper control measures where site inspections reveal non-stormwater discharges to the MS4 other than those listed in 9VAC25-890-20.

**Documentation and Measure of Effectiveness:** A copy of the City's inspection policies and procedures document is included in Appendix D. The City will track regulated land disturbing activities and will document the following in its Annual Report:

- Total number of inspections conducted
- Total number and type of enforcement actions taken during the reporting period as well as a summary of the enforcement actions.

## BMP 4D – CITIZEN COMPLAINT REPORTING MECHANISM

As with complaints of illicit discharges or other water quality issues, citizens may use the City's Nuisance Abatement Hotline or Call, Click, Connect on the City's website (see BMP 3A) to file complaints concerning erosion and sediment control violations. Citizens may also call the

Construction & Inspection division directly or the City's 311 Call Center. Complaints to the Nuisance Abatement Hotline, Call, Click, Connect, or the City's 311 Call Center are logged into Cityworks™ for tracking. Calls to the T&ES-C&I division are logged into the City's "PERMIT-PLAN" software database. Incident reports can be generated from both systems for annual reporting purposes. This activity supports the Nuisance Abatement Hotline and web based reporting form in BMP 3A.

**Objective and Expected Results:** The purpose of this activity is to ensure that all complaints are logged into a central database so that staff can follow up with complaints and identify and track trends.

**Responsible Party:** Data collection responsibility is shared between T&ES-S&SI and T&ES-C&I. Complaints are entered into Cityworks™ by T&ES-S&SI staff, while T&ES-C&I staff maintain complaint data in the "PERMIT-PLAN" database.

**Implementation and Schedule:** The City will continue to maintain a database log for tracking the disposition of stormwater and E&SC complaints.

**Documentation and Measure of Effectiveness:** The City will provide a summary of program implementation and a summary of all complaints from the most recent reporting year.

#### BMP 4E – LAND DISTURBING ACTIVITIES TRACKING SYSTEM

Land disturbing activities are tracked by T&ES-I&ROW through the plan review process. The information is recorded and logged by the Site Plan Coordinator when final approved plan mylars and plot plans are released. Reports are sent to T&ES-S&SI, which are entered into a spreadsheet and provided to DEQ as required by the Permit.

**Objective and Expected Results:** The purpose of this BMP is to ensure that all required data needed to be reported to DEQ is adequately and accurately tracked.

**Responsible Party:** T&ES-I&ROW is responsible for tracking and recording land disturbing activities, while T&ES-S&SI is responsible for providing the information to DEQ as required.

**Implementation and Schedule:** The City will continue to maintain a database log for tracking all land disturbing activities in accordance with permit requirements. Data for all land disturbing activities will be maintained by T&ES-S&SI staff.

**Documentation and Measure of Effectiveness:** The City will provide a summary of total land disturbing projects and total disturbed acres annually for the most recent reporting year.

## 5. Minimum Control Measure #5 — Post Construction Stormwater Management

### Minimum Control Measure #5 – Permit Requirements:

**Section II.B.5.a.** - Applicable oversight requirements. The operator shall address post-construction stormwater runoff that enters the MS4 from the following land-disturbing activities: (1) New development and development on prior developed lands that are defined as large construction activities or small construction activities in 4VAC50-60-10; (2) New development and development on prior developed lands that disturb greater than or equal to 2,500 square feet, but less than one acre, located in a Chesapeake Bay Preservation Area designated by a local government located in Tidewater, Virginia, as defined in § 10.1-2101 of the Code of Virginia; and (3) New development and development on prior developed lands where an applicable state regulation or local ordinance has designated a more stringent regulatory size threshold than that identified in subdivision (1) or (2) above. **Section II.B.5.b.** - Required design criteria for stormwater runoff controls. The operator shall utilize legal authority, such as ordinances, permits, orders, specific contract language, and interjurisdictional agreements, to require that activities identified in Section II.B.5.a address stormwater runoff in such a manner that stormwater runoff controls are designed and installed: (1) In accordance with the appropriate water quality and water quantity design criteria as required in Part II (4VAC50-60-40 et seq.) of 4VAC50-60; (2) In accordance with any additional applicable state or local design criteria required at project initiation; and (3) Where applicable, in accordance with any department-approved annual standards and specifications. Upon board approval of a Virginia Stormwater Management Program authority (VSMP Authority) as defined in § 10.1-603.2 of the Code of Virginia and reissuance of the Virginia Stormwater Management Program (VSMP) General Permit for Discharges of Stormwater from Construction Activities, the operator shall require that stormwater management plans are approved by the appropriate VSMP Authority prior to land disturbance. In accordance with § 10.1-603.3 M of the Code of Virginia, VSMPs shall become effective July 1, 2014, unless otherwise specified by state law or by the board. **Section II.B.5.c.** - Inspection, operation, and maintenance verification of stormwater management facilities. (1) For stormwater management facilities not owned by the MS4 operator, the following conditions apply: (a) The operator shall require adequate long-term operation and maintenance by the owner of the stormwater management facility by requiring the owner to develop a recorded inspection schedule and maintenance agreement to the extent allowable under state or local law or other legal mechanism; (b) The operator or his designee shall implement a schedule designed to inspect all privately owned stormwater management facilities that discharge

into the MS4 at least once every five years to document that maintenance is being conducted in such a manner to ensure long-term operation in accordance with the approved designs. (c) The operator shall utilize its legal authority for enforcement of maintenance responsibilities if maintenance is neglected by the owner. The operator may develop and implement a progressive compliance and enforcement strategy provided that the strategy is included in the MS4 Program Plan. (d) Beginning with the issuance of this state permit, the operator may utilize strategies other than maintenance agreements such as periodic inspections, homeowner outreach and education, and other methods targeted at promoting the long-term maintenance of stormwater control measures that are designed to treat stormwater runoff solely from the individual residential lot. Within 12 months of coverage under this permit, the operator shall develop and implement these alternative strategies and include them in the MS4 Program Plan. (2) For stormwater management facilities owned by the MS4 operator, the following conditions apply: (a) The operator shall provide for adequate long-term operation and maintenance of its stormwater management facilities in accordance with written inspection and maintenance procedures included in the MS4 Program Plan. (b) The operator shall inspect these stormwater management facilities annually. The operator may choose to implement an alternative schedule to inspect these stormwater management facilities based on facility type and expected maintenance needs provided that the alternative schedule is included in the MS4 Program Plan. (c) The operator shall conduct maintenance on its stormwater management facilities as necessary.

## BMP 5A – BMP INVENTORY

All constructed BMPs in the City are tracked using the City's database software. Information tracked includes the type of BMP, location, discharging water body, project number, and number of acres treated.

**Objective and Expected Results:** The purpose of this BMP is to continue to maintain a database log for tracking BMPs in accordance with permit requirements and to enable the City to understand what areas of the City are being treated by BMPs.

**Responsible Party:** T&ES-S&SI

**Implementation and Schedule:**

- The City will continue to ensure that all new certified BMPs are entered into the City's database.
- The City will continue to include in the database the impaired surface water that the stormwater facility is discharging into.

**Documentation and Measure of Effectiveness:** In the Annual Report, the City will provide a spreadsheet of all certified BMPs entered during that permit year along with information on the type of BMP, location, discharging impaired water body, project number, and drainage area.

## BMP 5B –BMP MAINTENANCE AGREEMENTS

The City has a process to ensure that development plans cannot be finalized without a BMP maintenance agreement. T&ES-S&SI staff review the agreement and ensure the information is correct. The information is then entered into the City's database.

During PY1, the City reviewed its ordinances concerning maintenance agreements for BMPs used to treat stormwater solely from individual residential lots, and is in the process of amending those ordinances. During PY2, The City is planning to eliminate the requirement for maintenance agreements for *individual residential lots only*. Instead, the City plans to use a combination of homeowner outreach and education, in accordance with Section II.B.5.c.(1).(d) of the 2013-2018 permit. The City has developed information sheets for each type of stormwater BMP used on individual residential lots in the city. The information sheets will be mailed to individual homeowners once per year, and will contain maintenance information for the type of BMP found on the owner's lot.

**Objective and Expected Results:** Legally executed and enforceable maintenance agreements help ensure that structural BMPs continue to provide their intended water quality functions.

**Responsible Party:** T&ES-I&ROW staff ensure that the BMP maintenance agreement is submitted during site plan review. Staff from T&ES-S&SI are responsible for ensuring that BMP maintenance agreements are executed and enforced. The City Clerk of the Circuit Court files the agreements with the appropriate land records.

### **Implementation and Schedule:**

- The City will continue to ensure that all appropriate BMPs have legally executed BMP maintenance agreements.
- Plans shall be tracked to ensure that appropriate BMP maintenance agreements are executed.
- Beginning in PY2 the City will use a combination of homeowner outreach and education instead of implementing maintenance agreements for individual residential lots.

**Documentation and Measure of Effectiveness:** The City will confirm ongoing compliance with this requirement. A copy of the City's BMP maintenance agreement is included in Appendix E.

## BMP 5C – MAINTAIN LEGAL AUTHORITY

The City leverages its Environmental Management Ordinance, established under the Chesapeake Bay Preservation Area Designation and Management Regulations, to effectively reduce the impacts of pollution from post-construction runoff to the maximum extent practical. After a review of the entire program, the Chesapeake Bay Local Assistance Board (replaced by the Virginia Soil and Water Conservation Board) found the City to be in full compliance with the Act and Regulations on September 6, 2007.

During PY1, the City amended its Environmental Management Ordinance to remain consistent with revisions to Virginia’s Stormwater Management Act.

**Objective and Expected Results:** The Environmental Management Ordinance ensures that post-construction runoff is controlled to the maximum extent practicable in accordance with permit requirements.

**Responsible Party:** T&ES-S&SI staff has primary responsibility for ensuring City consistency with the Chesapeake Bay Preservation Area Designation and Management Regulations.

**Implementation and Schedule:** The City will continue to implement a stormwater management program that is compliant with the Chesapeake Bay Preservation Area Designation and Management Regulations through the City’s Environmental Management Ordinance.

**Documentation and Measure of Effectiveness:** The City’s revised ordinances, (Article XIII.– Environmental Management), can be found in Appendix E.

## BMP 5D –BMP DESIGN GUIDELINES

Due to changes in the Virginia Stormwater Management Regulations, the City of Alexandria amended its Environmental Management Ordinance during PY1. Section 13-109 of the City’s ordinance states that BMPs used for water quality and quantity control shall be evaluated for compliance using Virginia’s Runoff Reduction Methodology, and shall be those established in 9VAC25-870-65 or found at the Virginia BMP clearinghouse website. BMP use may be limited in accordance with policies established by the director of T&ES in accordance with 13-104(c) of the City Code.

**Objective and Expected Results:** It is important to ensure that the City’s BMP design guidelines are consistent with the Environmental Management Ordinance and the requirements of the Virginia Stormwater Management Regulations. This is particularly true as the professional body of knowledge on urban stormwater management continues to change.

**Responsible Party:** T&ES-S&SI and T&ES-I&ROW

**Implementation and Schedule:** The City will continue to evaluate its BMP guidelines and amend them as necessary to remain consistent with the Virginia Stormwater Management Regulations.

**Documentation and Measure of Effectiveness:** Plans are consistent with the Virginia Stormwater Management Regulations.

#### BMP 5E – PUBLIC BMP FACILITY INSPECTION AND MAINTENANCE

There are approximately 65 publically owned BMP facilities in the City of Alexandria. Inspection and maintenance of all publicly owned BMP facilities is the responsibility of the City.

During PY1, the City developed written policies and procedures for the inspection and maintenance of publically owned BMP facilities. These policies and procedures can be found in Appendix E.

**Objective and Expected Results:** Maintenance of public BMP facilities is essential to ensuring that these investments continue to provide their intended water quality benefits.

**Responsible Party:** T&ES-PWS is responsible for this effort.

**Implementation and Schedule:** The VSMP permit regulations require the City to implement a BMP inspection program based on the Virginia Stormwater Management Regulations. The City will implement an inspection program in accordance with the following:

- The City will inspect each publicly owned BMP facility annually.
- Regular maintenance will be performed according to the maintenance schedule and guideline specific to each BMP.

**Documentation and Measure of Effectiveness:** In its Annual Report, the City will document the number of BMPs inspected and maintenance activities performed during that permit year.

#### BMP 5F – PRIVATE BMP FACILITY INSPECTION AND ENFORCEMENT

There are approximately 450 privately-owned BMP facilities in the City of Alexandria which require City inspection. Maintenance of all privately owned BMP facilities is the responsibility of the property owner.

During PY1, the City developed written policies and procedures for the inspection and enforcement of maintenance for privately owned BMP facilities. These policies and procedures can be found in Appendix E.

In accordance with Section II.B.5.c.(1).(d) the City will be implementing methods other than maintenance agreements to promote the long-term maintenance of stormwater control

measures that treat stormwater runoff from individual residential lots only. The City will use homeowner outreach and education to promote maintenance of BMPs on individual residential lots.

**Objective and Expected Results:** Maintenance of private BMP facilities is essential to ensuring that these investments continue to provide their intended water quality benefits.

**Responsible Party:** T&ES-S&SI staff is responsible for this effort.

**Implementation and Schedule:** The VSMP permit regulations require the City to implement a BMP inspection program based on the Virginia Stormwater Management Regulations. The City will implement an inspection program in accordance with the following:

- The City will inspect each applicable privately-owned BMP at least once every five years.
- Enforcement procedures will follow the procedures outlined in the City’s Policies and Procedures for Post-Construction BMP Operation and Maintenance.

**Documentation and Measure of Effectiveness:** The City will document the number of BMPs inspected each year and provide statistics on the number of facilities for which follow-up enforcement action was required. This information will be included with the City’s Annual Report.

## 6. Minimum Control Measure #6 — Pollution Prevention/Good Housekeeping for Municipal Operations

Minimum Control Measure #6 – Permit Requirements:
<b>Section II.B.5.a.</b> - Operations and maintenance activities. The MS4 Program Plan submitted with the registration statement shall be implemented by the operator until updated in accordance with this state permit. In accordance with Table 1 in this section, the operator shall develop and implement written procedures designed to minimize or prevent pollutant discharge from: (i) daily operations such as road, street, and parking lot maintenance; (ii) equipment maintenance; and (iii) the application, storage, transport, and disposal of pesticides, herbicides, and fertilizers. The written procedures shall be utilized as part of the employee training. At a minimum, the written procedures shall be designed to: (1) Prevent illicit discharges; (2) Ensure the proper disposal of waste materials, including landscape wastes; (3) Prevent the discharge of municipal vehicle wash water into the MS4 without authorization under a separate VPDES permit; (4) Prevent the discharge of wastewater into the MS4 without authorization under a separate VPDES permit; (5) Require implementation of best

management practices when discharging water pumped from utility construction and maintenance activities; (6) Minimize the pollutants in stormwater runoff from bulk storage areas (e.g., salt storage, topsoil stockpiles) through the use of best management practices; (7) Prevent pollutant discharge into the MS4 from leaking municipal automobiles and equipment; and (8) Ensure that the application of materials, including fertilizers and pesticides, is conducted in accordance with the manufacturer's recommendations. **Section II.B.5.b.** - Municipal facility pollution prevention and good housekeeping. (1) Within 12 months of state permit coverage, the operator shall identify all municipal high-priority facilities. These high-priority facilities shall include (i) composting facilities, (ii) equipment storage and maintenance facilities, (iii) materials storage yards, (iv) pesticide storage facilities, (v) public works yards, (vi) recycling facilities, (vii) salt storage facilities, (viii) solid waste handling and transfer facilities, and (ix) vehicle storage and maintenance yards. (2) Within 12 months of state permit coverage, the operator shall identify which of the municipal high-priority facilities have a high potential of discharging pollutants. Municipal high-priority facilities that have a high potential for discharging pollutants are those facilities identified in subsection (1) above that are not covered under a separate VPDES permit and which any of the following materials or activities occur and are expected to have exposure to stormwater resulting from rain, snow, snowmelt or runoff: (3) The operator shall develop and implement specific stormwater pollution prevention plans for all high-priority facilities identified in subdivision 2 of this subsection. The operator shall complete SWPPP development and implementation shall be completed within 48 months of coverage under this state permit. Facilities covered under a separate VDPES permit shall adhere to the conditions established in that permit and are excluded from this requirement. **Section II.B.6.c.** - Turf and Landscape management. (1) The operator shall implement turf and landscape nutrient management plans that have been developed by a certified turf and landscape nutrient management planner in accordance with § 10.1-104.2 of the Code of Virginia on all lands owned or operated by the MS4 operator where nutrients are applied to a contiguous area greater than one acre. Implementation shall be in accordance with the following schedule: (a) Within 12 months of state permit coverage, the operator shall identify all applicable lands where nutrients are applied to a contiguous area of more than one acre. A latitude and longitude shall be provided for each such piece of land and reported in the annual report. (b) Within 60 months of state permit coverage, the operator shall implement turf and landscape nutrient management plans on all lands where nutrients are applied to a contiguous area of more than one acre. The following measurable outcomes are established for the implementation of turf and landscape nutrient management plans: (i) within 24 months of permit coverage, not less than 15% of all identified acres will be covered by turf and landscape nutrient management

plans; (ii) within 36 months of permit coverage, not less than 40% of all identified acres will be covered by turf and landscape nutrient management plans; and (iii) within 48 months of permit coverage, not less than 75% of all identified acres will be covered by turf and landscape nutrient management plans. The operator shall not fail to meet the measurable goals for two consecutive years. (c) MS4 operators with lands regulated under § 10.1-104.4 of the Code of Virginia shall continue to implement turf and landscape nutrient management plans in accordance with this statutory requirement. (2) Operators shall annually track the following: (a) The total acreage of lands where turf and landscape nutrient management plans are required; and (b) The acreage of lands upon which turf and landscape nutrient management plans have been implemented. (3) The operator shall not apply any deicing agent containing urea or other forms of nitrogen or phosphorus to parking lots, roadways, and sidewalks, or other paved surfaces. **Section II.B.6.d. - Training.** The operator shall conduct training for employees. The training requirements may be fulfilled, in total or in part, through regional training programs involving two or more MS4 localities provided; however, that each operator shall remain individually liable for its failure to comply with the training requirements in this permit. Training is not required if the topic is not applicable to the operator's operations and therefore does not have applicable personnel provided the lack of applicability is documented in the MS4 Program Plan. The operator shall determine and document the applicable employees or positions to receive each type of training. The operator shall develop an annual written training plan including a schedule of training events that ensures implementation of the training requirements as follows: (1) The operator shall provide biennial training to applicable field personnel in the recognition and reporting of illicit discharges. (2) The operator shall provide biennial training to applicable employees in good housekeeping and pollution prevention practices that are to be employed during road, street, and parking lot maintenance. (3) The operator shall provide biennial training to applicable employees in good housekeeping and pollution prevention practices that are to be employed in and around maintenance and public works facilities. (4) The operator shall ensure that employees, and require that contractors, who apply pesticides and herbicides are properly trained or certified in accordance with the Virginia Pesticide Control Act (§3.2-3900 et seq. of the Code of Virginia). (5) The operator shall ensure that employees and contractors serving as plan reviewers, inspectors, program administrators, and construction site operators obtain the appropriate certifications as required under the Virginia Erosion and Sediment Control Law and its attendant regulations. (6) The operator shall ensure that applicable employees obtain the appropriate certifications as required under the Virginia Erosion and Sediment Control Law and its attendant regulations. (7) The operators shall provide biennial training to applicable employees in good housekeeping and pollution prevention practices that are to be employed in and

around recreational facilities. (8) The appropriate emergency response employees shall have training in spill responses. A summary of the training or certification program provided to emergency response employees shall be included in the first annual report. (9) The operator shall keep documentation on each training event including the training date, the number of employees attending the training, and the objective of the training event for a period of three years after each training event. **Section II.B.6.e.** - The operator shall require that municipal contractors use appropriate control measures and procedures for stormwater discharges to the MS4 system. Oversight procedures shall be described in the MS4 Program Plan.

#### BMP 6A - MUNICIPAL HIGH PRIORITY FACILITY IDENTIFICATION

The City shall identify all municipal high-priority facilities per Section II.B.6.b.(1) of the 2013-2018 permit.

**Objective and Expected Results:** Municipal facilities of the types listed in Section II.B.6.b.(1) of the permit may have a greater potential to contribute pollutants to stormwater runoff than other types of municipal facilities. By identifying all of its high-priority facilities, City staff can then assess which of those facilities have the greatest potential to contribute pollutants through stormwater runoff.

**Responsible Party:** T&ES-S&SI

**Implementation and Schedule:** During PY1, the City developed a list of its high-priority facilities.

- The City will maintain a list of high priority facilities, and will update the list as necessary.

**Documentation and Measure of Effectiveness:** Municipal facilities identified by the City as high-priority facilities are listed in Table 1, located in Appendix F. Updates to the list of high priority facilities will be reported in the appropriate Annual Report.

#### BMP 6B - STORMWATER POLLUTION PREVENTION PLANS FOR MUNICIPAL HIGH-PRIORITY FACILITIES

During PY1, the City identified its high-priority municipal facilities as required by the 2013-2018 permit. From its list of municipal high-priority facilities, the City also identified those facilities with a high potential for pollutant discharge as defined in Sections II.B.6.b.(2).(a), (b), & (c) of the permit, which are not already covered by separate VPDES permit.

The City will develop and implement SWPPPs for the high priority facilities identified under this BMP. Each SWPPP shall contain the information listed in Section II.B.6.b.(4) of the permit.

Facilities implementing SWPPPs shall keep an updated copy onsite. SWPPPs will be incorporated into the pollution prevention training given to municipal employees.

**Objective and Expected Results:** Developing and implementing SWPPPs for high-priority municipal facilities will greatly reduce the potential for pollutant discharges in stormwater runoff during daily operations at the City's municipal facilities.

**Responsible Party:** T&ES-S&SI will oversee the development of SWPPPs for high-priority facilities, and ensure proper implementation of the plans.

**Implementation and Schedule:**

- During PY1, the City identified which of its high-priority facilities require SWPPPs in accordance with the 2013-2018 permit requirements.
- By PY4, the City will have developed and implemented SWPPPs at all of its high-priority facilities identified under this BMP.

**Documentation and Measure of Effectiveness:** The municipal high-priority facilities identified by the City as requiring SWPPPs are listed in Table 2 of Appendix F.

Each facility will keep an updated copy of its SWPPP onsite. Completed SWPPPs will be considered part of the MS4 program Plan. Upon completion of a SWPPP, Appendix F of the Program Plan shall be updated with the location where the individual SWPPP may be found.

The City shall summarize the development and implementation of high-priority facility SWPPPs in the Annual Reports.

## BMP 6C – CATCH BASIN AND INLET CLEANING PROGRAM

The City has a long-standing program to inspect and clean stormwater catch basins and inlets. Catch basin cleaning varies year by year depending on the weather.

**Objective and Expected Results:** The catch basin and inlet cleaning program is meant to both reduce spot flooding and drainage problems as well as to prevent materials, including floatables and vegetative debris, captured in inlets from continuing to local streams.

**Responsible Party:** T&ES-PWS is responsible for implementing the City's catch basin and inlet cleaning program.

**Implementation and Schedule:** The City will continue catch basin and inlet cleaning operations without significant change.

**Documentation and Measure of Effectiveness:** The City will report catch basin and inlet cleaning statistics in its Annual Report.

## BMP 6D - TURF AND LANDSCAPE MANAGEMENT

**Objective and Expected Results:** Landscape nutrients, if improperly applied, have the potential to pollute the City's streams, and ultimately the Potomac River and the Chesapeake Bay. By implementing turf and landscape nutrient management plans on applicable municipal lands and ensuring that City staff apply nutrients in accordance with manufacturer's recommendations on all other municipal lands, the City will reduce the likelihood of potential contamination.

During PY1, the City identified municipal lands where nutrients are applied to a contiguous area of one acre or more. The City shall implement nutrient management plans developed by a certified turf and nutrient management planner on the identified municipal lands in accordance with the requirements of Section II.B.6.c.(1).(b).

In addition, the City will not apply deicing agents containing urea or other forms of nitrogen or phosphorus to roadways, parking lots, sidewalks, or other paved surfaces per Section II.B.6.c.(3) of the permit.

**Responsible Party:** RP&CA, T&ES-PWS and General Services

### **Implementation and Schedule:**

- During PY2, nutrient management plans will be implemented on no less than 15% of the total acreage requiring nutrient management.
- During PY3, nutrient management plans will be implemented on no less than 40% of the total acreage requiring nutrient management.
- During PY4, nutrient management plans will be implemented on no less than 75% of the total acreage requiring nutrient management.
- By the end of PY5, nutrient management plans will be implemented on all municipal lands where nutrients are applied to contiguous areas of one acre or more.
- RP&CA and General Services will continue to ensure that municipal employees responsible for applying nutrients on municipal land receive and maintain proper certification.
- The City will continue to require that all contractors engaging in the application of nutrients abide by manufacturer's recommendations.

**Documentation and Measure of Effectiveness:** The list of municipal lands where nutrient management plans are required is included in Appendix G. The locations where individual nutrient management plans are kept shall be added to Appendix G of the Program Plan as they are completed.

The City shall summarize the development and implementation of nutrient management plans in the Annual Reports. The annual report will also include the total number of acres where

nutrient management plans are required, and the total number of acres with an implemented nutrient management plan in place. The list of municipal lands requiring nutrient management plans will be updated as necessary by the City, and included in the Annual Report.

## BMP 6E – POLLUTION PREVENTION TRAINING

The VSMP permit requires the City to develop and implement an operation and maintenance program that includes a training component and that has as its ultimate goal the prevention or reduction of pollutant runoff from municipal operations. Since 2004 the City has conducted stormwater pollution prevention training workshops for operations and maintenance employees. The stormwater training covers a variety of good housekeeping and pollution prevention BMPs, and is given to all operations and maintenance employees, regardless of their duties. Pollution Prevention/Good Housekeeping training topics include:

- Good Housekeeping & Spill Prevention
- Spill Control & Response
- Vehicle Fueling
- Vehicle & Equipment Maintenance
- Vehicle & Equipment Washing
- Materials Management
- Waste Management
- Municipal Facility Maintenance
- Parking Lots & Streets
- Storm sewer System Cleaning
- Landscaping & Grounds Maintenance
- Working Over or Near Surface Waters

In addition to municipal training in pollution prevention and good housekeeping best management practices, all operations and maintenance employees also receive training to recognize and report illicit discharges.

Individual SWPPPs, developed for high-priority facilities under BMP 6 B, shall be utilized during training for applicable municipal staff at that facility.

**Objective and Expected Results:** The purpose of this BMP is to ensure that all municipal operations eliminate or reduce stormwater pollution to the maximum extent practicable.

**Responsible Party:** T&ES-S&SI will take the lead in providing training. Other municipal departments may assist with training when appropriate.

**Implementation and Schedule:**

- The City will provide training to operations and maintenance employees on pollution prevention and illicit discharges on a biennial basis.
- By PY4, SWPPP development and implementation shall be complete for identified municipal facilities. As SWPPPs are developed and implemented for high-priority facilities, they shall be included with the pollution prevention training for City staff.

**Documentation and Measure of Effectiveness:** The City will document training activities and include the documentation in the Annual Report.

**BMP 6F – POLLUTION PREVENTION POLICIES AND PROCEDURES**

In accordance with Section II.B.6.a of the 2013-2018 permit, the City will develop written policies and procedures and implement them during the daily operations of its facilities. The procedures will address daily practices that will minimize or prevent pollutant discharges from daily operations and municipal facilities.

During PY2 of the prior permit, the City developed an inspection checklist to be used at municipal facilities. The checklist covers good housekeeping practices, material storage and handling, as well as maintenance practices. The City will continue to use this checklist for its municipal facilities and will incorporate it into its written policies and procedures.

**Objective and Expected Results:** The purpose of this BMP is to ensure that all municipal services are managed in a manner to eliminate or reduce stormwater pollution to the maximum extent practicable.

**Responsible Party:** T&ES-S&SI will take the lead in developing protocols and conducting inspections, with assistance and cooperation as needed from T&ES-PWS.

**Implementation and Schedule:** The City will finalize written procedures for its operations and maintenance activities during PY2.

**Documentation and Measure of Effectiveness:** The City will provide copies of the written policies and procedures with the PY2 Annual Report.

## E. ANNUAL REPORT AND PROGRAM EVALUATION

According to its *General Permit for Discharges from Small Municipal Separate Storm Sewer Systems* (General Permit No. VAR040057), the City will submit annual reports to DEQ each year covering the period of July 1st through June 30th. The annual report will be submitted to DEQ no later than October 1st. The information provided to DEQ will be in accordance with the

provisions of [9VAC25-890-40](#) Section II.E.3, as summarized in Table 4. This list is not exhaustive, as other requirements listed in Section 4.D of this Program Plan also have Annual Report requirements, but the table does contain all references to Annual Reports listed in the MS4 Permit.

In addition, because the City has been assigned a TMDL Waste Load Allocation (WLA) for PCBs and bacteria, the City will provide the following additional information in the annual reports:

- 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 pollutants identified in the WLA, in a unit consistent with the WLA discharged by the regulated small MS4 for each WLA.

The City will re-evaluate goals, schedules, and strategies developed as part of the MS4 Program Plan to address TMDL pollutants of concern as prescribed in the MS4 permit.

**Table 4. Annual Report Requirements Stated in the City’s MS4 General Permit**

Permit Section	Annual Report Requirements
I.B.2.5	<p>a. The operator shall submit the required TMDL Action Plans with the appropriate annual report and in accordance with the associated schedule identified in this state permit.</p> <p>b. On an annual basis, the operator shall report on the implementation of the TMDL Action Plans and associated evaluation including the results of any monitoring conducted as part of the evaluation.</p>

Permit Section	Annual Report Requirements
I.C.4	<p>a. In accordance with Table 1 in this section, the operator shall submit the Chesapeake Bay Action Plan with the appropriate annual report.</p> <p>b. Each subsequent annual report shall include a list of control measures implemented during the reporting period and the cumulative progress toward meeting the compliance targets for nitrogen, phosphorus, and total suspended solids.</p> <p>c. Each subsequent annual report shall include a list of control measures, in an electronic format provided by the department, that were implemented during the reporting cycle and the estimated reduction achieved by the control. For stormwater management controls, the report shall include the information required in Section II B 5 e and shall include whether an existing stormwater management control was retrofitted, and if so, the existing stormwater management control type retrofit used.</p> <p>d. Each annual report shall include a list of control measures that are expected to be implemented during the next reporting period and the expected progress toward meeting the compliance targets for nitrogen, phosphorus, and total suspended solids.</p>
II.B.1.g	<p>The operator shall include the following information in each annual report submitted to the department during this permit term:</p> <p>(1) A list of the education and outreach activities conducted during the reporting period for each high-priority water quality issue, the estimated number of people reached, and an estimated percentage of the target audience or audiences that will be reached; and</p> <p>(2) A list of the education and outreach activities that will be conducted during the next reporting period for each high-priority water quality issue, the estimated number of people that will be reached, and an estimated percentage of the target audience or audiences that will be reached.</p>

Permit Section	Annual Report Requirements
II.B.2.a.2	<p>(a) Maintain an updated MS4 Program Plan. Any required updates to the MS4 Program Plan shall be completed at a minimum of once a year and shall be updated in conjunction with the annual report. The operator shall post copies of each MS4 program plan on its webpage at a minimum of once a year and within 30 days of submittal of the annual report to the department.</p> <p>(b) Post copies of each annual report on the operator's web page within 30 days of submittal to the department and retain copies of annual reports online for the duration of this state permit;</p>
II.B.2.d	<p>Each annual report shall include:</p> <p>(1) A web link to the MS4 Program Plan and annual report; and</p> <p>(2) Documentation of compliance with the public participation requirements of this section.</p>
II.B.3.a.3	<p>Within 48 months of coverage under this state permit, the operator shall have a complete and updated storm sewer system map and information table that includes all MS4 outfalls located within the boundaries identified as "urbanized" areas in the 2010 Decennial Census and shall submit the updated information table as an appendix to the annual report.</p>
II.B.3.f	<p>Each annual report shall include:</p> <p>(1) A list of any written notifications of physical interconnection given by the operator to other MS4s;</p> <p>(2) The total number of outfalls screened during the reporting period, the screening results, and detail of any follow-up actions necessitated by the screening results; and</p> <p>(3) A summary of each investigation conducted by the operator of any suspected illicit discharge. The summary must include: (i) the date that the suspected discharge as observed, reported, or both; (ii) how the investigation was resolved, including any follow-up, and (iii) resolution of the investigation and the date the investigation was closed.</p>

Permit Section	Annual Report Requirements
II.B.4.f	<p>The operator shall track regulated land-disturbing activities and submit the following information in all annual reports:</p> <ul style="list-style-type: none"> <li>(1) Total number of regulated land-disturbing activities;</li> <li>(2) Total number of acres disturbed;</li> <li>(3) Total number of inspections conducted; and</li> <li>(4) A summary of the enforcement actions taken, including the total number and type of enforcement actions taken during the reporting period.</li> </ul>
II.B.5.e (pg. 20)	<p>The operator shall submit an electronic database or spreadsheet of all stormwater management facilities brought online during each reporting year with the appropriate annual report. Upon such time as the department provides the operators access to a statewide web-based reporting electronic database or spreadsheet, the operator shall utilize such database to complete the pertinent reporting requirements of this state permit.</p>
II.B.6.c.1.a	<p>Within 12 months of state permit coverage, the operator shall identify all applicable lands where nutrients are applied to a contiguous area of more than one acre. A latitude and longitude shall be provided for each such piece of land and reported in the annual report.</p>
II.B.6.d.8	<p>The appropriate emergency response employees shall have training in spill responses. A summary of the training or certification program provided to emergency response employees shall be included in the first annual report.</p>

Permit Section	Annual Report Requirements
II.B.6.g	<p>Annual reporting requirements.</p> <p>(1) A summary report on the development and implementation of the daily operational procedures;</p> <p>(2) A summary report on the development and implementation of the required SWPPPs;</p> <p>(3) A summary report on the development and implementation of the turf and landscape nutrient management plans that includes:</p> <p>(a) The total acreage of lands where turf and landscape nutrient management plans are required; and</p> <p>(b) The acreage of lands upon which turf and landscape nutrient management plans have been implemented; and</p> <p>(4) A summary report on the required training, including a list of training events, the training date, the number of employees attending training and the objective of the training.</p>
II.C	<p>If the program the operator is using requires the approval of a third party, the program must be fully approved by the third party, or the operator must be working towards getting full approval. Documentation of the program's approval status, or the progress towards achieving full approval, must be included in the annual report required by Section II E 3. The operator remains responsible for compliance with the permit requirements if the other entity fails to implement the control measures (or component thereof).</p>
II.D	<p>In the annual reports that must be submitted under Section II E 3, the operator must specify that another entity is being relied on to satisfy some of the state permit requirements.</p>

Permit Section	Annual Report Requirements
II.E.3	<p>The operator must submit an annual report for the reporting period of July 1 through June 30 to the department by the following October 1 of that year. The reports shall include:</p> <p>a. Background Information.</p> <p>(1) The name and state permit number of the program submitting the annual report;</p> <p>(2) The annual report permit year;</p> <p>(3) Modifications to any operator's department's roles and responsibilities;</p> <p>(4) Number of new MS4 outfalls and associated acreage by HUC added during the permit year; and</p> <p>(5) Signed certification.</p> <p>b. The status of compliance with state permit conditions, an assessment of the</p> <p>appropriateness of the identified best management practices and progress towards achieving the identified measurable goals for each of the minimum control measures;</p> <p>c. Results of information collected and analyzed, including monitoring data, if any, during the reporting period;</p> <p>d. A summary of the stormwater activities the operator plans to undertake during the next reporting cycle;</p> <p>e. A change in any identified best management practices or measurable goals for any of the minimum control measures including steps to be taken to address any deficiencies;</p> <p>f. Notice that the operator is relying on another government entity to satisfy some of the state permit obligations (if applicable);</p> <p>g. The approval status of any programs pursuant to Section II C (if appropriate), or the progress towards achieving full approval of these programs; and</p> <p>h. Information required for any applicable TMDL special condition contained in Section I.</p>

Permit Section	Annual Report Requirements
II.F.1.a	Adding (but not eliminating or replacing) components, controls, or requirements to the MS4 Program may be made by the operator at any time. Additions shall be reported as part of the annual report.
II.F.1.b	Updates and modifications to specific standards and specifications, schedules, operating procedures, ordinances, manuals, checklists, and other documents routinely evaluated and modified are permitted under this state permit provided that the updates and modifications are done in a manner that (i) is consistent with the conditions of this state permit, (ii) follow any public notice and participation requirements established in this state permit, and (iii) are documented in the annual report.
III.C.1	The operator shall submit the results of the monitoring required by this state permit with the annual report unless another reporting schedule is specified elsewhere in this state permit.

Any person signing a document under Sections III.K.1 or 2 of the City’s MS4 Permit must make the following 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."*

## F. SCHEDULE SUMMARY

The annual training plan is presented in Appendix F.

The implementation schedule for specific BMPs for each of the Minimum Control Measures is presented in Table 5.

**Table 5. Summary of Minimum Control Measures Implementation Schedule**

BMP	Task	PY1	PY2	PY3	PY4	PY5	Responsibility
<b>MCM #1 Public Education and Outreach on Stormwater Impacts</b>							
1A	General Public Education and Outreach	●	→	→	→	→	T&ES-S&SI
1B	Stream Crossing Signs	→	→	→	→	→	T&ES-S&SI
1C	Text Messages and PSAs for Cable TV	→	→	→	→	→	T&ES-S&SI; OCPI
1D	Stormwater BMP Signage	→	→	→	→	→	T&ES-S&SI; P&Z
1E	Storm sewer Inlet Marking	→	→	→	→	→	T&ES-S&SI; P&Z
1F	Water Quality Website	→	→	→	→	→	T&ES-S&SI; ITS
1G	Education Concerning Fecal Coliform Bacteria	→	→	→	→	→	T&ES-S&SI; RP&CA; City Animal Shelter
<b>MCM #2 Public Involvement/Participation</b>							
2A	Public Notice and Participation	→	→	→	→	●	T&ES-S&SI
2B	Staff Support and Annual Water Quality Update to the EPC	→	→	→	→	→	T&ES-S&SI
2C	City Sponsorship of Earth Day	→	→	→	→	→	RP&CA; Earth Day Committee
2D	City Promotion of Clean Up Events	→	→	→	→	→	T&ES-S&SI; RP&CA; OCPI; T&ES-RR
<b>MCM #3 Illicit Discharge Detection and Elimination</b>							
3A	Nuisance Abatement Hotline and Web Based Reporting Form	→	→	→	→	→	T&ES-S&SI; ITS; Code Administration
3B	Household Hazardous Waste (HHW) Program	→	→	→	→	→	T&ES-RR
3C	Prohibition on Illicit Discharges	→	→	→	→	→	T&ES-S&SI; FD
3D	Illicit Discharge Detection and Elimination Training	→	→	→	→	→	T&ES-S&SI; T&ES-PWS
3E	Identification of All Permitted Stormwater Discharges	→	→	→	→	→	T&ES-S&SI
3F	Prohibition of Outdoor Cleaning of Restaurant Equipment	→	→	→	→	→	P&Z; T&ES-S&SI
3G	Storm Sewer System Map	→	→	→	●	→	T&ES-S&SI; T&ES-I&ROW
3H	Outfall Field Screening and Illicit Discharge Investigations	→	→	→	→	→	T&ES-S&SI
<b>MCM #4 Construction Site Stormwater Runoff</b>							
4A	Maintain DEQ Erosion and Sediment Control Program Consistency	●	●				T&ES-S&SI; T&ES-C&I; T&ES-I&ROW

BMP	Task	PY1	PY2	PY3	PY4	PY5	Responsibility
4B	VSMP Permits for Construction Activities	●	→	→	→	→	T&ES-S&SI; TE&S-C&I; T&ES-I&ROW
4C	Site Inspections for Land Disturbing Activities	→	→	→	→	→	T&ES-S&SI; T&ES-C&I
4D	Citizen Complaint Reporting Mechanism	→	→	→	→	→	T&ES-S&SI; T&ES-C&I
4E	Land Disturbing Activities Tracking System	→	→	→	→	→	T&ES-I&ROW; T&ES-S&SI
<b>MCM #5 Post-Construction Stormwater Management in New Development and Development on Prior Developed Lands</b>							
5A	BMP Inventory	●	→	→	→	→	T&ES-S&SI
5B	BMP Maintenance Agreements	●	→	→	→	→	T&ES-I&ROW; T&ES-S&SI; City Clerk of the Circuit Court
5C	Maintain Legal Authority	●	→	→	→	→	T&ES-S&SI
5D	BMP Design Guidelines	→	→	→	→	→	T&ES-S&SI; T&ES-I&ROW
5E	BMP Facility Inspection and Maintenance	●	→	→	→	→	T&ES-PWS
5F	Private BMP Facility Inspection and Enforcement	→	→	→	→	→	T&ES-S&SI
<b>MCM #6 Pollution Prevention/Good Housekeeping for Municipal Operations</b>							
6A	Municipal High Priority Facility Identification	●	→	→	→	→	T&ES-S&SI
6B	Stormwater Pollution Prevention Plans for Municipal High Priority Facilities		→	→	●	→	T&ES-S&SI
6C	Catch Basin and Inlet Cleaning Program	→	→	→	→	→	T&ES-PWS
6D	Turf and Landscape Management	●	→	→	→	→	RP&CA, General Services
6E	Pollution Prevention Training	→	→	→	●	→	T&ES-S&SI
6F	Pollution Prevention Policies and Procedures	→	●	→	→	→	T&ES-S&SI; T&ES-PWS
<b>Key:</b> ● Complete something by a certain date (see BMP descriptions in Section D of this Program Plan) → Ongoing							

## G. ANNUAL TRAINING PLAN AND SCHEDULE

Specific training schedules are listed in Table 6. All training shall be provided to address the requirements documented in the City's *General Permit for Discharges from Small Municipal Separate Storm Sewer Systems* (General Permit No. VAR040057). Training topics are listed more specifically in BMP 6E – Pollution Prevention Training.

**Table 6. Training Frequency**

Municipal Department/Division	Subject (Lead Instructor)		
	Illicit Discharge Detection & Elimination <sup>1</sup> (T&ES-S&S)	Pollution Prevention & Good Housekeeping <sup>2</sup> (T&ES-S&S)	Spill Response (Fire Department)
T&ES Resource Recovery	-	-	-
• Street Cleaning	Biennial	Biennial	N/A
• Refuse Collection	Biennial	Biennial	N/A
• Recycling	Biennial	Biennial	N/A
T&ES Public Works Services	-	-	-
• Street Maintenance	Biennial	Biennial	N/A
• Sewer Maintenance	Biennial	Biennial	N/A
• Sidewalk Maintenance	Biennial	Biennial	N/A
RP&CA Operations	-	-	-
• Park Maintenance	Biennial	Biennial	N/A
• Facility Maintenance	Biennial	Biennial	N/A
• Natural Resources	Biennial	Biennial	N/A
General Services	-	-	-
• Facility Management	Biennial	Biennial	N/A
• Fleet Services	Biennial	Biennial	N/A
T&ES Traffic Operations	Biennial	Biennial	N/A
Alexandria City Public Schools Operations & Maintenance	Biennial	Biennial	N/A
Emergency Personnel	N/A	N/A	Annual <sup>3</sup>

1. All municipal employees from the departments/divisions listed receive training in the recognition and reporting of illicit discharges.
2. Pollution Prevention & Good Housekeeping training given to all municipal employees includes good housekeeping and pollution prevention practices employed during road, street, and parking lot maintenance, in and around maintenance and public works facilities, and in and around recreational facilities as required by permit Sections II.b.6.d.(2), (3), & (7).
3. Emergency response employees with Hazmat certification are required to have 24 hours of training annually in order to retain certification.

## APPENDIX A. TMDL ACTION PLANS FOR POLLUTANTS ALLOCATED TO THE MS4 IN APPROVED LOCAL TMDLS

The City of Alexandria's *General Permit for Discharges from Small Municipal Separate Storm Sewer Systems* (General Permit No. VAR040057) requires a TMDL Action Plan to be developed for each approved local TMDL within 24 months of permit coverage (i.e. by June 30, 2015).

At the time this appendix of the Program Plan was being prepared (June 2014), the Virginia Department of Environmental Quality was in the process of developing a guidance document to help permittees meet the local TMDL Action Plan requirements contained in the Commonwealth's MS4 permits. When the guidance document is substantially completed, Alexandria will prepare the required local TMDL Action Plans (identified in Section C of this Program Plan) in accordance with the terms of General Permit No. VAR040057 and update this appendix.

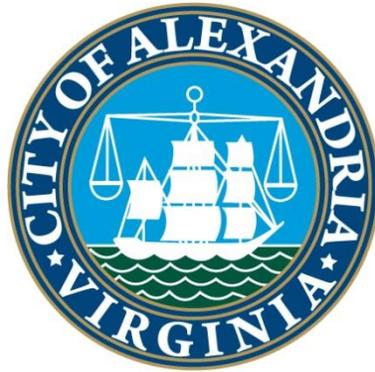
## APPENDIX B. CHESAPEAKE BAY TMDL ACTION PLAN

The City of Alexandria's *General Permit for Discharges from Small Municipal Separate Storm Sewer Systems* (General Permit No. VAR040057) requires a Chesapeake Bay TMDL Action Plan to be developed within 24 months of permit coverage (i.e. by June 30, 2015).

At the time this appendix of the Program Plan was being prepared (May 2014), the Virginia Department of Environmental Quality was in the process of developing a guidance document to help permittees in the Chesapeake Bay Watershed meet the Chesapeake Bay TMDL Action Plan requirements contained in the Commonwealth's MS4 permits. When the guidance document is substantially completed, Alexandria will prepare a Chesapeake Bay TMDL Action Plan in accordance with the terms of General Permit No. VAR040057 and update this appendix.

## APPENDIX C. DOCUMENTS RELATED TO MCM #3, ILLICIT DISCHARGE DETECTION AND ELIMINATION

The City of Alexandria updated its *Illicit Discharge Detection and Elimination Manual* to meet the requirements in its *General Permit for Discharges from Small Municipal Separate Storm Sewer Systems* (General Permit No. VAR040057). This appendix contains the May 9, 2014 update of the IDDE manual.



**City of Alexandria, Virginia  
Illicit Discharge Detection and Elimination Program**

**5/09/2014**

**Eco-CITY  ALEXANDRIA**

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## Purpose

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The purpose of the City of Alexandria, Virginia Illicit Discharge Detection and Elimination Program is to protect the public health, safety and welfare by reducing the discharge of pollutants from the City's Municipal Separate Storm Sewer System (MS4), to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act and its attendant regulations.

## Legal Authority

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Legal authority regulating the discharge of materials into the stormwater system is provided by the Virginia Statewide Fire Prevention Code and the City of Alexandria, Virginia Code of Ordinances.

### The Virginia Statewide Fire Prevention Code

#### **2703.3**

Hazardous materials in any quantity shall not be released into a sewer, storm drain, ditch, drainage canal, creek stream, river, lake, or tidal waterway or on the ground, sidewalk, street, highway or into the atmosphere.

Exceptions:

1. The release or emission of hazardous materials is allowed when in compliance with federal, state, or local governmental agencies, regulations, or permits.
2. The release of pesticides is allowed when used in accordance with registered label directions.
3. The release of fertilizer and soil amendments is allowed when used in accordance with manufacturer's specifications.

### The Alexandria, Virginia Code of Ordinances

#### **11-13-2**

- (a) It shall be unlawful for any person to dump any waste on any property, in any waters, or in any sanitary sewer or stormwater system, except as authorized by law or by applicable permit. It shall be the burden of the alleged violator to show proof of any applicable permits.

## Illicit Discharge Detection and Elimination Program Overview

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The City of Alexandria, Virginia Illicit Discharge and Detection and Elimination Program provides a guideline for staff in the investigation of illicit discharges into the MS4 and local waterways.

As required by the City's MS4 permit, the City will annually screen for illicit discharges by:

1. Performing a dry weather screening risk assessment,
2. Screening a minimum of fifty priority outfalls per year, and
3. Investigating potential illicit discharges found during outfall field screening.

Staff will also respond to illicit discharge complaints filed with the City. All investigations will follow the procedures outlined in the program document.

In cases where the source and responsible party can be determined, staff will document all investigative procedures, notify the responsible party, and when deemed necessary will proceed to enforcement. Enforcement may involve issuing a court summons, a notice of violation (NOV), and/or abatement and cleanup of the illicit discharge.

All investigations will be performed in accordance with all state, federal, and local laws and regulations.

## Dry Weather Screening Risk Assessment

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### **Risk Assessment**

The purpose of the risk assessment is to use mapping and other available data to determine the potential severity of illicit discharges within the City of Alexandria and to identify which outfalls merit priority investigation.

Risk assessments should be performed annually before dry weather outfall screenings begin. Areas with high illicit discharge potential will be the first areas of focus for inspection. Staff will use mapping data to visually assess areas of high illicit discharge potential based upon priority factors. A minimum of 50 outfalls per year will be inspected per the City's MS4 permit requirement.

Outfalls will be prioritized annually for dry weather field screening based on the following factors:

1. History of discharge complaints,
2. Poor dry weather water quality as determined from field screening data,
3. Type of development and zoning, and
4. Watershed TMDL(s).

## Dry Weather Field Screening Procedures

### Purpose

The purpose of field screening is to conduct field investigative work and involves rapid field screening of priority outfalls followed by indicator monitoring at suspect outfalls to characterize flow types and trace sources.

### Procedure

Staff should be equipped with basic field mapping, outfall field screening forms, and equipment during field screening investigations. A blank outfall field screening form can be found in Appendix A and a checklist of field screening equipment can be found in Appendix B.

### Field Screening Investigation

Field screening must be completed for at least 50 priority outfalls annually as identified in the risk assessment. Field screenings will be conducted using the outfall field screening form and procedures outlined in this document.

Each outfall investigation must include:

- 1) Completed outfall field screening form
- 2) Digital picture
- 3) Spray painting/marketing the outfall with the outfall ID number (where possible and safe)

### *The Outfall Field Screening Form*

#### Section 1: Background Data

Facility ID:	Outfall Location:
Watershed / HUC:	Local Subwatershed:
Today's date:	Military Time:
Screening performed by:	Photo #(s):
Weather, Temp.(°F):	Time since last precipitation:      Amount:
Local Land Use (Check all that apply):	
<input type="checkbox"/> Ultra-Urban Residential <input type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Suburban Residential <input type="checkbox"/> Open Space / Park	

Section one is used to indicate background information for each outfall. A picture of each outfall must be taken and the photo number recorded.

Rainfall data will be taken from NOAA's National Climatic Data Center using the station: FRANCONIA 1.3 SSE, VA US GHCND:US1VAFX0033. <http://www.ncdc.noaa.gov/>

**Section 2-Outfall Description**

LOCATION	MATERIAL	SHAPE		DIMENSION (in)	SUBMERGED
<input type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter: _____	Water: <input type="checkbox"/> No <input type="checkbox"/> Partial <input type="checkbox"/> Fully  Sediment: <input type="checkbox"/> No <input type="checkbox"/> Partial <input type="checkbox"/> Fully
<input type="checkbox"/> Open Drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other: _____		Depth: _____ Width: _____ Top: _____ Bottom: _____	<input type="checkbox"/> No <input type="checkbox"/> Partial <input type="checkbox"/> Fully
Flow Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No (If no, skip to Section 4)				
Flow Description	<input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial				

Section two is used to record basic information about each outfall including material, shape, size, and submergence. If flow is present, continue to section three to record data. If no flow is present, skip to section five to record data.

**Section 3-Field Data for Flowing Outfalls**

PARAMETER	RESULT	UNIT	EQUIPMENT USED
<input type="checkbox"/> Flow #1	Volume		
	Time to fill		
<input type="checkbox"/> Flow #2	Flow Depth		
	Flow Width		
	Measured length		
	Time of travel		
PARAMETER	RESULT	EQUIPMENT USED	ACTION LEVEL
Temperature			<input type="checkbox"/> Yes <input type="checkbox"/> No
pH			<input type="checkbox"/> Yes <input type="checkbox"/> No
Ammonia			<input type="checkbox"/> Yes <input type="checkbox"/> No
Conductivity			<input type="checkbox"/> Yes <input type="checkbox"/> No
Chlorine			<input type="checkbox"/> Yes <input type="checkbox"/> No
Other:			<input type="checkbox"/> Yes <input type="checkbox"/> No

Section three is used to record data for flowing outfalls.

Flow measurement

The first flow measurement technique records the time it takes to fill a one liter sample bottle or other container (cut out milk container marked to one liter of volume). The flow volume is determined as the volume of flow captured in the container per unit time.

The second technique measures flow rate based on velocity and cross sectional area, and is preferred for larger discharges where containers are too small to effectively capture the flow. Staff measures and marks off a fixed flow length (usually about five feet), crumbles leaves or other light material, and drops them into the discharge. Staff then measures the time it takes the material to travel across the length. The velocity of flow is computed as the length of the flow path (in feet) divided by the travel time (in seconds). Next, the cross-sectional flow area is measured by taking multiple readings (or best estimates) of the depth and width of flow. Lastly, cross-sectional area (in square feet) is multiplied by flow velocity (feet/second) to calculate the estimated flow rate (in cubic feet/second).

Indicator parameters

Temperature, pH, ammonia, conductivity, and chlorine are initially tested by using field sampling equipment including test strips and probes. If any of these parameters exceed the action level as specified in Appendix C, this is to be noted on the field screening form.

**Section 4: Physical Indicators for Flowing Outfalls Only**

Are Physical Indicators Present in the flow?  Yes  No *(If No, Skip to Section 5)*

PARAMETER	PRESENT	DESCRIPTION	SEVERITY		
Odor	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Sewage <input type="checkbox"/> Sour <input type="checkbox"/> Other: <input type="checkbox"/> Sulfide <input type="checkbox"/> Gas	<input type="checkbox"/> 1-Faint	<input type="checkbox"/> 2-Moderate	<input type="checkbox"/> 3-Severe
Color	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Yellow <input type="checkbox"/> Other:	<input type="checkbox"/> 1-Faint in sample bottle	<input type="checkbox"/> 2-Clearly visible in sample bottle	<input type="checkbox"/> 3-Clearly visible in outfall
Floatables	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Sewage (toilet paper, etc.) <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Suds <input type="checkbox"/> Other	<input type="checkbox"/> 1-Slight-no obvious origin	<input type="checkbox"/> 2-Moderate- indications of origin	<input type="checkbox"/> 3-Obvious- origin clear

Section four is only used to record data for flowing outfalls with physical indicators.

Indicator parameters

Odor- an indication of any smells from the discharge and/or outfall.

- A score of 1 is assigned when the odor is faint or when the field crew cannot agree on its presence or origin.
- A score of 2 is assigned when the odor is moderate within the discharge and/or outfall.
- A score of 3 is assigned when the odor is noticeable from a distance.

Color- the color of the discharge when a sample is taken in a clear sample bottle and held up to the light.

- A score of 1 is assigned when the color in the sample bottle is faint.
- A score of 2 is assigned when the color in the sample bottle is highly visible.
- A score of 3 is assigned when the color is visible in the outfall discharge.

Floatables- the presence of floatable materials in the outfall discharge (not including trash).

- A score of 1 is assigned when there are a few floatables with no known origin.
- A score of 2 is assigned when there are moderate floatables with indications of an origin.
- A score of 3 is assigned when there are a large number of floatables or the origin is obvious. Sewage is always designated a 3.

**Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls**

Are physical indicators that are not related to flow present?  Yes  No *(If No, Skip to Section 6)*

INDICATOR	PRESENT	DESCRIPTION	COMMENTS
Outfall damage	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Breakage <input type="checkbox"/> Corrosion <input type="checkbox"/> Cracking/Chipping	
Deposits/Stains	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil <input type="checkbox"/> Suds <input type="checkbox"/> Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Brown <input type="checkbox"/> Green <input type="checkbox"/> Other:	

Section five describes physical indicators around all outfalls that can be indicators of past illicit discharges. Breakage in the outfall, deposits or stains along the outfall, an overgrowth of vegetation or inhibition of vegetation, poor pool quality, and benthic growth in the pipe are all potential indicators of past, transitory, or intermittent illicit discharges.

**Section 6: Overall Outfall Illicit Discharge Characterization**

<input type="checkbox"/> Unlikely	<input type="checkbox"/> Potential (2 or more indicators present)	<input type="checkbox"/> Suspect (Indicator with rank 3 severity)
<input type="checkbox"/> Obvious		

**Section 7: Follow up**

Follow-up needed?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Caulk dam needed and set?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Return for in-depth sample collection?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Laboratory sample needed?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Recheck for flow at different time interval?	<input type="checkbox"/> Yes <input type="checkbox"/> No

Sections 6 and 7 evaluate flow for illicit discharge potential and outline follow up action to be performed.

After the outfall screening is complete, outfalls are to be designated by their illicit discharge potential.

1. Unlikely-shows no signs of illicit discharges. Follow-up on this outfall is low priority.
2. Potential-has two or more indicators present. Follow-up on this outfall is moderate priority. Return for in-depth sample collection and illicit discharge investigation if the discharge type cannot be determined. If the outfall is not flowing, return during different day and time intervals to determine if it is an intermittent discharge or set up a caulk dam to trap the discharge.
3. Suspect-has at least one indicator with a rank 3 severity. This outfall is a likely illicit discharge and follow-up is high priority. Return for in-depth sample collection and illicit discharge investigation if the discharge type cannot be determined. If the outfall is not flowing, return during different day and time intervals or set up a caulk dam to trap the discharge.
4. Obvious-this outfall has an obvious illicit discharge. Staff should begin immediately investigating the discharge to determine the responsible party. All suspected sanitary sewer discharges will be investigated first.

After completion of the outfall field screening, staff should also report any non-tidal submerged outfalls, outfalls that are blocked with sediment or plant material, majorly damaged outfalls, or other outfall repair needed using Cityworks.

Field screening data must then be entered into the database for record keeping and future analysis.

## **Illicit Discharge Investigations**

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Illicit discharge investigations are performed when:

1. An illicit discharge complaint has been received by the City, or
2. An illicit discharge is found during annual field screening of outfalls.

### **Investigation Procedure**

1. Every effort will be made to coordinate efforts between the Fire Marshal's Office and Office of Environmental Quality. Whenever possible, staff from both departments should be present during illicit discharge investigations.
2. In cases of highly visible suspected illicit discharges, the Fire Marshal will issue an emergency notification through the Environmental Industrial Unit (EIU).
3. Whenever hazardous materials are suspected, notification will be made immediately to the Fire Department..
4. Upon location of a suspected illicit discharge, staff will perform a visual investigation to determine the source. If the type of discharge or suspected source cannot be determined by staff upon arrival to the site of the reported discharge, staff will perform an illicit discharge screening and/or illicit discharge tracking to determine the source.

### **Visual Investigation**

Staff will visually inspect the suspected source area for illicit discharge indicators. These include:

1. Odor
2. Color
3. Abnormal vegetation
4. Deposits and stains
5. Floatables

In cases where the source can be determined through visual investigations, no further screening is necessary and staff may proceed to enforcement.

### **Sanitary Sewer Overflows**

Sanitary sewer overflows will be reported as described in the City's Sanitary Sewer Overflow Response Plan Procedure TES-Maint-2012-08 which can be found in Appendix D. Suspected sanitary sewer overflows will be investigated before any other suspected illicit discharge.

### **Illicit Discharge Screening**

If the type of illicit discharge is not known, staff may take a grab sample of the discharge and use the flow chart method and benchmark concentrations to determine the most likely type of discharge. The flow chart can be found in Appendix E. An illicit discharge screening sheet can be found in Appendix F.

### **Field Sampling Protocol**

1. All preliminary testing is conducted in the field.

2. Determination of parameters tested will be based upon suspected discharge.
3. Make sure testing probes and sample bottles have been properly cleaned and stored.
4. During sampling use all personal protective equipment (PPE) as directed by the material safety data sheet (MSDS). Wash hands after sampling.
5. During sample collection, do not disturb any sediments or benthic growth that may contaminate or skew results.
6. Rinse sample collection device three times with sample water before collecting the sample.
7. Fill sample bottle to top without touching inside of bottle lid or rim.
8. Initiate specific test procedures immediately.
9. Compare sample test results to benchmark concentration levels.
10. Label any waste bottles immediately with all chemicals used for testing and dispose of properly.

If the discharge is determined to be an intermittent discharge, staff may use a caulk dam and/or check the suspect discharge area during varying day and time intervals.

### **Benchmark Concentrations**

Illicit discharges may be from common household or commercial sources or industrial sources. Benchmarks for action are set according to state and federal standards.

1. When testing a suspected illicit discharge, use action levels from Appendix C.
2. Examine surrounding land use in sub-watershed; if industrial sources are present, additionally use industrial benchmarks from Appendix G.
3. If testing results exceed benchmark concentrations then the action level has been reached, staff will then begin tracking the source of the illicit discharge.

### **Contract Laboratory Services**

If the type of discharge cannot be determined, a laboratory sample may be taken from the flow in accordance with the laboratory sampling protocol located in Appendix H. This sample will be sent to the contract lab to help determine the type of discharge.

### **Illicit Discharge Tracking**

Once an illicit discharge is found and has been screened, if the source cannot be determined, staff may use a combination of methods to determine the source of the discharge. These include:

1. Storm drain network investigation
2. Drainage area investigation
3. Dye Testing
4. Video Testing

### **Storm Drain Network Investigation**

When performing storm drain network investigations, staff strategically inspects manholes, inlets, and channels within the storm drain network system to measure chemical or physical indicators to isolate discharges to a specific segment of the network. Once the pipe segment has been identified additional investigations are used to find the specific discharge.

Staff must first decide how to begin the network investigation.

1. Work progressively up the trunk -this method is used in small drainage area investigations.
  - a. Begin with the manhole closest to the outfall and inspect for the illicit discharge.
  - b. Move progressively up the largest diameter pipe flowing to the outfall (the trunk) inspecting for discharges at each manhole or inlet until no discharge is present.
  - c. Isolate the discharge between two drainage structures.
  - d. Begin appropriate investigation.
2. Split the storm drain network-this method is used in large or complex drainage areas.
  - a. Review the map of the storm drain network leading to the suspect outfall.
  - b. Identify the major branches that lead to the largest diameter pipe flowing to the trunk.
  - c. Identify manholes and/or inlets to inspect at the farthest downstream node of each contributing branch and one immediately upstream.
  - d. Working up the network, investigate manholes and/or inlets on each contributing branch and trunk, until the source is narrowed to a specific section of the trunk or contributing branch.
  - e. Once the discharge is narrowed to a specific section of trunk, begin appropriate investigation.
  - f. If narrowed to a contributing branch, move up or split the branch until a specific pipe segment is isolated, and begin appropriate investigation.
3. Move down the storm drain network-this method is used in very large drainage areas with many potential sources of illicit discharge.
  - a. Begin by inspecting manholes and/or inlets at the head of the storm drain network.
  - b. Verify that each upstream branch has no contributing illicit discharges before moving down the pipe to a junction manhole or inlet.
  - c. If a discharge is found, perform appropriate investigation to determine the source of the discharge.
  - d. Verify the discharge has be fixed or removed before moving down the pipe.

### **Drainage Area Investigations**

Drainage area investigations are used when an illicit discharge has distinct indicator characteristics that allow staff to quickly ascertain the specific industrial or commercial source of the discharge. Drainage area investigations are not to be used on suspected sewage discharges.

When performing drainage area investigations:

1. Review current GIS data for the drainage area.
2. Review current permit data for the drainage area.
3. Determine potential discharges within the drainage area.
4. Perform other types of investigations when necessary.

### **Dye Testing**

If the illicit discharge is suspected to be from the sanitary sewer, dye testing may be conducted by introducing non-toxic dye into toilets, sinks, shop drains and other plumbing fixtures. Before beginning testing, staff should:

1. Review storm drain and sewer maps to determine lateral sewer connections and how they can be accessed;
2. Notify property owners and gain access to the property;
  - a. For commercial and industrial properties, staff will carry identification to document their legal authority to enter.
  - b. For residential properties, staff should coordinate with the owner or resident to ensure access to the property.
3. Notify emergency personnel of the days and times dye testing is being performed.
4. Verify all necessary equipment is available for use.

The following guidelines should be used for dye testing:

1. Choose the most appropriate color and type of dye for the facility. When testing multiple fixtures, it is advisable to use two different color dyes and alternate between them.
2. Select the fixtures to test.
  - a. In industrial facilities, check most floor drains.
  - b. For plumbing fixtures, check a representative fixture (i.e. a bathroom sink).
  - c. If working with multiple floors, start at the basement and work up.
  - d. Make sure to flush with plenty of water to ensure the dye moves through the system.
3. Choose the closest sanitary sewer manhole to make observations (typically a sewer lateral). If not possible, choose a downstream manhole.
4. When the dye is introduced, the staff member placing the dye calls the monitoring staff member at the manhole to inform them that the dye has been placed.
5. When the dye is observed, the staff member observing calls the staff member placing the dye to verify that the dye has entered the sanitary sewer system.
6. If dye is not observed (typically within one hour);
  - a. Check storm drains for the presence of dye;
  - b. Check for the presence of a septic system;
  - c. The sewer line may be clogged or leaking.

### **Video Testing**

Video testing may be performed by City maintenance staff in cases where the discharge cannot be determined by other types of investigations or in cases where other testing is not practical (large residential neighborhoods).

### **Cases of Undetermined Sources**

If within six months of beginning an investigation, the source cannot be identified:

1. The City will document all steps of the investigation.
2. If the discharge is intermittent, the City must document a minimum of three separate investigations that were made to attempt to observe flowing discharge.

3. The documentation must include:
  - a. The nature of the violation,
  - b. The date the violation was observed and reported,
  - c. The results of the investigation,
  - d. The follow up to the investigation,
  - e. The resolution of the investigation, and
  - f. The date that the investigation was closed.

## **Enforcement**

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All enforcement action relating to illicit discharges into the City's MS4 and waterways will be performed by the Fire Marshal's office.

### **Determination of Responsibility**

The person initiating the discharge shall be responsible for all associated response and materials to remediate the discharge. If a responsible party cannot be immediately located or determined, the owner of the property is responsible for the discharge and costs of associated response and materials..

### **Abatement of the Discharge**

Abatement and remediation of the illicit discharge and all associated damages will be performed by the responsible party. A list of contractors and environmental cleaning companies may be supplied to private property owners.

### **Time Frame Allowed for abatement or cleanup**

The time frame allowed for abatement and remediation of the discharge will be determined by the type of abatement, the equipment and resources needed and the complexity of the incident. Upon completion of remediation of the discharge, the responsible party must submit documentation to the Fire Marshal's office that the discharge has been abated and that any required repairs have been completed. Staff will confirm removal and cleanup of the discharge on site.

### **General Steps for Enforcement**

1. The Fire Marshal will determine if a violation exists and will determine the appropriate level of enforcement of the violation. Enforcement actions may include issuing a notice of violation or other enforcement actions as prescribed by law for the nature of the offense.
2. Educate the responsible party and initiate the appropriate enforcement action.
3. Perform a follow up inspection to confirm corrective actions have been completed properly by the deadline set by the Fire Marshal. The responsible party may complete corrective actions before the deadline and request an earlier follow up inspection.
4. If the discharge or connection has not been repaired after the time frame allowed, the Fire Marshal will determine the next level of enforcement.

### **Penalties**

Penalties upon conviction shall be as set out in Section 27-100 of the Code of Virginia.

27-100. Violation a misdemeanor.

It shall be unlawful for any owner or any other person, firm, or corporation on or after the effective date of any Code provisions, to violate any provisions of the Fire Prevention Code. Any such violation shall be deemed a Class 1 misdemeanor, and any owner, or any

other person, firm, or corporation convicted of such violation shall be punished in accordance with the provisions of 18.2-11.

#### 18.2-11. Punishment for conviction of misdemeanor.

The authorized punishments for conviction of a misdemeanor are:

(a) For Class 1 misdemeanors, confinement in jail for not more than twelve months and a fine of not more than \$2,500, either or both.

### **Abatement**

The City can perform abatement of illicit discharges in the following circumstances:

1. The responsible party fails to perform the required cleanup after being issued a summons or NOV,
2. The responsible party cannot be identified, or
3. The City is the responsible party.

In cases where a summons or NOV has been issued, but the responsible party fails to clean up the site as required, the Court can order the required cleanup of the area.

When deemed necessary by the Fire Marshal, cleanup may be initiated by the fire department or by an authorized individual or firm with approval of the City Manager's Office. Costs associated with such cleanup are borne by the party responsible for the discharge.

In cases where the responsible party is unknown, if deemed necessary by the Fire Marshal, cleanup may be initiated by the fire department or by an authorized individual or firm. If a responsible party is found at a later date, costs associated with such cleanup can then be borne by the party responsible for the discharge.

### **Documentation**

All NOVs and issued summons shall be tracked and logged in the City's database. For each notice the documentation shall specify:

- 1) The nature of the violation,
- 2) The date the violation was observed and reported,
- 3) The results of the investigation,
- 4) The follow up to the investigation,
- 5) The resolution of the investigation, and
- 6) The date that the investigation was closed.

## Appendices

## Appendix A-Outfall Field Screening

### City of Alexandria, Virginia Outfall Field Screening

#### Section 1: Background Data

Facility ID:		Outfall Location:	
Watershed / HUC:		Local Subwatershed:	
Today's date:		Military Time:	
Screening performed by:		Photo #(s):	
Weather , Temp.(°F):		Time since last precipitation:	Amount:
Local Land Use (Check all that apply):			
<input type="checkbox"/> Ultra-Urban Residential <input type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Suburban Residential <input type="checkbox"/> Open Space / Park			

#### Section 2-Outfall Description

LOCATION	MATERIAL	SHAPE		DIMENSION (in)	SUBMERGED
<input type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter: _____	Water: <input type="checkbox"/> No <input type="checkbox"/> Partial <input type="checkbox"/> Fully  Sediment: <input type="checkbox"/> No <input type="checkbox"/> Partial <input type="checkbox"/> Fully
<input type="checkbox"/> Open Drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other: _____		Depth: _____ Width: _____ Top: _____ Bottom: _____	
Flow Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No (If no, skip to Section 4)				
Flow Description	<input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial				

#### Section 3-Field Data for Flowing Outfalls

PARAMETER	RESULT	UNIT	EQUIPMENT USED
<input type="checkbox"/> Flow #1	Volume		
	Time to fill		
<input type="checkbox"/> Flow #2	Flow Depth		
	Flow Width		
	Measured length		
	Time of travel		
PARAMETER	RESULT	EQUIPMENT USED	ACTION LEVEL
Temperature			<input type="checkbox"/> Yes <input type="checkbox"/> No
pH			<input type="checkbox"/> Yes <input type="checkbox"/> No
Ammonia			<input type="checkbox"/> Yes <input type="checkbox"/> No
Conductivity			<input type="checkbox"/> Yes <input type="checkbox"/> No

Chlorine			<input type="checkbox"/> Yes <input type="checkbox"/> No
Other:			<input type="checkbox"/> Yes <input type="checkbox"/> No

**Section 4: Physical Indicators for Flowing Outfalls Only**

Are Physical Indicators Present in the flow?  Yes  No *(If No, Skip to Section 5)*

PARAMETER	PRESENT	DESCRIPTION	SEVERITY		
Odor	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Sewage <input type="checkbox"/> Sour <input type="checkbox"/> Other: <input type="checkbox"/> Sulfide <input type="checkbox"/> Gas	<input type="checkbox"/> 1-Faint	<input type="checkbox"/> 2-Moderate	<input type="checkbox"/> 3-Severe
Color	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Yellow <input type="checkbox"/> Other:	<input type="checkbox"/> 1-Faint in sample bottle	<input type="checkbox"/> 2-Clearly visible in sample bottle	<input type="checkbox"/> 3-Clearly visible in outfall
Floatables	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Sewage (toilet paper, etc.) <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Suds <input type="checkbox"/> Other	<input type="checkbox"/> 1-Slight-no obvious origin	<input type="checkbox"/> 2-Moderate-indications of origin	<input type="checkbox"/> 3-Obvious-origin clear

**Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls**

Are physical indicators that are not related to flow present?  Yes  No *(If No, Skip to Section 6)*

INDICATOR	PRESENT	DESCRIPTION	COMMENTS
Outfall damage	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Breakage <input type="checkbox"/> Corrosion <input type="checkbox"/> Cracking/Chipping	
Deposits/Stains	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil <input type="checkbox"/> Suds <input type="checkbox"/> Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Brown <input type="checkbox"/> Green <input type="checkbox"/> Other:	

**Section 6: Overall Outfall Illicit Discharge Characterization**

Unlikely  Potential (2 or more indicators present)  Suspect (Indicator with rank 3 severity)  Obvious

**Section 7: Follow up**

Follow-up needed?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Caulk dam needed and set?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Return for in-depth sample collection?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Laboratory sample needed?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Recheck for flow at different time interval?	<input type="checkbox"/> Yes <input type="checkbox"/> No

**Section 8: Comments**

## Appendix B-Field Screening Equipment List

- Field Map(s)
- Spray Paint
- Digital Camera
- Cell phone or radio
- Emergency contact list
- Clipboard and pencil or water proof pens
- Field Screening Sheets
- First Aid Kit
- Flash Light
- Surgical Gloves
- Waders and/or Snake proof boots
- Safety Vest
- Insect repellent
- Machete/clippers (where needed)
- Sanitary wipes
- Backpack
- Clear sample bottles
- Test strips
- YSI Meter
- Safety goggles & lab coat
- Kimwipes
- Caulk
- Dipper

### **If laboratory sample is taken:**

- Cooler with ice
- Permanent marker
- Labeling tape
- One liter plastic sampling bottles or bottles provided by laboratory for samples
- Chain of custody sheet

## Appendix C-Field Screening Action Levels

Dissolved Oxygen:	< 4.0 mg/L ***
pH:	< 6.0 or > 9.0 ***
Temperature:	Nontidal waters >32°C***
Conductivity	> 400 uS/cm *
Turbidity	>50 NTU*
Ammonia	> 3 mg N/L***
Chlorine	>17 ug/L***
Detergents	> 0.25 mg/L *

\* No Federal EPA or State DEQ standard.

\*\*\* See 9VAC25-260-50

## Appendix D-Sanitary Sewer Overflow Reporting Procedure

<b>TITLE</b>	<b>Sanitary Sewer Overflow Response Plan</b>
<b>PROCEDURE #</b>	TES-Maint-2012-08

### SECTION 1: PURPOSE

- 1.1 The purpose of the City of Alexandria Sanitary Sewer Overflow Response Plan (SORP) standard operating procedure is to minimize the impact of sanitary sewer overflows (SSO's) to the public and the environment. The City of Alexandria will ensure that sanitary sewer overflows are responded to in a timely manner to expedite the necessary steps to relieve the overflow. Relieving the sewage blockage and spill containment is the City's highest priority, taking in to consideration public health concerns. This response plan will be the guideline for the standard operating procedures in the event of a sanitary sewer overflow. The response plan will be reviewed periodically to ensure that all corrective measures are being taken and to determine whether periodic staff training (including refresher and/or new employee training) may be warranted.
- 1.2 The plan includes the following elements:
  - a. Section 2: Response to Notification of Spills: The City of Alexandria has adopted service call/overflow response procedures requiring immediate response to minimize or eliminate an overflow.
  - b. Section 3: Initial Spill Response: This section includes standard operating procedures that ensure the notification of first responders during normal business hours and after business hours, spill assessment and volume estimation for notification and reporting purposes.
  - c. Section 4: Service Restoration & Containment: Procedures to ensure containment, termination, maximum recovery and cleanup of spilled sewage.
  - d. Section 5: Notification: Standard practices the City uses to secure the area surrounding a spill, post warning signs as necessary and provide notification to affected City departments/divisions, other impacted agencies and the public.
  - e. Section 6: Recordkeeping and Reporting: Practices, including procedures that link field records to the City's maintenance management system, and procedures for reporting spills, as required, to appropriate regulatory agencies.

### SECTION 2: RESPONSE TO NOTIFICATION OF SPILL

- 2.1 The City of Alexandria has adopted service call/emergency response procedures and after-hours processes for calls requiring immediate response to minimize or eliminate an overflow (See Attachments). The City provides (or contracts with an emergency response contractor that provides) all necessary spill response supplies. These supplies are

available for use at any time. The SOP is to aid staff in prompt and responsible SSO response.

- 2.2 When a notification of an SSO is received, it should be clearly communicated who will respond, the estimated time of arrival, and what areas will need to be accessed. The information provided by the caller should be verified before dispatching a field crew. This includes verifying the address and nearest cross street and making sure it is part of the City's conveyance system. If not, provide the caller with the phone number of the responsible agency and follow up by calling the agency and providing the details of the call.

#### Public Observation

- 2.3 Public observation is the most common way that the City is notified of blockages and spills. Contact information for reporting sewer spills and backups are in the phone book, City website and in many pieces of literature provided by the City. The main telephone number is (703) 746-4488; this line includes an option for 24-hour call response.
- 2.4 When a report of a sewer spill or backup is made during normal business hours, City call center staff receives the call, takes the information from the caller, and completes a Cityworks service request. For emergency sewer backups, spills or blockages, the call center staff verbally communicates (does not leave a voicemail) appropriate information to the Sewers Superintendent or designee along with any information collected from other field reports. The Superintendent then notifies the City's Sewer Inspector and sewer response team, which responds to the incident as soon as possible.

#### Staff Observation

- 2.5 City staff and contractors perform periodic maintenance work on its sewer system facilities. Any problems noted with the sewer system facilities are reported to the Superintendent who, in turn, responds to emergency situations.

### **SECTION 3: INITIAL SPILL RESPONSE**

- 3.1 All sewer system calls require a response to the reported location of the event in an attempt to minimize or eliminate an overflow. The first responder (Sewer Inspector during normal business hours or City Standby staff during after-hours) must respond to the reporting party or site of the problem and initiate response activities within 60 minutes after initial reporting of the spill to the City. If a responder cannot be at the spill location within 60 minutes after the spill, then the responder must notify the Sewers Superintendent who will dispatch other available staff or emergency contractors.
- 3.2 The first responder should determine appropriate response measures based on the circumstances and information provided by the caller (e.g. weather and traffic conditions, small backup vs. sewage flowing on the ground, etc.). If additional help is needed, contact other employees, contractors, and/or equipment suppliers. Based on available information, the first responder should determine if a combination sewer cleaning truck and/or a spill response vehicle is needed.

3.3 Upon arrival at the site, the first responder should:

- Note arrival time at spill site.
- Verify the existence of a sewer system spill or backup.
- Field verify the address and nearest cross street, making sure it is part of the City's sewer/conveyance system.
- Identify and clearly assess the affected area and extent of spill. If the spill is small (i.e. less than 50 gallons) an eyeball estimate may be made. If the spill appears large (i.e. greater than 50 gallons), staff should work with a Sewer Inspector or Sewer Superintendent to measure the volume. The shape, dimensions, and the depth of the contained wastewater are needed. The shape and dimensions are used to calculate the area of the spills and the depth is used to calculate the volume. In the event of a significant spill, the City Engineering Department or Office of Environmental Quality may be required to compute the spill volume using the duration or flowrate methods.
  - *To determine the volume of a large spill (i.e. larger than 50 gallons) refer to the following process:*
    - Step 1 Sketch the shape of the contained sewage (see figure above).
    - Step 2 Measure or pace off the dimensions.
    - Step 3 Measure the depth at several locations and select an average.
    - Step 4 Convert the dimensions, including depth, to feet.
    - Step 5 Calculate the area in square feet using the following formulas: Rectangle: Area = length (feet) x width (feet); Circle: Area = diameter (feet) x diameter (feet) x 0.785 or Triangle: Area = base (feet) x height (feet) x 0.5
    - Step 6 Multiply the area (square feet) times the depth (in feet) to obtain the volume in cubic feet.
    - Step 7 Multiply the volume in cubic feet by 7.5 to convert it to gallons.
- Comply with all safety precautions (traffic, confined space, etc).
- Contact caller, if time permits.
- Notify the Sewer Superintendent and Maintenance Division Chief if:
  - The spill appears to be large, in a sensitive area, or there is doubt regarding the extent, impact, or how to proceed; or
  - Additional help is needed for line cleaning or repair, containment, recovery, lab analysis, and/or site cleanup
- Begin completion of the Form 0- SSO Overflow Reporting Form

## SECTION 4: SERVICE RESTORATION AND CONTAINMENT

### Initial Assessment

- 4.1 Upon arrival at the location of a spill into a house or a building, the first responder should evaluate and determine if the spill was caused by a blockage in the lateral or in a City-owned sewer main, caused either by a backup in the sewer main line or nearby operations and maintenance activities.
- If a blockage is found in a property owner's lateral, it should be clearly communicated that it is not the City's responsibility to work on a private lateral.
  - If a backup in the main line is found to have caused the SSO in a house or building, the first responder should relieve the blockage in the main line and provide the resident with information on claims.

### Service Restoration

- 4.2 The first responder should attempt to remove the blockage from the system and restore flow to the area. Using the appropriate cleaning tools, the field crew should set up downstream of the blockage and flush/hydroclean the sewer upstream from a clear manhole. The flows should be observed to ensure that the blockage does not recur downstream.
- 4.3 If the blockage is not relieved within the first few attempts (20 minutes), it is crucial that bypass procedures are followed immediately:
- 4.3.1 Locate the nearest downstream manhole that can accept the additional flow.
- 4.3.2 Set up a 3-inch pump for smaller collection lines, and the 6-inch pump for larger transmission lines, this should be used as a guideline, be advised that larger pumps may be needed. The pump discharge hose should be secured or placed far enough into the manhole that it will not come out during pumping. The pump and pump hose should be protected from traffic by barricades. If additional pumps are needed, they shall be rented from: Flippo Construction Company, 703.370.8778.

### Containment & Clean Up

- 4.4 The first responder should attempt to contain as much of the spilled sewage as possible using the following steps:
- Determine the immediate destination of the overflowing sewage
  - Plug storm drains using available equipment and materials to contain the spill, wherever appropriate. If spilled sewage has made contact with the storm drainage system, attempt to contain the spilled sewage by plugging downstream storm drainage facilities
    - Arrange for removal of spilled sewage or debris from storm drainage system through use of vacuum truck and/or bypass pumping

- Contain/direct the spilled sewage using dike/dam or sandbags
- Pump around the blockage/pipe failure/pump station or vacuum flow from upstream of the blockage and dispose of downstream of the blockage to prevent further overflow.

#### SSOs on Private Properties

4.5 When an SSO occurs inside of a house or building and is due to a City line backup, the first responder should instruct the property owner should be instructed to follow these guidelines:

- Keep all family members and pets away from the affected area.
- Place towels, rags, blankets, etc. between areas that have been affected and areas that have not been affected.
- Do not remove any contaminated items.
- Turn off the HVAC system.
- Move any uncontaminated property away from the overflow area.

The homeowner is responsible for clearing any blockage in the home's plumbing system or private lateral and for any resulting flood damage to the structure. The homeowner is also responsible for damage that happens because a lateral was not properly installed. Spills inside houses or buildings should be cleaned up by a professional cleaning company. Contact information for professional cleaning companies can be found in the "Water Damage Restoration" section of the Yellow Pages.

If the sewage backup is located inside a building or on private property and the backup was caused by a blockage in the public sewer main, the City may be responsible for cleanup and restoration. If this is the case, the City may arrange for a water damage restoration company. Claims by homeowners, if applicable, should be submitted based on information in Section 5.4 of this document.

#### SSOs on External/Hard Surfaced Areas

4.6 When an SSO occurs in an external location and is due to a City main, staff will make every effort to restore the environment to the condition that existed before the SSO occurred by using the procedures outlined below.

- Collect all signs of sewage solids and sewage-related material either by hand, vacuum or with the use of rakes and brooms and discharge it back into the sanitary sewer system.
- Take reasonable steps to contain and vacuum up the wastewater.
- Disinfect all areas that were contaminated from the overflow using the disinfectant solution of household bleach diluted 10:1 with water. Apply minimal amounts of the disinfectant solution using a hand sprayer. Document the volume and application method of disinfectant that was employed.
- Allow area to dry. Repeat the process if additional cleaning is required.

### SSOs on External/Landscaped and Unimproved Natural Vegetation

4.7 When an SSO occurs in an external location such as a natural area and is due to a City main, staff will make every effort to restore the environment to the condition that existed before the SSO occurred by using the procedures outlined below.

- Collect all signs of sewage solids and sewage-related material either by hand, vacuum or with the use of rakes and brooms and discharge it back into the sanitary sewer system.
- Allow the area to dry. Repeat the process if additional cleaning is required.
- Recover any sewage within storm drains, channels, curb, gutters, and culverts.
- Clear surrounding area of paper, solids, and any other signs of a SSO.
- City forces will replace vegetation, sidewalks, asphalt, fencing or any other items that were damaged as a result of the SSO or the crews working to restore service.

### Clean Up and Disinfection

4.8 Clean up and disinfection procedures should be implemented to reduce the potential for human health issues and adverse environmental impacts that are associated with an SSO event. The procedures described are for dry weather conditions and should be modified as required for wet weather conditions. Where clean-up is beyond the capabilities of City staff, a cleanup contractor will be used.

## **SECTION 5: NOTIFICATION**

### SSOs that do not Reach Public Waters

5.1 For spills that are contained and do not release unrecovered sewage into a storm drain, stream or a surface water body, notification to the public shall be accomplished through the use of signs at the location of the spill. The signs shall be left in place for a term of five business days.

- 5.1.1 City T&ES staff, Maintenance Division Chief (15t) or Sewer Superintendent (2"), shall notify the City Fire Department's Environmental Investigations Unit (EIU) emergency notification email list of all SSOs in order to provide notification to public safety and Office of Environmental Quality staff. All notices to the EIU shall reference the location of the SSO, the date and time discharge was discovered, volume, action being taken, whether it has reached the storm system and/or surface waters, and the appropriate Cityworks service request number.

### Spills that Reach Public Waters - City OEQ Requirements

5.2 The Deputy Director of the T&ES Office of Environmental Quality (or designee) shall be notified if an SSO has reached the storm sewer system and/or a surface water. OEQ staff will determine if further investigation of the discharge site and potentially affected areas is required. OEQ will assist in verifying the extent of the contamination in the field. OEQ

will be responsible for reporting to the state as required (see Section 6.3). Information in the required reports will be largely based on Form 0 - SSO Overflow Reporting Form referenced in Section 3.3, Cityworks, and/or discussions with knowledgeable staff.

The City of Alexandria Health Department has the authority to close and re-open water bodies for public water contact. The water bodies affected are determined by the following parameters and best professional judgment:

- The volume of sewage discharged;
- Parameters affecting flow of sewage to the water bodies;
- Direction of current;
- Tides;
- Past experience in the area; and/or
- Any other pertinent information.

#### Point of Contact

- 5.3 Working with the Office of Communications and Public Information, and the T&ES Public Information Officer, the T&ES Maintenance Division Chief shall be responsible for coordinating public notification, if necessary, for SSOs not reaching waters of the state; and the Deputy Director of T&ES, Office of Environmental Quality (or designee), in coordination with T&ES Maintenance Staff, shall be responsible for public notification, if necessary, for SSOs that may be reasonably expected to reach surface waters.
- 5.4 If the 550 has occurred in a building or residential property and is attributable to a blockage in a City main, the responder or the City Sewer Inspector shall:
- Gather information and fill out a Sewer Backup Summary Report.
  - Notify the Maintenance Division Chief of the incident.
  - Wait for restoration firm to arrive (if required).
  - Forward incident reports and related documents to Maintenance Division Chief.
  - For potential claims, contact the City's office of Risk Management and provide contact information to the resident.

## **SECTION 6: RECORDKEEPING & REPORTING**

### Internal SSO Documentation

- 6.1 The first responder will complete a Cityworks work order and a Field Report/Daily Sheet form. The first responder will follow the procedures and complete the Sewer Backup Summary Report if an SSO has occurred in a residence or building. The Maintenance Division Chief will prepare a file for each individual SSO. The file should include the following information:

- Initial service call information with a completed Cityworks service request
- City of Alexandria service request call field report/daily sheet form
- Copies of the City of Alexandria service request and work order forms, which should reference a volume estimate within the notes
- Closed-Circuit Television (CCTV) inspection (this is optional for SSOs that are not blockage related)
- Water quality sampling and test results, if applicable

#### External SSO Documentation

6.2 The City maintains SSO records for five years from the date of the SSO. All records shall be made available for review upon request. Records shall be retained for all SSOs, including but not limited to the following when applicable:

- Copy of Cityworks service requests and work orders;
- All original recordings for continuous monitoring instrumentation;
- Service call records and complaint logs of calls received by the City;
- SSO calls and SSO records;
- Steps that have been and will be taken to prevent the SSO from recurring and a schedule to implement those steps;
- Work orders, work completed, and any other maintenance records from the previous five years which are associated with responses and investigations of system problems related to SSOs;
- A list and description of complaints from customers or others from the previous five years; and
- Documentation of performance and implementation measures for the previous five years.

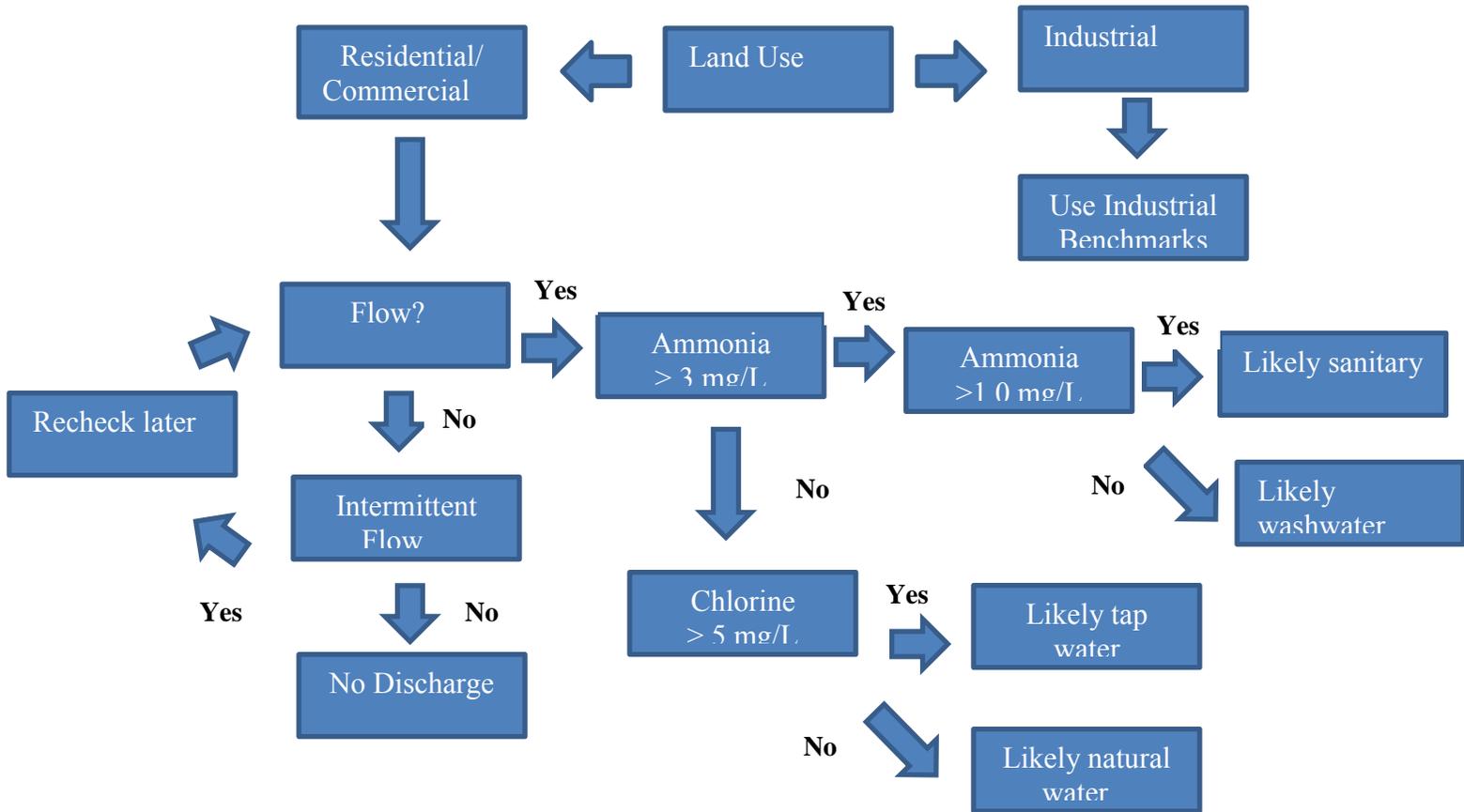
#### Reports to the State for Unauthorized Discharges

6.3 Discharges of sewage from an SSO that may reasonably be expected to enter surface waters shall be reported to the Virginia Department of Environmental Quality (VDEQ) immediately upon discovery of the discharge, but in no case later than within 24 hours after discovery. OEQ will utilize VDEQ's Pollution Response Program (PREP) online reporting to accomplish the 24 hour reporting. A written report of the unauthorized discharge shall be submitted by OEQ to VDEQ and the Virginia Department of Conservation and Recreation (DCR) within five days of the discovery of the discharge. OEQ will make the 24 hour notice and be responsible for final delivery of the five-day report. The written report shall contain the following, as noted on Form 0:

1. A description of the nature and location of the discharge;
2. The cause of the discharge;

3. The date on which the discharge occurred;
4. The length of time that the discharge continued;
5. The volume of the discharge;
6. If the discharge is continuing, how long it is expected to continue;
7. If the discharge is continuing, what the expected total volume of the discharge will be; and
8. Any steps planned or taken to reduce, eliminate and prevent a recurrence of the present discharge or any future discharges not authorized by this permit.

### Appendix E-The Flow Chart Method



## Appendix F-Illicit Discharge Field Screening Sheet

### Illicit Discharge Screening

**Closest outfall #:** \_\_\_\_\_ **Date:** \_\_\_\_\_ **Time:** \_\_\_\_\_

**Time since last rain:**  Over 72 hours  Less than 72 hours

**Quantity of last rain:**  Over 1 inch  Less than 1 inch

**Inspection Team:** \_\_\_\_\_

**Location:** \_\_\_\_\_

**Structure Type:**  Open Channel  Manhole  Outfall  Other: \_\_\_\_\_

**Dominant Land Use:**  Industrial  Commercial  Residential  Unknown

**Was Flow Observed?**  Yes  No

**Photo Taken?**  Yes  No **Photo ID#:** \_\_\_\_\_

#### Field Screening Parameters

<b>Temp:</b>	<b>Ammonia:</b>	<b>Turbidity:</b>
<b>pH:</b>	<b>Dissolved O<sup>2</sup>:</b>	<b>Conductivity:</b>
<b>Detergents:</b>	<b>Chlorine:</b>	
<b>Odor:</b> <input type="checkbox"/> None <input type="checkbox"/> Sewage <input type="checkbox"/> Sulfide <input type="checkbox"/> Sour <input type="checkbox"/> Gas <input type="checkbox"/> Other:		
<b>Color:</b> <input type="checkbox"/> Clear <input type="checkbox"/> Green <input type="checkbox"/> Yellow <input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Gray <input type="checkbox"/> Red <input type="checkbox"/> Other:		
<b>Floatables:</b> <input type="checkbox"/> None <input type="checkbox"/> Oily Sheen <input type="checkbox"/> Garbage <input type="checkbox"/> Sewage <input type="checkbox"/> Suds <input type="checkbox"/> Other:		
<b>Outfall Damage:</b> <input type="checkbox"/> None <input type="checkbox"/> Breakage <input type="checkbox"/> Corrosion <input type="checkbox"/> Cracking/Chipping		
<b>Deposits/Stains:</b> <input type="checkbox"/> None <input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:		
<b>Abnormal Vegetation:</b> <input type="checkbox"/> None <input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited		
<b>Pipe Benthic Growth:</b> <input type="checkbox"/> None <input type="checkbox"/> Brown <input type="checkbox"/> Green <input type="checkbox"/> Other:		
<b>Comments:</b>		

**Source of discharge:** \_\_\_\_\_

**Responsible Party:** \_\_\_\_\_

**Responsible Party Address:** \_\_\_\_\_

**Need Enforcement?** \_\_\_\_\_ **Date referred to Fire Marshal:** \_\_\_\_\_

## Appendix G-Industrial Benchmarks

Indicator Parameter	Benchmark Concentration
Ammonia	> 50 mg/L
Color	> 500 units
Conductivity	>2,000 $\mu$ S/cm
Hardness	> 2,000 mg/L as CaCO <sub>3</sub>
pH	<5
Turbidity	> 1,000 NTU

## Appendix H-Contract Lab Sampling Procedures

### Lab Sample Collection

1. Indicator samples are stored in a polyethylene plastic sample bottle that is opaque or clear unless otherwise directed by the contracting laboratory.
2. During sample collection, wear surgical gloves. Wash hands when sampling is complete.
3. Use a dipper or bailer for sample collection; make sure not to disturb any sediments or benthic growth in the pipe or conveyance system as the sample is taken.
4. Rinse all sampling bottles, dippers, and bailers used for sample collection three times with sample water before collecting the sample to be analyzed.
5. Fill sample bottle to top without touching inside of bottle lid or rim.
6. Add any necessary preservatives at the time of sample collection.
7. Label the bottle immediately.
8. Store samples at 4°C (40°F). Keep samples on ice in a cooler if necessary.
9. Return samples to the contracting laboratory within 24 hours, or time required for appropriate sample.
10. Complete the chain of custody as required by the contracting laboratory.



## APPENDIX D. DOCUMENTS RELATED TO MCM #4, CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

This appendix contains checklists and policies and procedures related to Minimum Control Measure 4, Construction Site Stormwater Runoff, as required in the City's *General Permit for Discharges from Small Municipal Separate Storm Sewer Systems* (General Permit No. VAR040057). These documents are referenced in Section 4.D of the City's MS4 Program Plan.



**City of Alexandria, Virginia**

**Policies and Procedures for Construction Site Runoff Control  
Inspections**

**06/05/2014**

**Eco-CITY  ALEXANDRIA**

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## **Purpose**

The purpose of this document is to provide policies and procedures for the inspection of construction sites for stormwater runoff control.

Construction sites will be inspected for compliance with erosion and sedimentation control and for compliance with the site's VSMP permit as applicable.

## **Legal Authority**

### **Commonwealth of Virginia**

Legal Authority to enforce stormwater runoff controls on construction sites is granted to the City by the Code of Virginia. Specifically, authority is granted by the Stormwater Management Act, Title 62.1, Chapter 3.1, Article 2.3 of the Code of Virginia; the Virginia Stormwater Management Program (VSMP) Regulation, Chapter 870 of the Virginia Administrative Code; and by chapter 880 the General VPDES Permit for Discharges of Stormwater From Construction Activities, Chapter 880 of the Virginia Administrative Code.

### **City of Alexandria**

The City of Alexandria Erosion and Sedimentation Control Ordinance is located in Title 5 Chapter 4 of the Alexandria, Virginia code of Ordinances.

The Environmental Management Ordinance, Article XIII of the City of Alexandria Zoning Ordinance contains those provisions of the City Code related to the VSMP permit.

## City Procedures for Erosion and Sedimentation Control Inspections

### Inspection Schedule

All permitted projects will be inspected as follows:

- A. During or immediately following initial installation of erosion and sediment controls;
- B. At least once in every two week period;
- C. Within 48 hours following any runoff producing storm event; and
- D. At the completion of the project prior to the release of any performance bonds.

### Inspection Procedure

City inspections will be performed according to the following procedures:

1. Inspections will be performed to inspect for compliance with the approved erosion and sedimentation control plan. City staff will attempt to inform the construction site operator and/or permittee prior to the inspection.
2. Inspections will be documented on the inspection forms found in appendix 1 of this document.
3. After the inspection has been completed, a hard copy of the documentation will be saved in the inspector's files. Any pictures taken will be saved on the hard drive of the inspector's computer.
4. When a site fails an inspection, the information will be entered into the City's database generating a report for the permittee.
5. For those sites failing inspection, a notice to comply and a copy of the inspection report will be sent to the permittee. This notice can be hand delivered or sent to the permittee by certified mail. The notice to comply will specify the measures needed to bring the site into compliance with the approved erosion and sedimentation control plan and the timeframe allowed for compliance. The notice to comply can be found in Appendix 1 of this document.
6. The time allowed for compliance will be determined by the inspector and will be based on the severity of the violation. No timeframe to comply will exceed 30 days.
7. After the timeframe to complete the required measures has expired, the City inspector will reinspect the site for compliance with the notice to comply.
8. All enforcement action notification will follow the procedures outlined in this document.

### Documentation

The inspection records shall include at a minimum:

1. The date of inspection,
2. The result of the inspection,
3. Any deficiencies,
4. The timeframe allowed for compliance with any noted deficiencies.

All records must be kept on file for a minimum of five years.

## Enforcement of Erosion and Sedimentation Control Violations

In cases where noncompliance is causing or is imminent danger of causing harmful erosion of lands or sediment deposition in the waters of the commonwealth, drainage system discharging to such waters, or lower lying property or where land disturbing activities have commenced without an approved plan, a stop work order may be issued whether or not the permittee has been issued a notice to comply.

For all other violations, enforcement action for failure to comply with an approved erosion and sedimentation control plan or for performing land disturbing activities without an approved plan will follow these steps:

1. After a notice to comply has been issued, the inspector will reinspect the site for compliance with the notice to comply.
2. If the site fails to meet all of the measures outlined in the notice to comply, the inspector may issue a written stop work order.
3. The permittee will be given a timeframe to complete the measures needed to bring the site into compliance with the notice to comply and the approved sedimentation and erosion control plan. The timeframe allowed will be determined by the inspector and will be based upon the severity of the violation.
4. During the time period the stop work order is active, no construction or other work on the site can take place other than corrective measures.
5. Once the time allowed to bring the site into compliance has expired, the site may be referred to the Director of Transportation and Environmental Services, his or her designee; the City Attorney's Office; or both.
6. The City may then execute a letter of intent to use the performance security for site correction and/or refer the project to the City Attorney's Office to issue a Notice of Violation with associated civil penalties. A letter of intent can be found in appendix 2 of this document. A notice of violation can be found in appendix 3 of this document.
  - a. Letter of Intent. If referred to the Director of Transportation and Environmental Services, the director will send the permittee a letter of intent to utilize the performance bond or cash escrow to apply the corrective measures to the site. The letter will specify a timeframe for compliance. If no action is taken in the time specified, the Director shall have the deficiencies corrected charge to and pay for all related expenses from the performance bond or escrow account. If the cost of correction exceeds the amount of the held security, the Director may collect the difference from the permittee.
  - b. Penalties for noncompliance. Any person who violates these regulations shall be subject to a civil penalty. Each day the violation continues shall constitute a separate offense.
    - i. First time offenders shall be subject to a civil penalty not to exceed five hundred dollars (\$500.00) per day of continuing violation.
    - ii. Each subsequent violation for the same section or provision shall be subject to a civil penalty not to exceed one thousand dollars (\$1000.00) per day of continuing violation.

- iii. No civil penalty arising from the same operative set of facts shall give rise to levying of a civil penalty more than once in any 10 day period or exceeding a total of \$3,000.

## City Procedures for VSMP Inspections

### Inspection Schedule

All permitted projects will be inspected as follows:

- A. Periodically, and/or
- B. In response to complaints.

### Inspection Procedure

City inspections will be performed according to the following procedures:

1. Inspections will be performed to inspect for compliance with the approved erosion and sedimentation control plan. City staff will attempt to inform the construction site operator and/or permittee prior to the inspection.
2. Inspections will be documented on the inspection forms found in appendix 1 of this document.
3. After the inspection has been completed, a hard copy of the documentation will be saved in the inspector's files. Any pictures taken will be saved on the hard drive of the inspector's computer.
4. When a site fails an inspection, the information will be entered into the City's database generating a report for the permittee.
5. For those sites failing inspection, a notice to comply and a copy of the inspection report will be sent to the permittee. This notice can be hand delivered or sent to the permittee by certified mail. The notice to comply will specify the measures needed to bring the site into compliance with the approved VSMP permit and the timeframe allowed for compliance.
6. The time allowed for compliance will be determined by the inspector and will be based on the severity of the violation. No timeframe to comply will exceed 30 days.
7. After the timeframe to complete the required measures has expired, the City inspector will reinspect the site for compliance with the notice to comply.
8. All further enforcement action notification will follow the procedures outlined in this document.

### Documentation

The inspection records shall include at a minimum:

1. The date of inspection,
2. The result of the inspection,
3. Any deficiencies,
4. The timeframe allowed for compliance with any noted deficiencies.

All records must be kept on file for a minimum of five years.

## Enforcement VSMP Permit Violations

In cases where noncompliance is grossly affecting or presents an imminent and substantial danger of causing harmful erosion of lands or sediment deposition in waters within the watersheds of the Commonwealth or otherwise substantially impacting water quality, the Director of T&ES may issue, without advance notice or hearing, an emergency order directing such person to cease immediately all land-disturbing activities on the site.

For all other violations, enforcement action for failure to comply with an approved VSMP permit or for performing land disturbing activities without an approved permit will follow these steps:

1. After a notice to comply has been issued, the inspector will reinspect the site for compliance with the notice to comply.
2. If the site fails to meet all of the measures outlined in the notice to comply, the inspector may issue a written stop work order. A stop work order can be found in appendix 1 of this document.
3. The permittee will be given a timeframe to complete the measures needed to bring the site into compliance with the notice to comply and the approved VSMP Permit. The timeframe allowed will be determined by the inspector and will be based upon the severity of the violation.
4. During the time period the stop work order is active, no construction or other work on the site can take place other than corrective measures.
5. Once the time allowed to bring the site into compliance has expired, a notice of violation may be issued and the site referred to the City Attorney's Office. A notice of violation can be found in appendix 4 of this document.
6. Any violation of the VSMP Permit or failure to operate without a permit is subject to a civil penalty not to exceed \$32,500 per day per violation with each day of violation as a separate offense. The City Attorney's Office will pursue collection of the civil penalty through prosecution in the appropriate court.

## Appendix 1-Inspection Form, Notice to Comply, and Stop Work Order

### Transportation and Environmental Services Infrastructure and Right-of-Way

2900 Business Center Drive  
Alexandria, VA 22314  
Phone: 703-746-4090

## Stormwater Construction Site Inspection Report

Project Name:  Location:  Date: [Click to enter date](#)  
 Inspector's Name:  Weather Conditions:   
 Time Since Last Precipitation:  Precipitation Amount:

### STAGE OF CONSTRUCTION

*Pre-Construction Conference*       *Building Construction*       *Demolition*   
*Clearing & Grubbing*       *Finish Grading*       *Bond Release*   
*Rough Grading*       *Final Stabilization*       *Other* \_\_\_\_\_

**Reason for Inspection:**     Qualifying Rainfall Event       Bi-weekly Inspection       Other

### Enforcement or Follow-up Action / Inspection Result:

Notice to Comply       Stop work Order       Re-inspection       N/A

### Erosion and Sediment Control Measures

Ref. No.	BMP Installed & Operating Properly?			Type of BMP / Activity	Location and Corrective Action Needed	Date to complete corrective action
	Yes	No	N/A			
1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Temporarily or permanently stabilization of exposed areas		
2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Stabilization of stockpiles		
3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Adequate stabilization from vegetative cover		
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Installation and maintenance of perimeter sediment control		
5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Stabilization of earthen structures		
6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Installation of sediment basins and or sediment traps		
7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Stabilization of slopes		

8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Installation of proper controls on new disturbed areas		
9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Adequate catch basin inlet protection		
10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Channel lining/outlet protection for storm water conveyance channels		
11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Measures used to minimize impact for in-stream construction		
12	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Non-erodible material for temporary stream crossings		
13	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Re-stabilization of in-stream construction		
14	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Underground utilities being installed in accordance with applicable standards		
15	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Construction entrance/exit and prevention of offsite tracking		
16	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Dust control to prevent sediment from leaving the site		

Pollution Prevention Measures						
Ref. No.	BMP Implemented and Maintained?			Type of BMP / Activity	Corrective Action Needed	Date to complete corrective action
	Yes	No	N/A			
1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Vehicle and equipment fueling, cleaning, storage, and maintenance areas free of spills, leaks, or any other deleterious material		
2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Covered dumpster for trash and litter		
3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Concrete washout clearly marked and being used		
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sensitive areas (e.g., RPA, streams, mature trees) protected with barriers, flags, or similar		
5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Additional control measures to address a TMDL		
6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Materials with potential to impact stormwater stored under cover		

Stormwater Management Facility								
Ref. No.	SWM Facility Under Construction?			Is Construction Complete?			Type of SWM Facility	Type of work being performed
	Yes	No	N/A	Yes	No	N/A		
1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

Stormwater Pollution Prevention Plan (SWPPP)			
Yes	No	N/A	SWPPP Check
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is the SWPPP onsite?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Does the SWPPP need to be modified?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Has the SWPPP been modified since the last inspection? If so, note the date:

Completion Deadline: [Click to insert date](#)

Verbal / Written Notification given / faxed to:

Please use space below if needed for additional instructions

## Appendix 2-Letter of Intent

DATE

Owner Name

Owner Address

RE: Failure to comply with the approved erosion and sedimentation control plan

**Site**

Certified Mail #

### **LETTER OF INTENT**

Dear **NAME**:

On **DATE**, the above reference site was issued a Notice to Comply from the City of Alexandria Office of Construction and Inspection for failure to comply with the site's approved erosion and sedimentation control plan. A stop work order was issued on **DATE** giving you **X** number of days to bring the site into compliance with the approved plan. As of today, the site remains out of compliance with the approved plan.

**You have **X** days from the date of this letter to either bring the site into compliance or submit in writing a request for an extension. If the site is not brought into compliance or given an approved extension of time by **DATE**, the City will utilize your performance bond or cash escrow to apply the necessary corrective measures to the site. If the cost of correction exceeds the amount of the held security, the City may collect the difference from the permittee. Failure to complete corrective measures may also result in the issuance of a Notice of Violation and associated penalties of up to \$1000 per day per violation.**

Section 5-4 of the City of Alexandria Code of Ordinances requires applicable development to operate under an approved erosion and sedimentation control plan and to remain in compliance with that plan. Specifically, Sec. 5-4-4 of the City Code states:

- a) It shall be unlawful for any person to construct, erect or alter any building or structure for which an approved erosion and sedimentation control plan is required by this chapter, except in accordance with the approved plan.
- b) It shall be unlawful for any person to clear, grade, excavate, fill, remove topsoil from or change the contour of any land in the city for which an approved erosion and sedimentation control plan is required by this chapter except in accordance with the approved plan.
- c) It shall be unlawful for any person to remove or destroy trees, shrubs, grass, weeds, vegetation, ground cover or other plant life on any land in the city for which an approved erosion and

sedimentation control plan is required by this chapter except in accordance with the approved plan.

**The following observations were made during the inspection and require compliance measures:**

- Comments
- 

Your time and cooperation are greatly appreciated and will help to achieve our goal of protecting our streams, rivers and the Chesapeake Bay. Please contact **NAME** in the Office of Transportation and Environmental Services at 703-746-4065, via email at **EMAIL**, or by fax at 703-519-8354 if you have any questions, need additional information, or to submit the above requested information.

Thank you for your time and cooperation with regard to this matter.

Sincerely,

Deputy Director, Transportation and Environmental Services

CC:     , Inspector,  
          , Director, Transportation and Environmental Service  
          , Deputy City Attorney

## Appendix 3-Erosion and Sedimentation Notice of Violation

DATE

Owner Name

Owner Address

RE: Failure to comply with the approved erosion and sedimentation control plan  
Site

### NOTICE OF VIOLATION

Dear NAME:

On DATE, the above reference site was issued a Notice to Comply from the City of Alexandria Office of Construction and Inspection for failure to comply with the site's approved erosion and sedimentation control plan. A stop work order was issued on DATE giving you X number of days to bring the site into compliance with the approved plan. As of today, the site remains out of compliance with the approved plan.

Due to failure to respond to multiple notices by the City and/or to bring the site into compliance with the approved sedimentation and erosion control plan, you are hereby served a **NOTICE OF VIOLATION for violation of the City Code of Alexandria Title 5, Chapter 4-Erosion and Sedimentation Control.**

Section 5-4 of the City of Alexandria Code of Ordinances requires applicable development to operate under an approved erosion and sedimentation control plan and to remain in compliance with that plan. Specifically, Sec. 5-4-4 of the City Code states:

- a) It shall be unlawful for any person to construct, erect or alter any building or structure for which an approved erosion and sedimentation control plan is required by this chapter, except in accordance with the approved plan.
- b) It shall be unlawful for any person to clear, grade, excavate, fill, remove topsoil from or change the contour of any land in the city for which an approved erosion and sedimentation control plan is required by this chapter except in accordance with the approved plan.
- c) It shall be unlawful for any person to remove or destroy trees, shrubs, grass, weeds, vegetation, ground cover or other plant life on any land in the city for which an approved erosion and sedimentation control plan is required by this chapter except in accordance with the approved plan.

**You will be assessed a civil penalty of \$500 per day per violation beginning DATE until the corrective actions below are completed.**

**The following items are required to bring your site into compliance:**

- Comments

This office will pursue collection of the civil penalty through prosecution in the appropriate court. Additionally, the city may perform the necessary corrections and bill the property owner.

Your time and cooperation are greatly appreciated and will help to achieve our goal of protecting our streams, rivers and the Chesapeake Bay. Please contact **NAME** in Transportation and Environmental Services directly at 703-746-4065, via email at [email](#), or by fax at 703-519-8354 if you have any questions about the corrective measures. Please contact me with any questions about the scope and nature of the impending legal proceedings.

Please let me know if you have any questions.

Yours very truly,

Deputy City Attorney

CC: , Inspector  
    , Deputy Director of Transportation and Environmental Services  
    , Director of Transportation and Environmental Services

## Appendix 4-VSMP Notice of Violation

DATE

Owner Name

Owner Address

RE: Failure to comply with the approved erosion and sedimentation control plan  
**Site**

### NOTICE OF VIOLATION

Dear **NAME**:

On **DATE**, the above reference site was issued a Notice to Comply from the City of Alexandria Office of Construction and Inspection for failure to comply with the site's approved VSMP permit. A stop work order was issued on **DATE** giving you **X** number of days to bring the site into compliance with the approved plan. As of today, the site remains out of compliance with the approved plan.

Due to failure to respond to multiple notices by the City and/or to bring the site into compliance with the approved sedimentation and erosion control plan, you are hereby served a **NOTICE OF VIOLATION for violation of the City of Alexandria Zoning Ordinance, Article XIII-Environmental Management.**

Section 13-111 of the Ordinance requires applicable development to operate under an approved VPDES permit, an approved stormwater management plan, an approved erosion and sedimentation control plan and an approved stormwater pollution prevention plan and to remain in compliance with those plans. Specifically, Section 13-126 of the City Code states:

Any person who violates any provision of this article or who fails, neglects, or refuses to comply with any order of the director of T&ES, shall be subject to a civil penalty not to exceed \$32,500.00 for each violation within the discretion of the court. Each day of violation of each requirement shall constitute a separate offense.

(a) Violations for which a penalty may be imposed under this subsection shall include but not be limited to the following:

- i. No state permit registration;
- ii. No SWPPP;
- iii. Incomplete SWPPP;
- iv. SWPPP not available for review;
- v. No approved erosion and sediment control plan;
- vi. Failure to install stormwater BMPs or erosion and sediment controls;
- vii. Stormwater BMPs or erosion and sediment controls improperly installed or maintained;

- viii. Operational deficiencies;
- ix. Failure to conduct required inspections;
- x. Incomplete, improper, or missed inspections; and
- xi. Discharges not in compliance with the requirements of 4FAC50-60-1170 of the general permit.

**You will be assessed a civil penalty of \$500 per day per violation beginning **DATE** until the corrective actions below are completed.**

**The following items are required to bring your site into compliance:**

- Comments

This office will pursue collection of the civil penalty through prosecution in the appropriate court. Additionally, the city may perform the necessary corrections and bill the property owner.

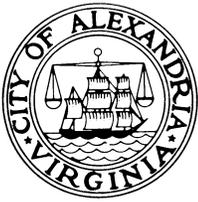
Your time and cooperation are greatly appreciated and will help to achieve our goal of protecting our streams, rivers and the Chesapeake Bay. Please contact **NAME** in Transportation and Environmental Services directly at 703-746-4065, via email at [email](#), or by fax at 703-519-8354 if you have any questions about the corrective measures. Please contact me with any questions about the scope and nature of the impending legal proceedings.

Please let me know if you have any questions.

Yours very truly,

Deputy City Attorney

CC: , Inspector  
, Deputy Director of Transportation and Environmental Services  
, Director of Transportation and Environmental Services



# DEVELOPMENT PRELIMINARY SITE PLAN CHECKLIST

Department of Planning and Zoning, 301 King Street, Room 2100  
Alexandria, Virginia 22314 Phone: (703) 746-4666

DSUP/DSP # \_\_\_\_\_

Project Name (different from project address): \_\_\_\_\_

Project Address: \_\_\_\_\_

Applicant's Name: \_\_\_\_\_

**Submission Deadline:** Plan submissions received before 3:00 pm will be processed and routed to reviewers the same day. Plan submissions received after 3:00 pm will be processed and routed the next business day. **Submit to the Planning and Zoning Office only to avoid processing delays.**

**The following materials are required for a complete development preliminary plan submission:**

\_\_\_\_\_ **Completed and Signed Development Special Use Permit or Development Site Plan Application**

\_\_\_\_\_ **Completed and Signed Preliminary Plan Checklist (this form)**

\_\_\_\_\_ **Filing Fee (DSUP and DSP).** For **DSUP:** \$2275 plus \$12/100 gross square feet of building, max \$60,075; **DSP:** \$2400 plus \$12/100 gross square feet of building, max. \$60,200. Other fees may apply.

\_\_\_\_\_ **Site Plans for Completeness Review of Preliminary Plan (first submission).** For each submission, provide **18** sets (where applicable, at least 1 color set labeled for P&Z) of site plan drawings, folded (if the plan set size is too large to be folded, rolled plans will be accepted). Additional copies may be requested if the application is within a special district.

\_\_\_\_\_ **Site Plans After Completeness Review (second submission).** Submit **24** full sized (folded). Twelve half-sized sets of the preliminary plan will be requested once the proposal is scheduled for a Planning Commission hearing. Additional copies may be requested if the application is within a special district.

\_\_\_\_\_ **Electronic Copy.** For **each submission**, provide a CD with PDF files of the entire site plan and other materials (i.e. Transportation Management Plans, Geological Study, etc.). Please submit as few PDF files as possible with clearly defined file names. (ex. Sheet C1 – C10 or Sheet C1 Title Sheet, Sheet C2 Notes, etc.)

\_\_\_\_\_ **Signature of professional certifying that the submission meets all requirements:**

I, \_\_\_\_\_ (print name), hereby certify that the drawings and other materials that accompany this checklist have met the requirements of the checklist, and the accompanying electronic copy is an exact duplicate of the hard copy submission.

Signature \_\_\_\_\_ Date \_\_\_\_\_

General Process Information:

Preliminary site plans will be reviewed for completeness by City staff. Comments will be returned to the applicant in approximately 3 weeks from submission listing additional information required for the application to be deemed complete.

The applicant must revise the site plan to address all comments of the completeness review and resubmit to Planning and Zoning. This submission must include 24 full-sized folded copies with a letter responding to each of the completeness comments and the specific location of the additions or corrections made to the plan. These plans are routed and reviewed again for completeness. **If they are still not complete the review of them will be suspended and the applicant will be notified of the information that is required.**

When the application is deemed complete, a confirmation letter or e-mail will be sent to the applicant. Within 5 working days of receipt of the confirmation the applicant shall install a notice of the proposed development at the site. When an application is complete, it will receive technical review by City agencies. Three weeks prior to the scheduled hearing date the applicant shall submit a sample materials board and/or color rendering.

**FORMAT REQUIREMENTS FOR EACH SHEET:**

- \_\_\_\_\_ Print size of 24" x 36"
- \_\_\_\_\_ Scale of no less than 1" : 40' with scale identified on each sheet – 1" : 20 or 1" : 30 preferred **Note: 1":25 is not an acceptable scale**
- \_\_\_\_\_ City approval signature block in same place (lower right corner) on each sheet (see attachment for configuration and size of block)
- \_\_\_\_\_ North point shown consistently in the same direction on all plan sheets with reference to source of meridian. North arrow pointing down is not acceptable
- \_\_\_\_\_ Property lines with course and distance for each
- \_\_\_\_\_ Name, address, signature and registration number of professional(s) preparing the plan on each sheet – all plans to be sealed by the appropriate professional
- \_\_\_\_\_ Legend of symbols, patterns, and abbreviations used
- \_\_\_\_\_ Date the plan was prepared/last revised

**COVER SHEET:**

- \_\_\_\_\_ Name and address of the developer and of the owner(s) of record
- \_\_\_\_\_ A narrative description of the project
- \_\_\_\_\_ Location map with the site shown in relation to the nearest intersection of two or more streets
- \_\_\_\_\_ Sheet Index
- \_\_\_\_\_ Key to plan sheets if more than one sheet is needed to show the whole site
- \_\_\_\_\_ Total area included in the site plan, total area of tax parcel, total existing and proposed impervious area on the tax parcel, and total area that will be disturbed during construction (all expressed in square feet and acres)
- \_\_\_\_\_ A list of all special use permits, site plan approvals and zoning modifications or waivers being requested
- \_\_\_\_\_ A list of all existing special use permits, site plans and proffers that apply to all or part of the site
- \_\_\_\_\_ Building Code analysis

**ZONING TABULATIONS (May be included on cover where sufficient space exists)-** *For each element, list zoning ordinance requirement and number proposed on preliminary plan:*

**\*Note: If the proposed development includes multiple lots, the zoning tabulation information must be provided for each individual lot unless all the lots will be consolidated in conjunction with the proposal.**

- \_\_\_\_\_ Zoning of the site (zoning proffers, if applicable)
- \_\_\_\_\_ Existing uses on the site
- \_\_\_\_\_ Proposed uses on the site
- \_\_\_\_\_ Lot area minimum required by zone district
- \_\_\_\_\_ Lot area (required and proposed)
- \_\_\_\_\_ Number of dwelling units (list by number of bedrooms for multifamily)
- \_\_\_\_\_ Units per acre for residential
- \_\_\_\_\_ Gross square feet (GSF) of building area\*, total and listed by use, (with area devoted to parking included and listed separately)
- \_\_\_\_\_ Net square feet (NSF) or Floor Area, total and listed by use
- \_\_\_\_\_ Floor-area-ratios existing and proposed
- \_\_\_\_\_ Open space (required and proposed)
- \_\_\_\_\_ Open space total proposed and broken down by ground level space and usable space proposed.
- \_\_\_\_\_ Average finish grade for each building
- \_\_\_\_\_ Height of each building above average finish grade
- \_\_\_\_\_ Building setbacks (required and proposed) for each building

- \_\_\_\_\_ Frontage with required and proposed listed separately
- \_\_\_\_\_ Parking spaces (listed by compact, standard, handicapped size and total) required and proposed
- \_\_\_\_\_ Parking spaces (listed by location of parking i.e. above grade and/or below grade)
- \_\_\_\_\_ Loading spaces (required and proposed)
- \_\_\_\_\_ Existing and proposed trip generation

**\*Note: The gross square footage of a building or buildings on a lot or tract of land (whether “main” or “accessory”) is the sum of all gross horizontal areas under a roof or roofs. These areas shall be measured from the exterior faces of walls and from eaves of all roofs where they extend beyond the wall line, or from the center line of party walls.**

**The net square footage OR Floor Area of a building or buildings on a lot or tract of land (whether “main” or “accessory”) is the sum of all gross horizontal areas under a roof or roofs. These areas shall be measured from the exterior faces of walls and from the eaves of all roofs where they extend beyond the wall line or from the centerline of party walls and shall include all space with headroom of seven feet six inches or more, whether or not provided with a finished floor or ceiling. Excluded shall be elevator and stair bulkheads, accessory water tanks, cooling towers and similar construction not susceptible to storage or occupancy. Basements and subbasements shall be excluded from the floor area ratio computations, but for the purpose of computing off street parking requirements that portion of such areas as are occupied by permitted uses shall be subject to the provisions of Article VIII. (special restrictions apply in Eisenhower East and Landmark – Van Dorn)**

**CONTEXTUAL PLAN:**

- \_\_\_\_\_ Show the proposed project site(s) and adjacent areas affected by the project
  - \_\_\_\_\_ Proposed project site appropriately labeled
  - \_\_\_\_\_ Display a minimum of a quarter (1/4) mile in radius of proposed project
  - \_\_\_\_\_ Existing property lines, buildings, streets, metro, transit stops and routes, and major thoroughfares, if any, appropriately labeled

**MAP OF EXISTING SITE CONDITIONS - *Show location, dimensions, size, height, and elevations of:***

- \_\_\_\_\_ Sidewalks, streets and their names (show full width, curblines and centerlines), alleys, existing easements (include emergency vehicle easements), covenants and reservations
- \_\_\_\_\_ Show the full right-of-way width of all adjoining streets and include all information for both sides
- \_\_\_\_\_ Roadway and lane widths and uses (right turn, left turn, etc.)
- \_\_\_\_\_ Traffic and pedestrian controls including signs, markings and signals
- \_\_\_\_\_ Existing transit/bus stops with route number identification adjacent to the property
- \_\_\_\_\_ On-street parking locations and individual spaces when designated
- \_\_\_\_\_ Driveways, entrances, exits, parking areas; show vehicle parking spaces by type (standard, compact and accessible) and indicate the number in each bay and total count. Dimensions shall exclude any obstructions such as columns or light poles
- \_\_\_\_\_ Building setbacks, highway setback lines and zone transition lines
- \_\_\_\_\_ Existing buildings and structures; show footprint and indicate height
- \_\_\_\_\_ Property lines, including adjoining property lines; show course and distance of each site boundary line
- \_\_\_\_\_ For adjoining properties, show current zoning and names and addresses of owners (show zoning district boundary lines if multiple districts exist on the site or adjacent parcels)
- \_\_\_\_\_ Transformers, valves, and other surface features of utility systems
- \_\_\_\_\_ Storm and sanitary sewer systems, water mains, and other buried utilities; indicate size

- \_\_\_\_\_ of lines and direction of flow for storm and sanitary lines; identify owner of each system
- \_\_\_\_\_ Fire hydrants and fire department connections
  
- \_\_\_\_\_ Major trees (6" or more in caliper) and shrubs (3' or more in height), located and identified by species, including street trees on public right-of-ways along property frontage. Also, locate and identify trees on adjacent properties with canopies that extend over the site. Identify species, size and locations of trees on opposite sides of fronting streets.
- \_\_\_\_\_ Recreation areas, swimming pools and bike and walking trails on abutting streets or public access easements
- \_\_\_\_\_ Watercourses, bodies of water, wetlands and limits of flood plains
- \_\_\_\_\_ Resource Protection Areas as defined in Article XIII of the Zoning Ordinance
- \_\_\_\_\_ Lighting on public rights-of-way adjacent to the site
- \_\_\_\_\_ Significant site features
- \_\_\_\_\_ Topography shown with 2' contours on the subject property and on adjacent parcels for sufficient distance to indicate the relationship of the site to off-site terrain
- \_\_\_\_\_ Slopes, terraces and retaining walls, including elevations of level areas and tops and bottoms of walls and exterior stairways and ramps
- \_\_\_\_\_ Indicate the following on the plan- underground storage tanks; areas located within 1,000 feet of a former sanitary landfill, dump or disposal area; areas with the potential of generating combustible gases.
- \_\_\_\_\_ Location of buildings listed on the Alexandria List of 100-Year Old Buildings that occur on the site or on adjacent parcels
- \_\_\_\_\_ A statement indicating whether or not the Site has areas of Marine Clay
- \_\_\_\_\_ Indicate areas on plan and provide a statement describing any known or expected contamination or brief narrative of due diligence completed (site history) if none is expected

**PRELIMINARY SITE PLAN** - *Include existing features to be retained and show location, dimension, size, height and elevation of proposed:*

- \_\_\_\_\_ Boundaries of zoning districts on the site and adjoining sites
- \_\_\_\_\_ Sidewalks, streets, alleys with widths labeled, and elevations
- \_\_\_\_\_ Show the full width and centerlines of all adjoining streets
- \_\_\_\_\_ Existing and modified lane widths and uses (right turn, left turn, etc.)
- \_\_\_\_\_ Existing and proposed traffic controls including signs, markings and signals
- \_\_\_\_\_ Sidewalks, bike and walking trails on sites and on abutting streets or public property/easements, with widths of each
- \_\_\_\_\_ Bicycle parking spaces provided per City Standards
- \_\_\_\_\_ Bicycle and pedestrian paths per the Transportation Master Plan and 1998 *Bicycle Transportation and Multi-Use Trail Master Plan*, including existing and proposed routes
- \_\_\_\_\_ Direction of traffic and volumes at all site entrances, exits and intersections
- \_\_\_\_\_ Sight distance per AASHTO at all driveways and street intersections
- \_\_\_\_\_ Curb radii at intersections and driveway entrances for public and private streets and alleys, and within parking lots; note AASHTO turning radii
- \_\_\_\_\_ Existing and proposed on-street parking locations and individual spaces when required
- \_\_\_\_\_ Driveways, entrances, exits, parking areas; show parking spaces by type (standard, compact and handicap) and indicate the number in each bay and the total count
- \_\_\_\_\_ Locations of underground parking and indicate the footprint of related subsurface structures
- \_\_\_\_\_ Garage layouts with columns shown and drive aisle and parking spaces dimensioned. Parking space widths and lengths do not include the column width. The use of "typical" may be used provided it dimensions all types of spaces/aisles and is used in enough places that the review can be performed accurately.

- \_\_\_\_\_ Vehicle turning movements for any parking lot or garage, entrances and drive aisles, accessible spaces with AASHTO standard vehicle
- \_\_\_\_\_ Vehicle turning movements for loading zones with the largest vehicle that will access the site
- \_\_\_\_\_ Slope of entrance ramp
- \_\_\_\_\_ Locations of building entrances and exits
- \_\_\_\_\_ Building setbacks, highway setback lines, zone transition lines and vision clearances
- \_\_\_\_\_ Provide sections demonstrating compliance with the Section 6-403
- \_\_\_\_\_ Show any transition zone setback, if applicable
- \_\_\_\_\_ Easements, covenants and reservations including emergency vehicle easements (EVE) (existing and proposed)
- \_\_\_\_\_ Property lines; show course and distance of each site boundary line
- \_\_\_\_\_ Yard dimensions for setback requirements
- \_\_\_\_\_ Buildings and structures, including optional decks and other projections such as canopies, bay projections, roof overhangs; or maximum building envelope (where approved as envelope) showing outside dimensions, including height, and first floor elevations
- \_\_\_\_\_ Stoops, steps and staircases (with elevations)
- \_\_\_\_\_ Distances between buildings and adjoining property lines
- \_\_\_\_\_ Storage space for solid waste and recyclable material containers with trash truck turning movements and pick up locations
- \_\_\_\_\_ Storm and sanitary sewer systems, including lateral lines, water mains and service lines, with size, direction of flow and owners indicated in plan view for both existing and proposed
- \_\_\_\_\_ Gas mains and service lines; with size of line and owner of line indicated
- \_\_\_\_\_ Fire hydrants, water mains and service lines; with size of line and owner of line indicated
- \_\_\_\_\_ Electric, telephone, cable and all other utilities on the property; identify owners
- \_\_\_\_\_ Transformers, switchboxes, cable boxes, poles, telephone pedestals, and other surface features of utility systems and elevations
- \_\_\_\_\_ Existing and proposed light poles and fixtures on-site and on adjoining rights-of-way
- \_\_\_\_\_ Existing and proposed bus stop(s) and bus stop amenities
- \_\_\_\_\_ Recreation areas, swimming pools. (Discharge from swimming pools shall be shown connected to the sanitary sewer in plan view.)
- \_\_\_\_\_ Watercourses, bodies of water, wetlands and limits of flood plains
- \_\_\_\_\_ Resource Protection Areas as defined in Article XIII of the Zoning Ordinance and developable area
- \_\_\_\_\_ Significant site features
- \_\_\_\_\_ Limits of Disturbance
- \_\_\_\_\_ Proposed grading shown with 2' contours on the subject property and on adjacent parcels for sufficient distance to indicate the relationship of the site to off-site terrain
- \_\_\_\_\_ Slopes, terraces and retaining walls, including elevations of level areas and tops and bottoms of walls and exterior stairways and ramps

**LANDSCAPE PLAN** - *(Proposed landscape plan must comply with the " City of Alexandria Landscape Guidelines, 2007" published by the Department of Recreation, Parks and Cultural Activities, City of Alexandria)*  
[http://alexandriava.gov/uploadedFiles/recreation/info/040907\\_land\\_guidelines.pdf](http://alexandriava.gov/uploadedFiles/recreation/info/040907_land_guidelines.pdf)

- \_\_\_\_\_ Buildings, and other structures and all building entrances
- \_\_\_\_\_ Streets, driveways, sidewalks, trails, intersections and all paved areas
- \_\_\_\_\_ Utilities and utility easements, existing and proposed
- \_\_\_\_\_ Locations of off-site and on-site lighting, including street lighting
- \_\_\_\_\_ Existing vegetation to be removed; include locations, size and species of all trees 6" or greater in caliper
- \_\_\_\_\_ Street trees and natural vegetation to be retained; include locations, approximate

- \_\_\_\_\_ driplines, size and species of all trees 6" or greater in caliper
- \_\_\_\_\_ Details of protection structures to be used for existing trees to be preserved
- \_\_\_\_\_ Proposed street tree species, locations, and planting details
- \_\_\_\_\_ Indicate the distances between street trees
  
- \_\_\_\_\_ Location and dimensions of areas to be landscaped (including within public right-of-ways), specifying the location, names, caliper, and size of proposed individual trees, shrubs, and ground cover plants (indicate initial and final height for trees and shrubs, initial width for shrubs, and initial spread for groundcover plants)
- \_\_\_\_\_ Tabulation of required, existing and proposed crown coverage (**Do not include street trees.**)
- \_\_\_\_\_ Show existing and proposed trails, roadways and sidewalks
- \_\_\_\_\_ Plans shall be sealed by a Certified/Registered Landscape Architect.

**OPEN SPACE PLAN:**

- \_\_\_\_\_ Open space areas graphically showing the square footage and type (ground level or rooftop)

**LIGHTING PLAN/SIGNAGE PLAN:**

- \_\_\_\_\_ Building and structures
- \_\_\_\_\_ Location of all existing and proposed lights, including street lights and building lights.
- \_\_\_\_\_ Type of fixture
- \_\_\_\_\_ Show the locations and height of proposed signs and provide information needed to assess compliance with the sign ordinance and applicable special guidelines.

**GIS - DIMENSION PLAN -** *Include existing features to be retained and show location, dimension, size, height and elevation of:*

- \_\_\_\_\_ Sidewalks, streets, alleys, driveways and parking lots; (edge of pavement or top of curb)
- \_\_\_\_\_ Show the full right-of-way width and centerlines of all adjoining streets
- \_\_\_\_\_ Buildings and structures, showing outside dimensions, including height
- \_\_\_\_\_ Property lines
- \_\_\_\_\_ Stoops, steps and staircases
- \_\_\_\_\_ Locations of building entrances; identification of primary building entrance, secondary entrances and any mock entrances if applicable
- \_\_\_\_\_ 3 x y coordinate pairs in state plane coordinates (NAD 83) conforming to 50 scale (1:600/1"=50') National Map Accuracy Standards.

**\*Note: The Dimension Plan is used to update the City of Alexandria's Geographic Information System and therefore should contain only the information specified above. Additionally, Alexandria GIS does not meet the threshold for accuracy, as listed for the coordinate data above and is therefore not suitable as source for obtaining this coordinate information.**

**ELEVATIONS AND SECTIONS:**

- \_\_\_\_\_ Scaled architectural elevations of each building face, with materials labeled
- \_\_\_\_\_ Scaled elevations showing landscaping plan or screening treatment along public rights-of-way
- \_\_\_\_\_ Scaled sections through buildings
- \_\_\_\_\_ Scaled sections showing grade changes in relationship to buildings and/or retaining walls
- \_\_\_\_\_ Scaled sections showing average finished grade line and scaled heights, including penthouses
- \_\_\_\_\_ A detailed graphic showing floor area analysis indicating areas that have been deducted for purposes of the FAR calculation. If the FAR deductions exceed 20% of the overall building's square footage, written justification shall be submitted.

\_\_\_\_\_ Scaled floor plans

**ENVIRONMENTAL QUALITY AND QUANTITY PLAN** - Plans for collecting and depositing stormwater, including approximate pipe sizes, structures and BMPs:

- \_\_\_\_\_ Pre- and post-development, 2 and 10 year stormwater computations
- \_\_\_\_\_ Drainage area map delineating area contributing stormwater onto the project
- \_\_\_\_\_ Narrative describing how the project will comply with the stormwater quantity and quality requirement of Article XIII of the Zoning Ordinance
- \_\_\_\_\_ Water quality worksheet A or B and Worksheet C
- \_\_\_\_\_ Drainage area map with scale and north arrow indicating the area draining to the selected water quality BMPs
- \_\_\_\_\_ City standard water quality BMP data blocks (2)
- \_\_\_\_\_ Preliminary calculations of sanitary flow generated from the site
- \_\_\_\_\_ Narrative describing how the project will comply with the requirements of Memo to Industry 02-07 titled *New Sanitary Sewer Connection and Adequate Outfall Analysis*

**When subdivision of land is involved, include a PRELIMINARY SUBDIVISION PLAT** - (Refer to Section 11-1700 of the Alexandria Zoning Ordinance for additional requirements.)

- \_\_\_\_\_ Plat size shall not exceed 24" x 36"
- \_\_\_\_\_ Scale no less than 100' to 1"
- \_\_\_\_\_ Subdivision name
- \_\_\_\_\_ Name, address of owner of record and the applicant
- \_\_\_\_\_ Name, address, certificate number and seal of the surveyor or engineer
- \_\_\_\_\_ Gross area in acres and total number of buildings, lots or sites involved
- \_\_\_\_\_ Date, scale and north point with reference to source of meridian
- \_\_\_\_\_ Zoning of the property
- \_\_\_\_\_ A form or space, not less than two and one-quarter by three and one-half inches, on which approval by the commission may be shown
- \_\_\_\_\_ Lot lines with the dimensions of the length and width of the lots
- \_\_\_\_\_ In the case of resubdivisions, all lot lines or lot numbers that are proposed to go out of existence by reason of the resubdivision shall be shown by dotted lines and numbers
- \_\_\_\_\_ Location of the property immediately adjoining the proposed subdivision and the names and addresses of all its owners
- \_\_\_\_\_ Location and width of all proposed streets, alleys and public areas and their dimensions
- \_\_\_\_\_ Points of connection with the city sewer system
- \_\_\_\_\_ Location of all easements, reservations, and highway setbacks, as established by section 7-1006 of the zoning ordinance
- \_\_\_\_\_ The width and name of adjacent existing streets, alleys, easements, public utilities, and railroads shown graphically
- \_\_\_\_\_ Limits of floodplains and resource protection areas
- \_\_\_\_\_ The location of metal monuments not less than one inch in diameter and 24 inches in length shown thus: O, and located in the ground at each intersection of streets and alleys with plat boundary lines, and at all points on street, alley, and boundary lines where there is a corner, change in direction, or curvature.
- \_\_\_\_\_ Any deed restrictions shall be recorded with this plat, if applicable.
- \_\_\_\_\_ A surveyor's or engineer's seal and certificate of survey in the following form, which may be modified to accommodate title information:

"I hereby certify that I have carefully surveyed the property delineated by this plat, and that it is correct to the best of my knowledge and belief; that this is a subdivision of part (or all) of the land conveyed by

\_\_\_\_\_ to \_\_\_\_\_ by deed dated \_\_\_\_\_ and recorded among the land records of \_\_\_\_\_ in Deed Book \_\_\_\_\_ at page \_\_\_\_\_ and is within those boundaries; and that all required monuments have been installed where indicated; except those that will be installed at a later date but before completion of the project.

“Certified Surveyor or Engineer”

\_\_\_\_\_ A curve table shall be placed on the final plat containing the following for all curvilinear boundaries and street centerlines; delta, radius, arc, tangent, chord and chord bearing. All distances shall be shown to the nearest one-hundredth of a foot; angles or bearings to the nearest ten seconds.

### ADDITIONAL STUDIES – IF REQUIRED

#### WATER QUALITY ASSESSMENT (in case of RPA encroachment)

\_\_\_\_\_ See Article XIII of the Zoning Ordinance for specific requirements

#### ARCHAEOLOGICAL ASSESSMENT

- \_\_\_\_\_ Documentary Study and initial Archaeological Evaluation completed and submitted by Alexandria Archaeology
- \_\_\_\_\_ Appropriate archaeology comments on all site plan sheets involving ground disturbance
- \_\_\_\_\_ Locations and themes for historical interpretive elements and markers on plan, if applicable.

#### BUILDING MASSING STUDY

\_\_\_\_\_ A physical model showing the mass and scale of the proposed buildings relative to surrounding buildings. This should be a scaled three-dimensional representation of the proposed building mass (including building articulation) in the context of surrounding buildings. Digital models and/or photomontage may be substituted for physical models if deemed acceptable by the Director of Planning & Zoning.

#### TRANSPORTATION IMPACT STUDY

\_\_\_\_\_ Submit all Transportation Studies or Memo.

#### AFFORDABLE HOUSING PLAN

\_\_\_\_\_ A statement of intended voluntary contribution to the City’s Housing Trust Fund or, in the case of a residential project, a voluntary Affordable Housing plan that specifies the number of affordable on-site units, by unit type, or a statement explaining why the developer is unable to include the on-site units, along with the developer’s proposed voluntary contribution to the Housing Trust Fund

\_\_\_\_\_ It is the City's policy that a voluntary contribution for affordable housing be made on all new development. The payment should be paid to the City prior to issuance of certificate of occupancy in the case of commercial development or rental housing, and paid at sale to end user in the case of for-sale housing. In lieu of this contribution, a developer may submit an Affordable Housing Plan to the Office of Housing proposing another means of meeting the affordable housing requirement.  
<http://alexandriava.gov/housing/info/default.aspx?id=6628>

#### Design Guidelines/Updated information

Guidelines Link -<http://alexandriava.gov/planning/info/default.aspx?id=14676>

\_\_\_\_\_ If located along Mount Vernon Avenue, information required by the *Mount Vernon*

- \_\_\_\_\_ *Avenue Design Guidelines*, including information necessary to assess compliance with the guidelines.
- \_\_\_\_\_ If located within the Old Town North area, information required by the *Old Town North Design Guidelines*, including information necessary to assess compliance with the guidelines.
- \_\_\_\_\_ If located within the Old and Historic Alexandria District, information required by the *Alexandria Historic District Design Guidelines*.
- \_\_\_\_\_ If located within the Parker Gray Historic District, information required by the *Alexandria Historic District Design Guidelines*.
- \_\_\_\_\_ If involving a site which occupied by a building on the list *Buildings over 100 Years Old Outside the Historic Districts*, information required by the *Alexandria Historic District Design Guidelines*.
- \_\_\_\_\_ If located along Washington Street, information required by the *Washington Street Standards*, the *Washington Street Guidelines*, the *Old Town North Urban Design Guidelines* and the *Alexandria Historic District Design Guidelines*.
- \_\_\_\_\_ If located within the Carlyle CDD, information required by the *Carlyle Design Guidelines* and the *Carlyle Streetscape Design Guidelines*.
- \_\_\_\_\_ If located within the Potomac Yard/Potomac Greens Small Area, information required by the *Potomac Yard Urban Design Guidelines*.
- \_\_\_\_\_ Link to Transportation and Environmental Services – Memos to the Industry Link - <http://alexandriava.gov/tes/info/default.aspx?id=3522>
- \_\_\_\_\_ Four Mile Run Design Guidelines

**ADDITIONAL APPLICATIONS WHICH MAY BE REQUIRED FOR CERTAIN DEVELOPMENT PROPOSALS**

Generally, all applications related to the same development proposal are required to be processed concurrently. There is a separate fee for each of these applications. See current fee schedule. Check those which are submitted with this application.

- \_\_\_\_\_ **Master Plan and/or Rezoning.** Required when the proposal requires different zoning or a change to the City’s Master Plan. See sections 11-800 and 11-900 of the Zoning Ordinance.
- \_\_\_\_\_ **Transportation Management Plan Special Use Permit.** Required for any project containing 50,000 sq.ft. or more of commercial space, 40,000 sq.ft. or more of retail space, 150,000 sq.ft. or more of industrial space or 250 or more residential units. See section 11-700 of the Zoning Ordinance.
- \_\_\_\_\_ **Vacation.** Required when a portion of the public right-of-way is proposed to be acquired and utilized in the development.
- \_\_\_\_\_ **Encroachment.** Required when portions of the building (including stoops, steps, awnings, etc.) or planters, etc. project into the public right-of-way.
- \_\_\_\_\_ **Coordinated Development District (CDD) Concept Plan.** Required on tracts zoned CDD, in order to proceed with development under the CDD zoning. See section 5-600 of the Zoning Ordinance.
- \_\_\_\_\_ SUP for parking reductions and signs
- \_\_\_\_\_ **Board of Architectural Review Approvals.** Required when the project is within one of the City’s two historic districts. See chapter 10 of the Zoning Ordinance. **\*Note this requires separate application and approval process**

Revised:  
 7/26/2013 – RAL  
 12/9/2013 – JXB



# FINAL DEVELOPMENT SPECIAL USE PERMIT (DSUP) AND DEVELOPMENT SITE PLAN (DSP) CHECKLIST

Department of Planning and Zoning  
Development Division, City Hall  
301 King Street, Room 2100  
Alexandria, Virginia 22314  
Phone: (703) 838-4666

Project Name: \_\_\_\_\_

Project Location (Address): \_\_\_\_\_

Tax Map References: \_\_\_\_\_

Applicant Name: \_\_\_\_\_

Applicant Address: \_\_\_\_\_

Applicant E-mail Address: \_\_\_\_\_

### The following materials are required for a complete Final Site Plan (DSUP/DSP) submission:

\_\_\_\_\_ **Completed Final Site Plan Application Form**

\_\_\_\_\_ **Completed and Signed Final Site Plan Checklist**

\_\_\_\_\_ **Filing Fee.** The final site plan fee is \$2,000 plus \$8.00/100 gross square feet of building, maximum \$20,000 (Note: incomplete resubmissions: first free, 2<sup>nd</sup> and subsequent \$1,000) plus final subdivision fee, if applicable.

Payment Rc'd:	_____ / _____ / _____
	date      amt      initials
Payment Verified	_____ / _____ / _____
	date      amt      initials

\_\_\_\_\_ **Completed and signed ESI checklist**

\_\_\_\_\_ **ESI fee for Transportation & Environmental Services Review**, if applicable

Check here to specify non-ESI member, with no ESI review required

\_\_\_\_\_ **Response Letter.** A response letter must be provided with the initial final site plan submission which provides a response to **EACH** recommendation, code requirement, and finding contained in the Preliminary DSP or DSUP staff report, and for subsequent final submissions, which responds to **EACH** staff comment on the prior final review. Responses must include a reference to the plan sheet where change has been made. The Response Letter must also include a detailed description of and justification for any changes made to the plan which are not a result of a specific approval condition or staff comment.

Final DSUP and DSP Checklist:

\_\_\_\_\_ **Final Site Plans.** Eighteen sets of Final Site Plan drawings (rolled) shall be provided. (Lesser numbers may be required after the first submission; check with the Development Team Leader. The last submission will require three sets of prints, one set of mylars, and an electronic file of the site plan in .dxf format.) **NOTE: When second and subsequent final site plans are submitted all sets shall be marked in red where the changes to the plans have been made in response to review comments.**

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**All Final Site Plans and application materials shall be submitted to the Department of Planning and Zoning at the above address. Plans will not be distributed for review to other departments until a complete submission, with all items, is filed. Submission of any materials to departments other than Planning & Zoning may result in a processing delay, as review dates are determined by routing from Planning & Zoning.**

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I certify that I am responsible for the preparation of the final site plans being submitted and that the plans are consistent with all prior approvals granted by the City except as may be called out in the Response Letter accompanying this final site plan submission. I further certify that I have filled out the attached check list and confirmed that all required information has been provided.

---

Signature of Engineer/Architect/Surveyor

---

Date of Submission

Final DSUP and DSP Checklist:

## FINAL SITE PLAN DRAWINGS SUBMISSION FORMAT/REQUIREMENTS:

**Note: The following sheets and information are required for every submission. Additional sheets and information should be provided where necessary to demonstrate compliance with City requirements or conditions of approval.**

### REQUIREMENTS FOR EACH SHEET

- \_\_\_ Print size shall not exceed 24" x 36" and all sheets shall be the same size
- \_\_\_ Scale no less than 40' to 1" (20' or 30' to 1" preferred), with scale identified on each sheet
- \_\_\_ City approval signature block in same place (lower right corner) on each sheet (see attachment for configuration and size of block)
- \_\_\_ Date, scale and north point with reference to source of meridian
- \_\_\_ Name, address, signature and registration number of professional preparing the plan on each sheet
- \_\_\_ Date the plan was prepared on each sheet

### COVER SHEET

- \_\_\_ Name and address of the developer and of the owner(s) of record
- \_\_\_ A narrative description of the proposed development
- \_\_\_ Location map with the site shown in relation to the nearest intersection of two or more streets
- \_\_\_ Index to plan sheets
- \_\_\_ Key to plan sheets if more than one sheet is needed to show the whole site
- \_\_\_ Total area included in the site plan, total area of tax parcel, total existing and proposed impervious area on the tax parcel, and total area that will be disturbed during construction (all expressed in square feet and acres)
- \_\_\_ A list of all special use permits and zoning modifications or waivers **approved** with the preliminary plan
- \_\_\_ Notes
  - \_\_\_ Noise
  - \_\_\_ ESA Statement (amend accordingly)
  - \_\_\_ Wells
  - \_\_\_ Contaminated Lands
  - \_\_\_ E&S
- \_\_\_ Table of all symbols and abbreviations utilized in the plan set.

### ZONING TABULATIONS (May be provided on cover where sufficient space exists)

*For each element, list zoning ordinance requirement, number approved on preliminary plan and number proposed on final plan, if different.*

**\*\*Note:\*\* If the proposed development includes multiple lots, the zoning tabulation information must be provided for each individual lot unless all the lots will be consolidated in conjunction with the proposal.**

- \_\_\_ Zoning of the site
  - \_\_\_ Existing uses on the site
  - \_\_\_ Proposed uses for the site
  - \_\_\_ Lot area (and minimum lot area under zoning, if applicable)
- Final DSUP and DSP Checklist:

- \_\_\_ Number of dwelling units (list by number of bedrooms for multifamily)
- \_\_\_ Units per acre for residential
- \_\_\_ Gross square feet (GSF) of building area\*, total and listed by use (with parking listed separately)
- \_\_\_ Net square feet (NSF) of floor area, total and listed by use
- \_\_\_ Floor-area-ratio (existing if applicable, and proposed listed separately and combined)
- \_\_\_ Open space, with ground level open space listed separately from other open space
- \_\_\_ Average finished grade of each building
- \_\_\_ Height of each building
- \_\_\_ Yards; required and proposed listed separately
- \_\_\_ Frontage; required and proposed listed separately
- \_\_\_ Parking spaces (listed by compact, standard, and handicapped sizes and total)
- \_\_\_ Loading spaces
- \_\_\_ Existing and proposed trip generation

**\*Note: The gross square footage of a building or buildings on a lot or tract of land (whether “main” or “accessory”) is the sum of all gross horizontal areas under a roof or roofs. These areas shall be measured from the exterior faces of walls and from eaves of all roofs where they extend beyond the wall line, or from the center line of party walls. Parking garages, other than garages attached to, or on the same lot with, individual residences and designated for use by a single household, are excluded from the gross square footage calculation.**

### **DSP/DSUP CONDITIONS WITH PLANNING COMMISSION & CITY COUNCIL ACTIONS**

*(Place this information on a separate sheet of the submission following the cover sheet)*

- \_\_\_ Copy of the approved DSUP/DSP conditions, with action, from the staff report for the project
- \_\_\_ Copy of the City Department Comments containing Code Requirements from the staff report.

### **EXISTING CONDITIONS PLAN**

- \_\_\_ Same sheet as required in preliminary site plan (with corrections, if any required by approval)

### **FINAL SITE PLAN**

*Include existing features to be retained and show location, dimension, size, height and elevation of:*

- \_\_\_ Boundaries of zoning districts on the site
- \_\_\_ Sidewalks, streets, alleys with widths labeled, and elevations
- \_\_\_ Show the full right-of-way width and centerlines of all adjoining streets
- \_\_\_ Existing and modified lane widths and uses (right turn, left turn, etc.)
- \_\_\_ Traffic controls including signs, markings and signals on a separate sheet if necessary (see Traffic Signal Plan, below)
- \_\_\_ Maintenance of traffic plan
- \_\_\_ Existing and proposed on-street parking locations and individual spaces when required
- \_\_\_ Direction of traffic and volumes at all site entrances, exits and intersections
- \_\_\_ Sight distance per AASHTO at all driveways and street intersections; horizontal and vertical
- \_\_\_ Easements, covenants and reservations including emergency vehicle easements (EVE)
- \_\_\_ Building restriction lines, highway setback lines, zone transition lines, vision clearances
- \_\_\_ Property lines; show course and distance of each site boundary line
- \_\_\_ Dimensions of front, side and rear yards
- \_\_\_ Buildings and structures, including optional decks and other projections such as canopies, roof overhangs; or maximum building envelope (where approved as envelope) showing outside dimensions, including height, and first floor elevations

Final DSUP and DSP Checklist:

- \_\_\_ Stoops, steps and staircases
- \_\_\_ Locations of building entrances and exits
- \_\_\_ Sump pump and roof drain outfalls
- \_\_\_ Locations of underground parking and the extent of related subsurface structures
- \_\_\_ Dimensions of all on-site parking spaces indicating type (standard, compact or handicapped)
- \_\_\_ Storm and sanitary sewer systems, including lateral lines, water mains and service lines, with size and owner of line indicated; indicate direction of flow; profiles; calculations for storm and sanitary
- \_\_\_ Gas mains and service lines; with size of line and owner of line indicated
- \_\_\_ Fire hydrants, water mains and service lines; with size of line and owner of line indicated
- \_\_\_ Electric, telephone, cable and all other utilities on the property; identify owners
- \_\_\_ Transformers, switchboxes, cable boxes, telephone pedestals, and other surface features of utility systems
- \_\_\_ Light poles and fixtures on-site and on adjoining rights-of-way
- \_\_\_ Driveways, entrances, exits, parking areas; show parking spaces by type (standard, compact and handicap) and indicate the number in each bay and the total count
- \_\_\_ Curb radii at intersections and driveway entrances for public and private streets and alleys, and within parking lots
- \_\_\_ Sidewalks, bike and walking trails on sites and on abutting streets or public property/easements
- \_\_\_ Recreation areas, swimming pools
- \_\_\_ Watercourses, bodies of water, wetlands and limits of flood plains
- \_\_\_ Resource Protection Areas as defined in Article XIII of the Zoning Ordinance
- \_\_\_ Soil boring data and test reports for sites containing marine clay or fill, and when the Director of Transportation and Environmental Services requires
- \_\_\_ Significant geological features
- \_\_\_ Proposed grading shown with 2' contours on the subject property and on adjacent parcels for sufficient distance to indicate the relationship of the site to off-site terrain
- \_\_\_ Slopes, terraces and retaining walls, including elevations of level areas and tops and bottoms of walls and exterior stairways and ramps
- \_\_\_ Indicate elevations at the base of all utility structures other than individual poles, such as fire hydrants and transformers
- \_\_\_ Provide rim elevation and invert elevations of all piping at manholes
- \_\_\_ Elevations of streets and alleys
- \_\_\_ Total area that will be disturbed during construction (expressed in square feet, acres, and delineated accordingly)
- \_\_\_ Roadway alignment data

## **LANDSCAPE PLAN**

*(See "Landscape Guidelines" published by the Department of Planning and Zoning, City of Alexandria.)*

- \_\_\_ Buildings, streets, driveways, paved areas and other structures
- \_\_\_ Utilities and Utility easements
- \_\_\_ Locations of off and on site lighting including street lighting
- \_\_\_ Street trees and natural vegetation to be retained; include locations, size and species.
- \_\_\_ Proposed tree protection locations and details
- \_\_\_ Proposed trees and landscaping, including within public right-of-ways
- \_\_\_ Location and dimensions of areas to be landscaped (including within public right-of-ways), specifying the location, names, species, caliper, and size of proposed individual trees, shrubs, and ground cover plants (indicate initial height for trees and shrubs, initial width for shrubs,

Final DSUP and DSP Checklist:

and initial spread for groundcover plants)

- \_\_\_\_\_ Tabulation of required, existing and proposed crown coverage
- \_\_\_\_\_ Tree and shrub planting details
- \_\_\_\_\_ Landscape planters on underground parking
- \_\_\_\_\_ Total area that will be disturbed during construction (expressed in square feet, acres, and delineated accordingly)
- \_\_\_\_\_ The following notes:
  - \_\_\_\_\_ All materials' specifications shall be in accordance with the industry standard for grading plant material-The American Standard for Nursery Stock (ANSI Z60.1).
  - \_\_\_\_\_ Maintenance of all trees and landscape materials shall conform to accepted industry standards set forth by the Landscape Contractors Association, American Society of Landscape Architects, the International Society of Arboriculture, and the American National Standards Institute.

## **LIGHTING PLAN**

- \_\_\_\_\_ Buildings and structures
- \_\_\_\_\_ Location of all existing and proposed lights, including street lights and building lights.
- \_\_\_\_\_ Type of fixture
- \_\_\_\_\_ Mounting height
- \_\_\_\_\_ Strength of fixture in lumens or watts
- \_\_\_\_\_ Manufacturers' specifications for fixtures
- \_\_\_\_\_ Photometric calculations (point lighting plan) accounting for proposed street trees

## **EROSION AND SEDIMENT CONTROL PLANS**

- \_\_\_\_\_ Erosion and Sediment (E&S) Control Plan Sheets showing:
  - \_\_\_\_\_ Two-phase plan for sediment and erosion control
  - \_\_\_\_\_ Narrative phasing plan including demolition and sequence of construction activities
  - \_\_\_\_\_ All appropriate details of erosion and sediment control measures (must meet Virginia Erosion and Sedimentation Control Handbook (VESCH) standards)
  - \_\_\_\_\_ Sources of water for construction entrance washdown
  - \_\_\_\_\_ Grading for drains and traps for construction entrance runoff
  - \_\_\_\_\_ Phase1 drainage area map indicating existing conditions drainage area, runoff coefficients and peak discharges for 2- and 10-year storms
  - \_\_\_\_\_ Phase 2 drainage area map indicating drainage areas to selected BMPs, runoff coefficients and peak discharges for 2- and 10-year storms
  - \_\_\_\_\_ Show and list appropriate control measures defined for each drainage area
  - \_\_\_\_\_ Total area that will be disturbed during construction (expressed in square feet, acres, and delineated accordingly)
  - \_\_\_\_\_ Identify areas having different ground covering materials (i.e. concrete, asphalt, gravel, turf, crushed stone, etc.)
  - \_\_\_\_\_ Delineate any wetlands or Resource Protection Areas (RPA)
  - \_\_\_\_\_ Legend for line types (must be in accordance with VESCH)
  - \_\_\_\_\_ Grading for sediment traps and basins
  - \_\_\_\_\_ Tabulate drainage area, wet volume, dry volume, and clean-out volume for traps and basins with respective elevations
  - \_\_\_\_\_ Temporary and permanent seeding mixtures
  - \_\_\_\_\_ Erosion and Sediment Control Narrative to include:

Final DSUP and DSP Checklist:

- \_\_\_ Adjacent properties
- \_\_\_ Critical areas
- \_\_\_ Soils description
- \_\_\_ BMP strategies
- \_\_\_ Maintenance practices to be employed
- \_\_\_ Phasing
- \_\_\_ Standard notes
- \_\_\_ Stockpiling procedures
- \_\_\_ Contaminated soils
- \_\_\_ Calculations for:
  - \_\_\_ Traps
  - \_\_\_ Basins
  - \_\_\_ Dewatering structures
  - \_\_\_ Culvert protection
  - \_\_\_ Culvert sizing
- \_\_\_ Block for Certified Responsible Land Disturber
- \_\_\_ References to any needed VPDES permit and indication that a copy will be filed with the City
- \_\_\_ References to any needed POTW permit and indication that a copy will be filed with the City
- \_\_\_ Geotechnical information

### **STORMWATER MANAGEMENT/BMP SHEETS**

*(See Article XIII of the Zoning Ordinance for guidance on water quality calculations)*

- \_\_\_ Water Quality Impact Assessment
  - \_\_\_ Location and description of RPA components
  - \_\_\_ Location and nature of RPA encroachment
  - \_\_\_ Type and location of proposed BMP, with supporting calculations
- In addition, where a MAJOR assessment is required:
  - \_\_\_ Hydrogeological element
  - \_\_\_ Landscape plan supplement
  - \_\_\_ Ecological impact analysis
- \_\_\_ Stormwater Management Sheets
  - \_\_\_ Outfalls located and determined to be adequate for proposed discharge
  - \_\_\_ Pre and post development calculations
  - \_\_\_ Drainage divides off-site identified and delineated
  - \_\_\_ Drainage divides on-site identified and delineated
  - \_\_\_ Show flow routing to detention
  - \_\_\_ Calculate HGL and depict on profiles showing 2 feet of freeboard
  - \_\_\_ Computation and display of inlet flow
  - \_\_\_ Show full flow calculations
  - \_\_\_ Demonstrate that velocities are no less than 2 FPS and no more than 20 FPS
  - \_\_\_ Use N-values  $>36"=0.015$  &  $\leq 36" 0.013$
  - \_\_\_ Show erosive velocity at outfalls
  - \_\_\_ BMP Sheets
  - \_\_\_ Water Quality Volume (WQV) computation (in cubic feet and acre-feet)
  - \_\_\_ Drainage area map with scale and north arrow indicating the area draining to the

Final DSUP and DSP Checklist:

- \_\_\_\_\_ selected water quality BMPs
- \_\_\_\_\_ Water Quality Worksheets A or B and C
- \_\_\_\_\_ City standard water quality BMP data blocks (2)
- \_\_\_\_\_ BMP detail including WQV default elevation
- \_\_\_\_\_ Surface appurtenance casting detail
- \_\_\_\_\_ Signage detail for surface BMP
- \_\_\_\_\_ Standard BMP notes
- \_\_\_\_\_ Waiver approval letters

### **SIGNING AND MARKING PLANS**

- \_\_\_\_\_ Street layout, including curb lines or edge of pavement, sidewalks, handicap ramp locations
- \_\_\_\_\_ Existing pavement markings, noting markings to be eradicated
- \_\_\_\_\_ Proposed new pavement markings, including pattern, width and color
- \_\_\_\_\_ Dimensions of proposed lane widths, and parking lanes and spaces
- \_\_\_\_\_ Pavement marking materials specifications, including type and thickness
- \_\_\_\_\_ Existing signs to be retained, removed or relocated
- \_\_\_\_\_ Proposed new traffic signs, including locations, MUTCD sign codes where applicable, and special legends
- \_\_\_\_\_ Sign schedule including sign code, size, legend, sheeting and sign blank specifications, special installation requirements

### **TRAFFIC SIGNAL PLAN**

- \_\_\_\_\_ Intersection layout showing poles, mast arms, signal head, detector and controller locations and specifications
- \_\_\_\_\_ Intersection lane use and markings
- \_\_\_\_\_ Vehicular and pedestrian signal head configurations
- \_\_\_\_\_ Signal phasing and sequence charts and initial timing plans
- \_\_\_\_\_ Location of power connection
- \_\_\_\_\_ Cable and conduit layout, sizes and specifications
- \_\_\_\_\_ Wiring size and specifications
- \_\_\_\_\_ Interconnect details
- \_\_\_\_\_ Specifications for poles, mast arms and pole foundations; pole foundation designs sealed by registered engineer

### **FIRE SAFETY PLAN**

*(See 'Water and Fire Requirements For Site Plans and New Construction' prepared and published by the City of Alexandria Fire/EMS Department.)*

- \_\_\_\_\_ Building foot prints, driveways, parking areas.
- \_\_\_\_\_ Building entrances and exits
- \_\_\_\_\_ Use group classification and type of construction (defined by USBC).
- \_\_\_\_\_ Existing and proposed water main location and size
- \_\_\_\_\_ Existing and proposed fire hydrant locations
- \_\_\_\_\_ Available water pressure and flow capability, static pressure, residual pressure, flow in GPM
- \_\_\_\_\_ Fire flow calculations in accordance with city standards that are prepared by a licensed engineer that determine the required fire flow for the project. Verification that the existing and/or proposed infrastructure is capable of providing the required fire flow shall be provided..
- \_\_\_\_\_ Type of fire suppression or detection system to be provided (e.g. sprinklers, standpipes, smoke

Final DSUP and DSP Checklist:

or heat detectors).

- \_\_\_ Location and size of underground fire lines
- \_\_\_ Location of fire department siamese connection (typically, street front of building)
- \_\_\_ Height of building in feet and stories
- \_\_\_ Identification of fire walls, tenant separations, etc.
- \_\_\_ Topographical map relating grade and elevation to fire department connections.
- \_\_\_ Location of all Emergency Vehicle Easements and of EVE signs outlining the EVE
- \_\_\_ Emergency vehicle turnaround space for drive aisles in excess of 100 feet.
- \_\_\_ Fire ladder truck access to the front and rear of all buildings in excess of 50 feet in height.

## **DIMENSION PLAN**

*(The Dimension Plan is to be submitted with the first and second submission as a separate sheet. A paper copy of the dimension plan is to be submitted at the time of the mylar submission.)*

*Include existing features to be retained and show location, dimension, size, height and elevation of:*

- \_\_\_ Sidewalks, streets, alleys, driveways and parking lots; (edge of pavement or top of curb)
- \_\_\_ Show the full right-of-way width and centerlines of all adjoining streets
- \_\_\_ Buildings and structures, showing outside dimensions, including height
- \_\_\_ Property lines
- \_\_\_ Stoops, steps and staircases
- \_\_\_ Locations of building entrances; identification of primary building entrance if applicable
- \_\_\_ 3 x,y coordinate pairs in state plane coordinates (NAD 83) conforming to 50 scale (1:600/1"=50') National Map Accuracy Standards.
- \_\_\_ Fire Hydrants

Note: The Dimension Plan is used to update the City of Alexandria's Geographic Information System and therefore should contain only the information specified above. Additionally, Alexandria GIS does not meet the threshold for accuracy, as listed for the coordinate data above and is therefore not suitable as source for obtaining this coordinate information.

## **DETAILS**

*(Details may be incorporated into relevant sheets if sufficient space is available.)*

- \_\_\_ Fences and walls, retaining walls
- \_\_\_ Street typical sections
- \_\_\_ Pavement sections
- \_\_\_ Curbs
- \_\_\_ Driveway aprons
- \_\_\_ Handicap ramps
- \_\_\_ Location and dimension of all handicapped parking spaces
- \_\_\_ Sidewalks and plaza sections/details
- \_\_\_ Signs
- \_\_\_ Trash receptacles
- \_\_\_ Two benchmarks

Final DSUP and DSP Checklist:

**THE FOLLOWING SHEETS ARE NOT REQUIRED TO BE PROVIDED IN EVERY SET.  
INSTEAD, 3 COPIES OF EACH SHEET MAY BE PROVIDED SEPARATELY.**

---

**OPEN SPACE EXHIBIT**

*(The purpose of this sheet is to demonstrate to staff which areas were counted toward open space.)*

- \_\_\_\_\_ parcels
- \_\_\_\_\_ streets, alleys, driveways, all other areas of paving
- \_\_\_\_\_ buildings and entrances
- \_\_\_\_\_ areas counted as open space, shaded and dimensioned with areas counted as usable open space identified
- \_\_\_\_\_ tabulations of areas counted as open space and usable open space

**ARCHITECTURAL ELEVATIONS**

- \_\_\_\_\_ Elevations of each building face, to scale and with dimensions
- \_\_\_\_\_ Label all building materials

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Revised 5/13/05kmj

1/14/05kmj

9/29/03kmj

8/18/04kmj

4/27/06 kmj

Final DSUP and DSP Checklist:

## GRADING PLAN CHECK LIST SUBMISSION REQUIREMENTS:

Per City of Alexandria Code Section 8-1-22 (d)

**Note:** The following sheets and information are required for every submission. Additional sheets and information should be provided where necessary to demonstrate compliance with City requirements or conditions of approval. Provide 11 copies of the plan and \$500 fee at first submission.

The Check List shall be completed and submitted with first submission of the plans. Failure to comply may result in the plan being deemed incomplete and unacceptable for review.

Property Address: \_\_\_\_\_

Owner/Applicant: \_\_\_\_\_

Owner/Applicant Contact Phone # and Email: \_\_\_\_\_

Engineer: \_\_\_\_\_

Engineer Phone # and Email: \_\_\_\_\_

### REQUIREMENTS FOR EACH SHEET

- \_\_\_\_\_ Print size shall be 24" x 36" and all sheets shall be the same size
- \_\_\_\_\_ Scale no less than 30' to 1" with scale identified on each sheet
- \_\_\_\_\_ City grading plan approval signature block in same place (lower right corner) on each sheet
- \_\_\_\_\_ Date, scale and north arrow with reference to source of meridian
- \_\_\_\_\_ Name, address, signature and registration number of professional preparing the plan on each sheet (original signature required for mylar submission)
- \_\_\_\_\_ Date the plan was prepared on each sheet/ Date of latest revision
- \_\_\_\_\_ Name, address and phone number of the developer/builder and/or the owner(s) of record
- \_\_\_\_\_ Location map with the site shown in relation to the nearest intersection of two or more streets
- \_\_\_\_\_ Table of standard symbols per common engineering practice and abbreviations utilized in the plan set.

### ADDITIONAL REQUIREMENTS

- \_\_\_\_\_ A narrative description of the proposed development
- \_\_\_\_\_ Index to plan sheets
- \_\_\_\_\_ Total area included in the site plan, total area of tax parcel, total existing and proposed impervious area on the tax parcel, and total area that will be disturbed during construction (all expressed in square feet and acres). The disturbed area will be calculated as described in Memorandum to the Industry on Grading Plan Requirements and Waiver Provisions
- \_\_\_\_\_ If applicable, a list of all special use permits, variances, certificate of appropriateness, special exception, waivers, etc., **approved** for the Grading Plan (i.e. Curb cut approval)

- \_\_\_\_\_ Copy of Curb cut approval (if proposed) shown on plan
- \_\_\_\_\_ City Standard Notes to include: *(amend as applicable- available from Site Plan Coordinator)*
  - Existing Conditions Survey Notes
  - City Standard General Notes
  - Environmental Site Assessment Statement
  - Stormwater Management Notes
  - Utility Works Notes
  - Sequence of Construction Notes
  - Demolition Notes
  - Construction Notes
  - Archaeology Notes
  - Rodent Abatement Note
  - Site Specific Notes

## **GRADING PLAN**

*Show location, dimensions, size, height and elevation of the following along with the existing features to be retained:*

- \_\_\_\_\_ Sidewalks, streets, alleys with widths labeled, and elevations
- \_\_\_\_\_ Building restriction lines, vision clearances (on corner lots)
- \_\_\_\_\_ Property lines; show course and distance of each site boundary line
- \_\_\_\_\_ Dimensions of front, side and rear yards
- \_\_\_\_\_ Buildings and structures, including optional decks and other projections such as canopies, roof overhangs
- \_\_\_\_\_ Stoops, steps and staircases
- \_\_\_\_\_ Locations of building entrances and exits
- \_\_\_\_\_ Sump pump and roof drain outfalls [*Note: Flow from downspouts, foundation drains, and sump pumps shall be discharged as per the requirements of Memorandum to Industry on Downspouts, Foundation Drains, and Sump Pumps, Dated June 18, 2004 available on the City web site.*]
- \_\_\_\_\_ Existing and proposed storm and sanitary sewer systems, including lateral lines in plan and profile.
- \_\_\_\_\_ Existing and proposed gas mains and service lines in plan view
- \_\_\_\_\_ Light poles and fixtures on-site and on adjoining rights-of-way
- \_\_\_\_\_ Driveways, entrances, exits, parking areas; show parking spaces by type (standard, compact and handicap) and indicate the number in each bay and the total count
- \_\_\_\_\_ Sidewalks, bike and walking trails on site and on abutting streets or public property/easements
- \_\_\_\_\_ If applicable, recreation areas, swimming pools, etc.
- \_\_\_\_\_ Watercourses, bodies of water, wetlands and limits of flood plains
- \_\_\_\_\_ Depict any Resource Protection Areas as defined in Article XIII of the Zoning Ordinance and delineate their appropriate buffer width

- \_\_\_\_\_ To any wetland or RPA add a note stating that “RPA buffer shall be vegetated with native riparian species and remain undisturbed. RPA is limited to water dependent facilities or redevelopment.”
- \_\_\_\_\_ Significant geological features
- \_\_\_\_\_ Proposed grading shown with 2' contours on the subject property and on adjacent parcels for sufficient distance to indicate the relationship of the site to off-site terrain. The Director of Transportation and Environmental Services (T&ES), at his discretion, may ask to show the contours at a lesser interval than 2', if required, to understand the pattern of micro drainage from the site and/or the adjacent properties.
- \_\_\_\_\_ Two benchmarks
- \_\_\_\_\_ Slopes, terraces and retaining walls, including elevations of level areas and tops and bottoms of walls and exterior stairways and ramps
- \_\_\_\_\_ Indicate elevations at the base of all utility structures other than individual poles, such as fire hydrants and transformers
- \_\_\_\_\_ Provide rim elevation and invert elevations of all piping at manholes
- \_\_\_\_\_ Elevations of streets and alleys

#### **ZONING REQUIREMENTS (Provided on cover sheet)**

*For each element, list zoning ordinance requirement, number approved on preliminary plan and number proposed on final plan, if different.*

- \_\_\_\_\_ Zoning of the site
- \_\_\_\_\_ Existing use on the site
- \_\_\_\_\_ Proposed use for the site
- \_\_\_\_\_ Existing and required lot area
- \_\_\_\_\_ Depict building restriction line
- \_\_\_\_\_ Gross square feet (GSF) of existing and new building area (attach P&Z floor area calculations sheet)
- \_\_\_\_\_ Net square feet (NSF) of existing and new building area (attach P&Z floor area calculations sheet)
- \_\_\_\_\_ Floor-area-ratio (existing and proposed)
- \_\_\_\_\_ Open space (existing and proposed)
- \_\_\_\_\_ Average finished grade of structure for existing and new construction
- \_\_\_\_\_ Height of structure from existing and average finished grade
- \_\_\_\_\_ Yards (front, side and rear) required and proposed
- \_\_\_\_\_ Parking space(s), if applicable listed by total number, size of space and type (compact, standard, and handicapped)
- \_\_\_\_\_ % of crown coverage existing and proposed (based on P&Z Landscape Guidelines)

**\*\*Note: \*\* If the proposed development includes multiple lots, the zoning tabulation information must be provided for each individual lot unless all the lots will be consolidated in conjunction with the proposal.**

## **EROSION AND SEDIMENT CONTROL PLANS (When required)**

- \_\_\_\_\_ Delineate the total area that will be disturbed during construction and show it on the plan. Calculate the total disturbed area as described in the Memorandum to the Industry on Grading Plan Requirements and Waiver Provisions in square feet and acres and show it on the plan. If the total disturbed area is more than 2,500 square feet then the proposed improvements shall be designed to complete the requirements of Article XIII of the Zoning Ordinance of the City of Alexandria.
- \_\_\_\_\_ Narrative phasing plan including demolition and sequence of construction activities
- \_\_\_\_\_ All appropriate details of erosion and sediment control measures [must meet Virginia Erosion and Sedimentation Control Handbook (VESCH) standards]
- \_\_\_\_\_ Sources of water for construction entrance wash down
- \_\_\_\_\_ Grading for drains and traps for construction entrance runoff
- \_\_\_\_\_ Show and list appropriate control measures defined for each drainage area
- \_\_\_\_\_ Identify areas having different ground covering materials (i.e. concrete, asphalt, gravel, turf, crushed stone, etc.)
- \_\_\_\_\_ Delineate any wetlands or Resource Protection Areas (RPA)
- \_\_\_\_\_ Legend for line types (must be in accordance with VESCH)
- \_\_\_\_\_ Temporary and permanent seeding mixtures
- \_\_\_\_\_ Erosion and Sediment Control Narrative to include:
  - Project Description
  - Existing Conditions
  - Critical Areas
  - Adjacent Areas
  - Off-site Areas
  - Erosion and Sediment Control Measures
  - Permanent Stabilization
  - Contaminated Soils
  - Stormwater Runoff Considerations
  - Asphalt Drive Note
  - Tree Note
  - Erosion Control Program
  - Sediment Control Practices
- \_\_\_\_\_ BMP strategies (projects with 2,500 SF of disturbed area including construction staging and storage.)
- \_\_\_\_\_ BMP Narrative
- \_\_\_\_\_ Delineation and description of areas with contaminated soils
- \_\_\_\_\_ Erosion & Sediment Control Notes (*amend as applicable- available from Site Plan Coordinator*)

**STORMWATER MANAGEMENT/BMP SHEETS (When Required)**

*(See Article XIII of the Zoning Ordinance for guidance on water quality calculations)*

- \_\_\_\_\_ Location and description of RPA components
- \_\_\_\_\_ Location and nature of RPA encroachment
- \_\_\_\_\_ Water Quality Impact Assessment, if applicable
- \_\_\_\_\_ Type and location of proposed BMP, with supporting calculations
- \_\_\_\_\_ Pre and post development runoff calculations
- \_\_\_\_\_ Stormwater Narrative
- \_\_\_\_\_ Stormwater Outfall Narrative
- \_\_\_\_\_ Drainage divides off-site/on-site identified and delineated
- \_\_\_\_\_ Water Quality Volume (WQV) computation (in cubic feet and acre-feet)
- \_\_\_\_\_ Water Quality Worksheets A or B and C
- \_\_\_\_\_ City standard water quality BMP data blocks (2) (Project Description and Miscellaneous Blocks)
- \_\_\_\_\_ Signage detail for surface BMP
- \_\_\_\_\_ Water Quality Improvement Fund request, if applicable, can either be included on the First Final plan with original submitted separately to the Division of Environmental Quality, Department of T&ES for approval. Once the request is approved then both the request and approval letters must be included on the plan of subsequent submissions and/or Mylar.
- \_\_\_\_\_ BMP and associated structure details
- \_\_\_\_\_ BMP Sign details

**EXISTING AND PROPOSED VEGETATION (When Required)**

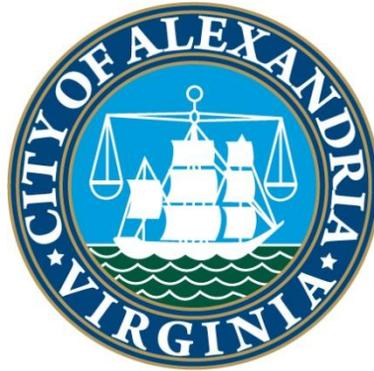
- \_\_\_\_\_ Notes for Preservation & Protection of Existing Vegetation *(amend as applicable- available from Site Plan Coordinator)*
- \_\_\_\_\_ Notes for Proposed Planting *(amend as applicable- available from Site Plan Coordinator)*

## ATTACHMENT 1 City of Alexandria

<b>Stormwater Pollution Prevention Plan Elements Chart</b>	
<i>Element</i>	<b>Sheet Number</b>
<b>Stormwater Management Plan (See Section 13-114)</b>	
Type and location of stormwater discharges	
Information on features discharged into	
Pre-development and Post-development drainage areas	
Name, address, telephone number and email of owner	
Tax reference number and parcel number of property	
Narrative describing current condition and final site conditions	
BMP – Type, geographic coordinates, acres treated and surface water into which it will discharge	
Hydrologic and Hydraulic computations	
Documentation and calculations verifying compliance with quality and quantity requirements	
Map of site with topography that includes:	
a. All contributing drainage areas	
b. Existing streams, ponds, culverts, ditches, wetlands, other water bodies and floodplains	
c. Soil types, forest cover or other vegetative areas	
d. Current conditions including existing structures, roads, known utilities, and easements	
e. Adjoining parcel information	
f. Limits of clearing and grading	
g. Proposed drainage patterns	
h. Proposed conditions – buildings, roads/parking, utilities, BMPs	
i. Proposed land use with tabulation of the % surface area adapted to each use	
<b>Pollution Prevention Plan – Standard Notes (See Section 13-116)</b>	
Include BMP to prohibit the following discharges	
a. Wastewater from washout of concrete	
b. Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials	
c. Fuels, oils, or other pollutants used in vehicle and equipment O&M	
d. Soaps or solvent used in vehicle and equipment washing	
Discharges from dewatering activities, including dewatering of trenches or excavations (prohibited unless managed by appropriate controls)	
Minimize the exposure of construction and landscape materials and wastes, trash, fertilizers, pesticides, herbicides, detergents, sanitary waste, and other materials onsite to precipitation and to stormwater	
<b>Erosion and Sediment Control Plans (provide sheet range)</b>	
<b>Registration Statement – General VPDES Permit for Discharges from Construction Activities</b>	
Description of any additional control measures necessary to address TMDL (provide sheet range if applicable)	

## APPENDIX E. DOCUMENTS RELATED TO MCM #5, POST-CONSTRUCTION STORMWATER MANAGEMENT

This appendix contains policies and procedures for long term, post-construction BMP operation and maintenance. It contains inspection schedules and guidelines; forms; pre- and post-inspection notification letters; and enforcement letters. Distinctions are made between publically- and privately-owned BMPs as required in section II.B.5 of the City's *General Permit for Discharges from Small Municipal Separate Storm Sewer Systems* (General Permit No. VAR040057).



**City of Alexandria, Virginia**

**Policies and Procedures for Post-Construction BMP  
Inspection and Maintenance**

**06/05/2014**

**Eco-CITY  ALEXANDRIA**

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## Purpose

The purpose of this document is to provide policies and procedures for the long term maintenance of Stormwater Best Management Practices (BMPs).

Municipally owned and operated BMPs will be maintained according to the BMP maintenance schedule and guidelines. Annual Inspections will be performed for all municipally owned and operated BMPs.

Privately owned BMPs must be maintained by the owner. Municipal staff will inspect all privately owned BMP facilities other than those that treat stormwater from an individual residential lot at least once every five years.

## **Municipal Stormwater BMP Inspections and Maintenance**

### **Maintenance Schedule and Guidelines**

Municipal BMPs will be maintained according to the BMP maintenance schedule and guideline specific to each BMP found in Appendix 1 of this document.

### **Inspections**

Inspections will be performed on an annual basis and documented on the inspection forms found in Appendix 2 of this document.

After completion, the results of each inspection and any associated pictures will be entered into the City's database.

### **Follow up**

For any BMPs requiring maintenance, the required maintenance tasks must be addressed as soon as possible.

Any work performed, inspections, and inspection pictures will be documented in the City's database.

## **Private Stormwater BMP Maintenance Regulations**

### **City of Alexandria, Virginia**

## **Stormwater BMP Maintenance Regulations**

Effective: July 1, 2014

### **Authority**

The following regulations for stormwater Best Management Practice (BMP) maintenance have been adopted as permitted by the Zoning Ordinance of the City of Alexandria section 13-104(C).

These regulations supplement the Zoning ordinance of the City of Alexandria relating to the regulation of stormwater BMP maintenance.

### **BMP Regulations**

It is the responsibility of the owner of any stormwater BMP facility as described in the Environmental Management Ordinance to provide adequate maintenance and proper functioning of the system. All BMPs must operate in good working condition and in accordance with the approved design and specifications. Maintenance shall be performed in accordance with the requirements set forth in:

1. The BMP maintenance agreement and;
2. The BMP maintenance schedule and guideline, or in cases where no BMP maintenance schedule and guideline is recorded, in accordance with the maintenance requirements as set forth in the original design.

### **Inspections and Maintenance Records**

The owner of any BMP shall keep on file all inspection and maintenance records for the facility. The records shall include at a minimum:

1. The date of inspection or maintenance,
2. The result of the inspection,
3. The type of maintenance performed, if required, and,
4. The signature of the owner of the facility or the individual acting on the owner's behalf.

All records must be kept on file for a minimum of five years and be available for submission to the City upon request.

### **City Inspections**

Inspections by the City may be conducted or established on any reasonable basis, including but not limited to: routine inspections; random inspections; inspections based upon complaints or other notice of possible violations; and joint inspections with other agencies inspecting under environmental or safety laws. Inspections may include, but are not limited to: reviewing maintenance and repair records; sampling discharges, surface water, groundwater, and material or water in BMPs; and evaluating the condition of BMPs.

## Notification of Enforcement Action

If inadequate maintenance is observed by the City, the City shall notify, in writing, the property owner or other person violating these regulations. The notification shall indicate the nature of the violation, contain the address or other description of the site upon which the violation is occurring, order the necessary action to correct the violation, and give a deadline for correcting the violation. Notification will follow the procedure below:

1. The first Letter of Notification shall require the owner to contact the City with a maintenance plan within 30 days and shall allow 90 days for the owner to perform the required BMP maintenance actions.
2. If an adequate response is not received within 30 days following the Letter of Notification, a Letter of Corrective Action will be issued requiring the owner to contact the City with a maintenance plan and to perform the required BMP maintenance within 60 days.
3. If an adequate response is not received within 30 days following the Letter of Corrective Action, a Notice of Noncompliance will be issued requiring the owner to contact the City with a maintenance plan and to perform the required BMP maintenance within 30 days.
4. If an adequate response is not received within 30 days following the Notice of Noncompliance, a Notice of Violation with associated civil penalties will be issued by the City Attorney's Office.

## Extension of time

A person who receives an enforcement letter, or the owner of the land on which the violation occurs, may submit to the Director or T&ES or his or her designee a written request for an extension of time for correction of the violation. On determining that the request includes enough information to show that the violation cannot be corrected within the specified time limit for reasons beyond the control of the person requesting the extension, the City may extend the time limit as is reasonably necessary to allow timely correction of the violation.

## Penalties for noncompliance

Any person who violates these regulations shall be subject to a civil penalty. Each day the violation continues shall constitute a separate offense.

1. First time offenders shall be subject to a civil penalty not to exceed five hundred (\$500.00) per day of continuing violation.
2. Repeat violators shall be subject to a civil penalty not to exceed one thousand dollars (\$1000.00) per day of continuing violation.

The City Attorney's Office will pursue collection of the civil penalty through prosecution in the appropriate court. Additionally, the city may perform the necessary corrections and bill the property owner.

## City Procedures for Inspections of Private Stormwater BMPs

All privately owned stormwater BMPs not serving single family residential properties will be inspected a minimum of once every five years.

City inspections will be performed according to the following procedures:

1. Prior to inspection, a preinspection notification letter will be sent to the property owner and/or contact on file for each BMP. A copy of the preinspection notification letter can be found in appendix 3 of this document.
2. Inspections will be documented on the inspection forms found in appendix 2 of this document.
3. After the inspection has been completed, documentation of the inspection, including any pictures will be documented in the City's database. A hard copy of all inspections will also be kept in the hard copy file for each BMP.
4. After inspection, a post inspection letter will be sent to the property owner and/or contact on file for each BMP with the results of the inspection. If required, the letter will state any maintenance items needed to bring the BMP into compliance with its maintenance requirements. Post-inspection notification letters can be found in appendix 4 of this document.
5. All enforcement action notification will follow the procedures outlined in the City's Stormwater BMP Maintenance Regulations. All enforcement action letters can be found in appendix 5 of this document.

### Documentation

All inspection forms, pre- and post- inspection letters, and enforcement letters will be documented in the City's database. A hard copy of all inspections and all letters sent will be kept on file with the City for a minimum of 5 years.

## Single Family Residential BMP Inspections and Maintenance

It is the responsibility of the owner of any stormwater BMP facility that treats stormwater from an individual residential lot to provide adequate maintenance and proper functioning of the system. All BMPs must operate in good working condition and in accordance with the approved design and specifications.

### Inspections and Maintenance Records

The owner of any BMP shall keep on file all inspection and maintenance records for the facility. The records shall include at a minimum:

1. The date of inspection or maintenance,
2. The result of the inspection,
3. The type of maintenance performed, if required, and,
4. The signature of the owner of the facility or the individual acting on the owner's behalf.

All records must be kept on file for a minimum of five years and be available for submission to the City upon request.

### City Outreach and Inspections

As an alternative to required maintenance agreements, the City will perform homeowner outreach targeted to the maintenance of single family residential BMPs. City Staff will mail out annual fact sheets and/or maintenance reminders targeted to the owner of each BMP.

Inspections by the City may be conducted or established on any reasonable basis, including but not limited to: routine inspections; random inspections; inspections based upon complaints or other notice of possible violations; and joint inspections with other agencies inspecting under environmental or safety laws. Inspections may include, but are not limited to: reviewing maintenance and repair records; sampling discharges, surface water, groundwater, and material or water in BMPs; and evaluating the condition of BMPs.

## Appendix 1-BMP Maintenance Schedule and Guidelines

### Bioretention Area Maintenance Schedule and Guidelines

#### First Year Maintenance Guidelines

Successful establishment of bioretention areas requires that the following tasks be undertaken in the first year following installation:

- Initial inspections. For the first 6 months following construction, the bioretention area should be inspected at least twice after storm events that exceed 1/2 inch of rainfall.
- Spot reseeded. Inspect for bare or eroding areas in the contributing drainage area or around the bioretention area, and make sure they are immediately stabilized with grass cover.
- Watering. Watering is needed once a week during the first 2 months, and then as needed during first growing season (April-October), depending on rainfall.
- Remove and replace dead plants.

#### Routine Maintenance Guidelines

Bioretention areas must be inspected to ensure that they operate in good working condition and in accordance with the approved design and specifications. Items in need of repair must be immediately addressed.

<b>Routine Maintenance Tasks</b>	<b>Frequency</b>
Remove trash and debris	As needed
Check and repair eroded areas	Annually
Inspect for and remove excess sediment	Annually
Mow grass filter strips and bioretention turf cover	At least four times per year
Weed and rake mulch	Twice during the growing season
Inspect plant composition for consistency with approved plans and correct any deficiencies	Annually
Remulch to maintain a three inch layer	Annually
Prune trees and shrubs	Annually
Inspect for clogging or ponding water in the filter bed	Annually
Remove invasive plants	As needed
Replace dead or damaged plant material	As needed
Repair broken pipes	As needed
Remove sediment in pretreatment cells and inflows	Every 2-3 years
Replace the mulch layer	Every 3 years

## Constructed Wetlands Maintenance Schedule and Guidelines

### First Year Maintenance Guidelines

Successful establishment of constructed wetland areas requires that the following tasks be undertaken in the first year:

- Initial Inspections. During the first 6 months following construction, the site should be inspected at least twice after storm events that exceed 1/2 inch of rainfall.
- Spot Reseeding. Inspect for bare or eroding areas in the contributing drainage area or around the wetland buffer, and make sure they are immediately stabilized with grass cover.
- Watering. Trees planted in the buffer and on wetland islands and peninsulas need watering during the first growing season. In general, consider watering every three days for first month, and then weekly during the first growing season (April - October), depending on rainfall.
- Reinforcement Plantings. Remove and replace any dead or dying plantings.

### Routine Maintenance Guidelines

Constructed wetlands must be inspected to ensure that they operate in good working condition and in accordance with the approved design and specifications. Items in need of repair must be immediately addressed.

<b>Routine Maintenance Tasks</b>	<b>Frequency</b>
Remove trash and debris	As needed
Check and repair eroded areas	Annually
Check for and remove nuisance animals and burrows	Annually
Inspect plant composition for consistency with approved plans and correct any deficiencies	Annually
Forebay inspection and cleanout	Annually-remove sediment when forebay reaches 50% capacity or every 5 years
Inspect the orifice and repair any clogging	Annually
Inspect and exercise all mechanical devices	Annually
Inspect for and repair any structural damage and leaks	Annually
Inspect inlets and outlets and repair any clogging and damage	Annually
Remove woody vegetation on or near embankments, forebays, spillways, and outlets	Annually
Check sediment accumulation in the permanent pool	Annually, dredge if necessary
Harvest overgrown vegetation to guide wetland maturation	As needed
Replace displaced rip rap	As needed
Remove invasive plants	As needed
Replace dead or damaged plant material	As needed
Repair broken pipes	As needed

## Dry Swale Maintenance Schedule and Guidelines

### Routine Maintenance Guidelines

Swales must be inspected to ensure that they operate in good working condition and in accordance with the approved design and specifications. Items in need of repair must be immediately addressed.

Routine Maintenance Tasks	Frequency
Remove trash and debris	As needed
Check and repair eroded areas	Annually
Remove any invasive vegetation or weeds	As needed
Mow grass to a height of 4"-9"	As needed to maintain correct height
Inspect plant composition for consistency with approved plans and correct any deficiencies	Annually
Replace any dead or dying plantings	Annually
Remove accumulated sand or sediment	Annually
Inspect check dams and repair any erosion or blockage	Annually
Inspect underdrains and repair any clogging or damage	Annually
Inspect inflow and outlets and repair any clogging or damage	Annually

## Dry Detention Basin Maintenance Schedule and Guidelines

### First Year Maintenance Guidelines

Successful establishment of dry detention basins requires that the following tasks be undertaken in the first year following installation:

- Immediately after the dry extended detention basin is established, the vegetation will be watered twice weekly if needed until the plants become established (commonly six weeks).
- No portion of the dry extended detention pond will be fertilized after the first initial fertilization to establish the vegetation.
- The vegetation in and around the basin will be maintained at a height of approximately six inches.

### Routine Maintenance Guidelines

Dry detention basins must be inspected to ensure that they operate in good working condition and in accordance with the approved design and specifications. Items in need of repair must be immediately addressed.

Routine Maintenance Tasks	Frequency
Remove debris and trash	As needed
Outlet/inlet inspection and cleanout	Annually
Bank mowing and inspection/stabilization of eroded areas	As needed to maintain 4"-9" height
Forebay inspection and cleanout	Annually -remove sediment every 7 years or when sediment volume exceeds 50% of storage volume
Check pond depth	Annually-remove sediment as needed
Remove woody vegetation along embankment	Annually
Inspect for and repair structural damage	Annually
Inspect, exercise, and repair all mechanical devices	Annually
Repair broken pipes	As needed
Replace riprap that has been choked with sediment	As needed

## Extended Detention (ED) Pond Maintenance Schedule and Guidelines

### **First Year Maintenance Guidelines**

ED Ponds are prone clogging at the ED low-flow orifice. Ideally, the orifice should be inspected at least twice a year after initial construction.

### **Routine Maintenance Guidelines**

ED Ponds must be inspected to ensure that they operate in good working condition and in accordance with the approved design and specifications. Items in need of repair must be immediately addressed.

<b>Routine Maintenance Tasks</b>	<b>Frequency</b>
Remove trash and debris	As needed
Check and repair eroded areas	Annually
Check for and remove nuisance animals and burrows	Annually
Mow area around facility	Twice per year at a minimum
Forebay inspection and cleanout	Annually-remove sediment when 50% capacity reached or every 7 years
Inspect plant composition for consistency with approved plans and correct any deficiencies	Annually
Inspect the orifice and repair any clogging or damage	Annually
Inspect and exercise all mechanical devices	Annually
Inspect for and repair any structural damage and leaks	Annually
Inspect inlets and outlets and repair any clogging or damage	Annually
Remove woody vegetation on or near embankments, forebays, spillways, and outlets	Annually
Check sediment accumulation in the permanent pool	Annually, dredge if necessary
Replace displaced rip rap	As needed
Remove invasive plants	As needed
Replace dead or damaged plant material	As needed
Repair broken pipes	As needed

## Grass Channel Maintenance Schedule and Guidelines

### Routine Maintenance Guidelines

Grass channels must be inspected to ensure that they operate in good working condition and in accordance with the approved design and specifications. Items in need of repair must be immediately addressed.

Routine Maintenance Tasks	Frequency
Remove trash and debris	As needed
Check and repair eroded areas	Annually
Mow grass to height of 4"-9"	As need to maintain correct height
Remove excess sediment accumulation	Annually
Inspect for and repair any clogging	Annually
Inspect check dams and repair any erosion or blockages	Annually
Inspect plant composition for consistency with approved plans and correct any deficiencies	Annually
Remove invasive plants	As needed
Replace dead or damaged plant material	As needed

## Infiltration Practice Maintenance Schedule and Guidelines

### Routine Maintenance Guidelines

Infiltration practices must be inspected to ensure that they operate in good working condition and in accordance with the approved design and specifications. Items in need of repair must be immediately addressed.

Routine Maintenance Tasks	Frequency
Remove trash and debris	As needed
Check for and repair eroded areas	Annually
Check for and remove nuisance animals and burrows	Annually
Mow grass to a height of 4"-9"	As needed to maintain correct height
Inspect for and remove excess sediment	Quarterly
Inspect facility for clogging and repair	Semi-annually
Remove woody vegetation from facility	Semi-annually
Inspect plant composition for consistency with approved plans and correct any deficiencies	Annually
Inspect for and repair any structural damage	Annually
Inspect for and repair any clogged outlets or inlets	Annually
Replace clogged pea gravel, topsoil, and filter fabric	As needed
Remove invasive plants	As needed
Replace dead or damaged plant material	As needed
Repair broken pipes	As needed

## Permeable Pavement Maintenance Schedule and Guidelines

### Routine Maintenance Guidelines

Permeable pavement must be inspected to ensure that it operates in good working condition and in accordance with the approved design and specifications. Items in need of repair must be immediately addressed.

<b>Routine Maintenance Tasks</b>	<b>Frequency</b>
Remove trash and debris	As needed
Check and repair eroded areas	Annually
Inspect for and remove excess sediment	Annually
Inspect facility for clogging and repair any clogging and improper drainage	Annually
Inspect for and repair any structural damage	Annually
Inspect for repair any clogged or damaged inlets and outlets	Annually

## **Proprietary BMP Maintenance Schedule and Guidelines**

### Routine Maintenance Guidelines

Proprietary systems must be maintained in good working condition and in accordance with the approved design and specifications. All proprietary systems should be inspected and maintained according to the manufacturer's recommendations.

A copy of the manufacturer's recommended inspection and maintenance schedule must be attached to this document.

## Rainwater Harvesting Maintenance Schedule and Guidelines

### Routine Maintenance Guidelines

Rainwater harvesting systems must be inspected to ensure they operate in good working condition and in accordance with the approved design and specifications. Items in need of repair must be immediately addressed.

All rainwater harvesting system components should be inspected by the responsible party twice per year. A comprehensive inspection by a qualified third party inspector should occur every third year.

<b>Routine Maintenance Tasks</b>	<b>Frequency</b>
Remove leaves and debris from gutters and downspouts	Semi-annually
Remove any algae growth	Semi-annually
Inspect and clean prescreening devices and first flush diverters	Quarterly
Inspect and clean storage tank lids	Annually
Inspect for and repair any clogging	Annually
Inspect and repair mosquito screens	Annually
Inspect tank and remove sediment build up	Every 3 years
Clear overhanging vegetation and trees over roof	Every 3 years
Check integrity of backflow preventer	Every 3 years
Inspect structural integrity of tank, pump, pipe, and electrical system and repair any damage	Every 3 years
Replace damaged or defective system components	As needed

## Rooftop Disconnection BMP Maintenance Schedule and Guidelines

### Routine Maintenance Guidelines

Rooftop disconnections must be inspected to ensure that they operate in good working condition and in accordance with the approved design and specifications. Items in need of repair must be immediately addressed.

Routine Maintenance Tasks	Frequency
Remove trash and debris	As needed
Check and repair eroded areas	Annually
Inspect for downspout disconnection	Annually
Inspect for and remove any sediment accumulation	Annually
Check that pervious areas receiving flow have not been disturbed or converted	Annually

## Sand Filter Maintenance Schedule and Guidelines

### First Year Maintenance Guidelines

Proper functioning of the sand filter requires that the following tasks be undertaken in the first year:

- Initial Inspections. During the first 6 months following construction, the site should be inspected at least twice after storm events that exceed 1/2 inch of rainfall.

### Routine Maintenance Guidelines

Sand filters must be inspected to ensure that they operate in good working condition and in accordance with the approved design and specifications. Items in need of repair must be immediately addressed.

Routine Maintenance Tasks	Frequency
Remove trash and debris	Annually, or more often if needed
Inspect sedimentation chamber or forebay, cleanout when sediment accumulation exceeds design level	Annually
Inspect for standing water or ponding for more than 48 hours after a storm	Annually
Inspect and exercise all mechanical devices and repair if needed	Annually
Inspect for and repair any structural damage and leaks	Annually
For filters that hold water, check for water at normal pool	Annually
Inspect for and repair any clogging	Annually
Cleanout wet sedimentation chambers	Every 2-3 years or when over ½ full
Remove sediments from dry sedimentation chamber	Every 2-3 years

## Sheet Flow to Vegetated Filter Areas and Conserved Open Space Maintenance Schedule and Guidelines

### Routine Maintenance Guidelines

These practices must be inspected to ensure that they operate in good working condition and in accordance with the approved design and specifications. Items in need of repair must be immediately addressed.

<b>Routine Maintenance Tasks</b>	<b>Frequency</b>
Remove trash and debris	As needed
Check and repair eroded areas	Annually
Mow grass filter strips to prevent woody growth	Semi-annually
Inspect for and remove sediment accumulation	Annually
Inspect level spreader for diffuse flow and repair any channeling	Annually
Inspect plant composition for consistency with approved plans and correct any deficiencies	Annually
Remove invasive plants	As needed
Replace dead or damaged plant material	As needed

## **Soil Compost Amendment Maintenance Schedule and Guidelines**

### First Year Maintenance Guidelines

In order to ensure the success of soil compost amendments, the following tasks must be undertaken in the first year following soil restoration:

- Initial inspections. For the first six months following the incorporation of soil amendments, the site should be inspected at least once after each storm event that exceeds 1/2-inch of rainfall.
- Spot Reseeding. Check for bare or eroding areas in the contributing drainage area or around the soil restoration area and make sure they are immediately stabilized with grass cover.
- Fertilization. Depending on the amended soils test, a one-time, spot fertilization may be needed in the fall after the first growing season to increase plant vigor.
- Watering. Water once every three days for the first month, and then weekly during the first year (April-October), depending on rainfall.

### Routine Maintenance Guidelines

Soil compost amendments must be maintained in good working condition and in accordance with the approved design and specifications. There are no major on-going maintenance needs associated with compost amendments.

## Urban Bioretention Area Maintenance Schedule and Guidelines

### First Year Maintenance Guidelines

Successful establishment of bioretention areas requires that the following tasks be undertaken in the first year following installation:

- Initial inspections. For the first 6 months following construction, the bioretention area should be inspected at least twice after storm events that exceed 1/2 inch of rainfall.
- Spot reseeding. Inspect for bare or eroding areas in the contributing drainage area or around the bioretention area, and make sure they are immediately stabilized with grass cover.
- Watering. Watering is needed once a week during the first 2 months, and then as needed during first growing season (April-October), depending on rainfall.
- Remove and replace dead plants.

### Routine Maintenance Guidelines

Bioretention areas must be inspected to ensure that they operate in good working condition and in accordance with the approved design and specifications. Items in need of repair must be immediately addressed.

Routine Maintenance Tasks	Frequency
Remove trash and debris	As needed
Check and repair eroded areas	Annually
Inspect for and remove excess sediment	Annually
Weed mulch	Twice during the growing season
Inspect plant composition for consistency with approved plans and correct any deficiencies	Annually
Remulch to maintain a three inch layer	Annually
Prune trees and shrubs	Annually
Inspect for clogging or ponding water in the filter bed	Annually
Remove invasive plants	As needed
Replace dead or damaged plant material	As needed
Repair broken pipes	As needed
Replace the mulch layer	Every 3 years

## Vegetated Roof Maintenance Schedule and Guidelines

### First Year Maintenance Guidelines

Successful establishment of vegetated roofs require that the following tasks be undertaken during the first year following construction:

- Initial inspections. The roof should be inspected monthly during the vegetation establishment period, and then every six months thereafter to assess the state of vegetative cover and to look for leaks, drainage problems and other functional or structural concerns

### Routine Maintenance Guidelines

Vegetated roofs must be inspected to ensure that they operate in good working condition and in accordance with the approved design and specifications. Items in need of repair must be immediately addressed.

The use of herbicides, insecticides, fungicides, and fertilizers should be avoided, since their presence could hasten degradation of the waterproof membrane. Also, power-washing and other exterior maintenance operations should be avoided so that cleaning agents and other chemicals do not harm the vegetated roof plant communities.

Routine Maintenance Tasks	Frequency
Remove trash and debris	Semi-annually
Inspect waterproof membrane for leaks or cracks and repair any damage	Semi-annually
Remove invasive plants	Semi-annually
Inspect and remove overgrowth and debris from roof drains, scuppers and gutters	Semi-annually
Inspect plant composition for consistency with approved plans and correct any deficiencies	Semi-annually
Replace any dead or dying plants	Semi-annually
Remove excess debris, fallen leaves, and overgrowth	Semi-annually
Check and repair areas of erosion	Semi-annually
Water to promote plant growth and survival	As needed

## Wet Pond Maintenance Schedule and Guidelines

### **First Year Maintenance Guidelines**

Successful establishment of wet ponds requires that the following tasks be undertaken during the first year following construction.

- Initial inspections. For the first six months following construction, the site should be inspected at least twice after storm events that exceed a 1/2-inch of rainfall.
- Aquatic Benches. Remove and replace dead or dying plants.
- Spot Reseeding. Inspect for eroding areas in the contributing drainage area or around the pond buffer, and make sure they are immediately stabilized with grass cover.
- Watering. Trees planted in the pond buffer need to be watered during the first growing season. In general, consider watering every 3 days for first month, and then weekly during the remainder of the first growing season (April - October), depending on rainfall.

### **Routine Maintenance Guidelines**

Wet Ponds must be inspected to ensure that they operate in good working condition and in accordance with the approved design and specifications. Items in need of repair must be immediately addressed.

Routine Maintenance Tasks	Frequency
Remove trash and debris	As needed
Check and repair eroded areas	Annually
Check for and remove nuisance animals and burrows	Annually
Mow area around facility	Twice per year at a minimum
Forebay inspection and cleanout	Annually-remove sediment when forebay reaches 50% capacity or every 7 years
Inspect plant composition for consistency with approved plans and correct any deficiencies	Annually
Inspect and repair any clogging or damage to the orifice	Annually
Inspect and exercise all mechanical devices	Annually
Inspect for and repair structural damage and leaks	Annually
Inspect and repair any damaged or clogged inlets and outlets	Annually
Remove woody vegetation on or near embankments, forebays, spillways, and outlets	Annually
Check sediment accumulation in the permanent pool	Annually, dredge if necessary
Replace displaced rip rap	As needed
Remove invasive plants	As needed
Replace dead or damaged plant material	As needed
Repair broken pipes	As needed

## Wet Swale Maintenance Schedule and Guidelines

This document must be recorded as an addendum to the stormwater management/ BMP facilities operation and maintenance agreement

### Routine Maintenance Guidelines

Swales must be inspected to ensure that they operate in good working condition and in accordance with the approved design and specifications. Items in need of repair must be immediately addressed.

Routine Maintenance Tasks	Frequency
Remove trash and debris	As needed
Check and repair eroded areas	Annually
Remove any invasive vegetation	As needed
Inspect plant composition for consistency with approved plans and correct any deficiencies	Annually
Replace any dead or dying plantings	Annually
Remove accumulated sand or sediment	Annually
Inspect for and repair any eroded or blocked check dams	Annually
Inspect for and remove any clogging at inflow and outlets	Annually



## Appendix 2-Inspection Forms

### City of Alexandria, Virginia BMP Inspection-Bioretention

<b>Project Name:</b>
<b>Location:</b>
<b>Project #:</b>
<b>BMP Type:</b>
<b>BMP Info:</b>

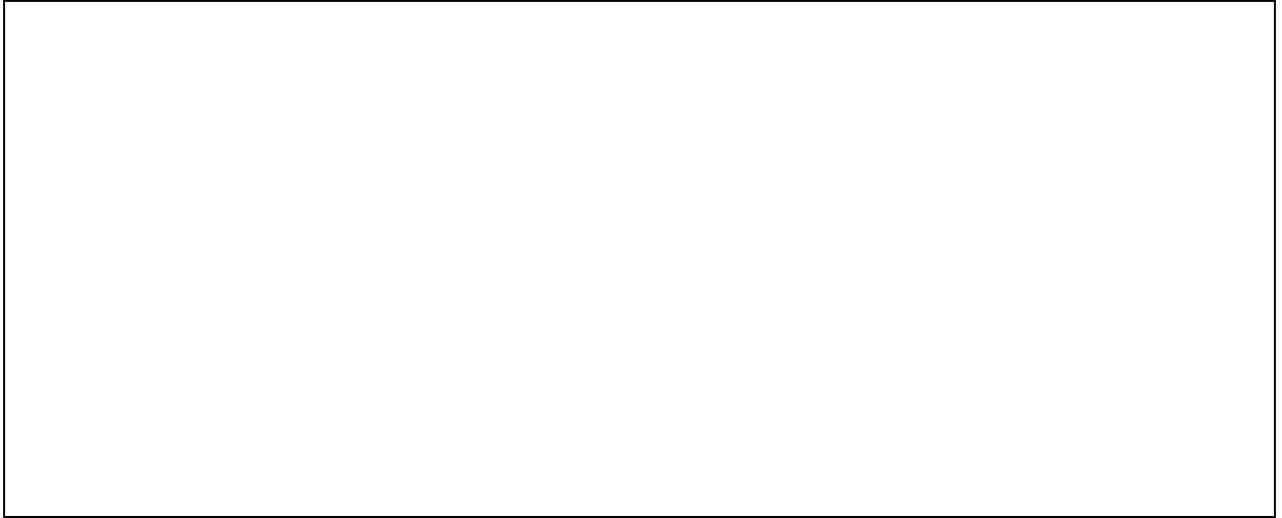
<b>Inspection Date:</b>	<b>Inspection Time:</b>
<b>Primary Inspector:</b>	<b>Time since last precipitation:</b>
<b>Secondary Inspector:</b>	<b>Amount of last precipitation:</b>

<b>Flow condition:</b>
<b>Structural condition:</b>
<b>Overall condition:</b>

Parameter	Result
<b>Contributing Drainage Area</b>	
Adequate vegetation	
No excessive trash or debris	
No evidence of erosion	
<b>Pre-treatment</b>	
No excessive trash or debris	
No evidence of erosion	
Adequate vegetation	
<b>Inlet</b>	
Inlet is stable	
No excessive trash, debris, or sediment	
No evidence of erosion	
Inflow is not blocked by vegetation	
<b>Side slopes</b>	
No evidence of erosion	
No excessive sediment	
No evidence of nuisance animals	
<b>Vegetation</b>	

Plant composition consistent with approved plans	
No invasive species	
No dead or dying plants	
75-90% cover (mulch/ turf)	
Mulch 2"-3" deep	
Grass is more than 6"-10"	
<b>Filter media</b>	
Compacted or inconsistent with plan design	
Mulch more than 3 years old or in poor condition	
Evidence of oil, grease, chemicals or fertilizer	
Excessive trash, debris, or sediment	
No evidence of erosion	
No evidence of clogging	
<b>Underdrain</b>	
Water is being conveyed	
Standing water is present	
<b>Planters (if applicable)</b>	
Water does not drain within 3-4 hours	
No structural deficiencies	
<b>Outlet</b>	
No excessive trash, debris, or obstructions	
No excessive sediment	
No evidence of erosion	
No obstructions	
Grates are in good condition	
Observation well present and capped	
<b>Overall</b>	
Adequate facility access	
Mosquito proliferation	
No encroachments	

<b>Inspection Comments</b>
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**City of Alexandria, Virginia**  
**BMP Inspection-Constructed Wetlands**

<b>Project Name:</b>
<b>Location:</b>
<b>Project #:</b>
<b>BMP Type:</b>
<b>BMP Info:</b>

<b>Inspection Date:</b>	<b>Inspection Time:</b>
<b>Primary Inspector:</b>	<b>Time since last precipitation:</b>
<b>Secondary Inspector:</b>	<b>Amount of last precipitation:</b>

<b>Flow condition:</b>
<b>Structural condition:</b>
<b>Overall condition:</b>

Parameter	Result
<b>Contributing Drainage Area</b>	
Adequate vegetation	
No excessive trash or debris	
No evidence of erosion	
<b>Pre-treatment</b>	
No excessive trash or debris	
No evidence of erosion	
Forebay less than 50% filled	
No evidence of clogging	
Adequate vegetation	
<b>Inlet</b>	
Inlet is stable	
No excessive trash, debris, or sediment	
No evidence of erosion	
No woody growth	
No evidence of nuisance animals	
<b>Vegetation</b>	
Plant composition consistent with approved plans	
No invasive species	
Practice is overgrown and	

not developing into wetland	
Planted trees are healthy	
No dead or dying plants	
<b>Wetland cells and pools</b>	
No excessive trash or debris	
Excessive sediment accumulation	
No evidence of nuisance animals	
No excessive sediment	
Adequately maintaining permanent pool	
Open water overgrown	
<b>Riser and principal spillway</b>	
No evidence of structural damage	
Valves are operational	
No seepage into conduit	
No evidence of clogging	
Trash rack is clear of debris	
No obstruction of orifice	
No excessive sediment	
<b>Dam/Embankment</b>	
No cracking, bulging, or sliding	
No soft spots, seepage, or sink holes	
No evidence of nuisance animals	
No woody vegetation	
No evidence of erosion	
<b>Emergency Spillway</b>	
No woody growth	
No excessive trash, debris, or sediment	
No evidence of erosion	
No soft spots, seepage, or sink holes	
No riprap failure	
No evidence of obstruction	
<b>Outlet</b>	
No woody growth	
No excessive trash, debris,	

or obstructions	
No excessive sediment	
No evidence of erosion	
No rip rap failure	
Pipe in good condition	
Endwall/headwall in good condition	
<b>Overall</b>	
Adequate facility access	
Mosquito proliferation	
No encroachments	

<b>Inspection Comments</b>



**City of Alexandria, Virginia**  
**BMP Inspection-Dry Swale**

<b>Project Name:</b>
<b>Location:</b>
<b>Project #:</b>
<b>BMP Type:</b>
<b>BMP Info:</b>

<b>Inspection Date:</b>	<b>Inspection Time:</b>
<b>Primary Inspector:</b>	<b>Time since last precipitation:</b>
<b>Secondary Inspector:</b>	<b>Amount of last precipitation:</b>

<b>Flow condition:</b>
<b>Structural condition:</b>
<b>Overall condition:</b>

Parameter	Result
<b>Contributing Drainage Area</b>	
Adequate vegetation	
No excessive trash or debris	
No evidence of erosion	
<b>Pre-treatment</b>	
No excessive trash or debris	
No evidence of erosion	
No evidence of clogging	
Adequate vegetation	
<b>Inlet /swale sides and base</b>	
Inlet is stable	
No excessive trash, debris, or sediment	
No evidence of erosion	
<b>Check dams</b>	
Proper function of dam	
No accumulation of trash/debris behind dam	
<b>Vegetation</b>	
Plant composition consistent with approved	

plans	
No invasive species	
No dead or dying plants	
Grass height is 4"-9"	
<b>Underdrain</b>	
Water is being conveyed	
Standing water is present	
<b>Outlet</b>	
No excessive trash, debris, or obstructions	
No excessive sediment	
No evidence of erosion	
<b>Overall</b>	
Adequate facility access	
Mosquito proliferation	
No encroachments	

Inspection Comments



**City of Alexandria, Virginia**  
**BMP Inspection-Extended Detention Pond**

<b>Project Name:</b>
<b>Location:</b>
<b>Project #:</b>
<b>BMP Type:</b>
<b>BMP Info:</b>

<b>Inspection Date:</b>	<b>Inspection Time:</b>
<b>Primary Inspector:</b>	<b>Time since last precipitation:</b>
<b>Secondary Inspector:</b>	<b>Amount of last precipitation:</b>

<b>Flow condition:</b>
<b>Structural condition:</b>
<b>Overall condition:</b>

Parameter	Result
<b>Contributing Drainage Area</b>	
Adequate vegetation	
No excessive trash or debris	
No evidence of erosion	
<b>Pre-treatment</b>	
No excessive trash or debris	
No evidence of erosion	
Forebay less than 50% filled	
No evidence of clogging	
Adequate vegetation	
<b>Inlet</b>	
Inlet is stable	
No excessive trash, debris, or sediment	
No evidence of erosion	
No woody growth	
No evidence of nuisance animals	
<b>Vegetation</b>	
Plant composition consistent with approved plans	
No invasive species	
No overgrown grass around	

facility	
No dead or dying plants	
<b>Permanent pool/Side slopes</b>	
No excessive trash or debris	
No evidence of erosion	
No evidence of nuisance animals	
No excessive sediment	
Adequately maintaining permanent pool	
<b>Riser and principal spillway</b>	
No evidence of structural damage	
Valves are operational	
No seepage into conduit	
No evidence of clogging	
Trash rack is clear of debris	
No obstruction of orifice	
No excessive sediment	
<b>Dam/Embankment</b>	
No cracking, bulging, or sliding	
No soft spots, seepage, or sink holes	
No evidence of nuisance animals	
No woody vegetation	
<b>Emergency Spillway</b>	
No woody growth	
No excessive trash, debris, or sediment	
No evidence of erosion	
No soft spots, seepage, or sink holes	
No riprap failure	
No evidence of obstruction	
<b>Outlet</b>	
No woody growth	
No excessive trash, debris, or obstructions	
No excessive sediment	
No evidence of erosion	

No rip rap failure	
Pipe in good condition	
Endwall/headwall in good condition	
<b>Overall</b>	
Adequate facility access	
Mosquito proliferation	
No encroachments on pond	

<b>Inspection Comments</b>



**City of Alexandria, Virginia**  
**BMP Inspection-Grass Channel**

<b>Project Name:</b>
<b>Location:</b>
<b>Project #:</b>
<b>BMP Type:</b>
<b>BMP Info:</b>

<b>Inspection Date:</b>	<b>Inspection Time:</b>
<b>Primary Inspector:</b>	<b>Time since last precipitation:</b>
<b>Secondary Inspector:</b>	<b>Amount of last precipitation:</b>

<b>Flow condition:</b>
<b>Structural condition:</b>
<b>Overall condition:</b>

Parameter	Result
<b>Contributing Drainage Area</b>	
Adequate vegetation	
No excessive trash or debris	
No evidence of erosion	
<b>Pre-treatment</b>	
No excessive trash or debris	
No evidence of erosion	
No evidence of clogging	
Adequate vegetation	
<b>Inlet</b>	
Inlet is stable	
No excessive trash, debris, or sediment	
No evidence of erosion	
<b>Check dams</b>	
Proper function of dam	
No accumulation of trash/debris behind dam	
<b>Vegetation</b>	
Plant composition consistent with approved	

plans	
No invasive species	
No dead or dying plants	
Grass height is not 4"-9"	
No evidence of erosion	
<b>Side slopes</b>	
No evidence of erosion	
<b>Channel Bottom</b>	
No excessive trash or debris	
No evidence of soil compaction	
No evidence of erosion	
<b>Outlet</b>	
No excessive trash, debris, or obstructions	
No excessive sediment	
No evidence of erosion	
Outlet is stable	
<b>Overall</b>	
Adequate facility access	
Mosquito proliferation	
No encroachments	

Inspection Comments



**City of Alexandria, Virginia**  
**BMP Inspection-Hydrodynamic**

<b>Project Name:</b>
<b>Location:</b>
<b>Project #:</b>
<b>BMP Type:</b>
<b>BMP Info:</b>

<b>Inspection Date:</b>	<b>Inspection Time:</b>
<b>Primary Inspector:</b>	<b>Time since last precipitation:</b>
<b>Secondary Inspector:</b>	<b>Amount of last precipitation:</b>

<b>Flow condition:</b>
<b>Structural condition:</b>
<b>Overall condition:</b>

Parameter	Result
<b>Contributing Drainage Area</b>	
Adequate vegetation	
No excessive trash or debris	
No evidence of erosion	
<b>Debris clean out</b>	
No excessive trash or debris	
No evidence of clogging	
<b>Structural components</b>	
No evidence of deterioration	
Grates in good condition	
No evidence of spalling or cracking	
<b>Sediment deposition</b>	
Inlets/outlets clear of sediment	
Sediment below manufacturer's limit	
<b>Overall</b>	
No evidence of flow bypass	
No noticeable odors	
Adequate facility access	

Mosquito proliferation	
No encroachments	

<b>Inspection Comments</b>



**City of Alexandria, Virginia**  
**BMP Inspection-Infiltration Practice**

<b>Project Name:</b>
<b>Location:</b>
<b>Project #:</b>
<b>BMP Type:</b>
<b>BMP Info:</b>

<b>Inspection Date:</b>	<b>Inspection Time:</b>
<b>Primary Inspector:</b>	<b>Time since last precipitation:</b>
<b>Secondary Inspector:</b>	<b>Amount of last precipitation:</b>

<b>Flow condition:</b>
<b>Structural condition:</b>
<b>Overall condition:</b>

Parameter	Result
<b>Contributing Drainage Area</b>	
Adequate vegetation	
No excessive trash or debris	
No evidence of erosion	
<b>Pre-treatment</b>	
No excessive trash or debris	
No evidence of erosion	
No evidence of clogging	
Adequate vegetation	
<b>Inlet</b>	
Inlet is stable	
No excessive trash, debris, or sediment	
No evidence of erosion	
Inflow is not blocked by vegetation	
<b>Embankment/Side slopes</b>	
No evidence of erosion	
No excessive sediment	
No evidence of nuisance animals	
<b>Vegetation</b>	
Plant composition consistent with approved	

plans	
No trees in the facility	
Grass is more than 4"-9" in height	
<b>Facility drainage</b>	
Compacted or inconsistent with plan design	
Excessive trash and debris	
No drawdown 3 days after a ½ inch storm.	
Excessive trash, debris, or sediment	
No evidence of erosion	
No evidence of clogging	
<b>Structural</b>	
No evidence of spalling or cracking	
Grates are in good condition	
No evidence of structural deterioration	
<b>Outlet</b>	
No excessive trash, debris, or obstructions	
No excessive sediment	
No evidence of erosion	
No obstructions	
Grates are in good condition	
Observation well present and capped	
<b>Overall</b>	
Adequate facility access	
Mosquito proliferation	
No encroachments	

<b>Inspection Comments</b>



**City of Alexandria, Virginia**  
**BMP Inspection-Permeable Pavement**

<b>Project Name:</b>
<b>Location:</b>
<b>Project #:</b>
<b>BMP Type:</b>
<b>BMP Info:</b>

<b>Inspection Date:</b>	<b>Inspection Time:</b>
<b>Primary Inspector:</b>	<b>Time since last precipitation:</b>
<b>Secondary Inspector:</b>	<b>Amount of last precipitation:</b>

<b>Flow condition:</b>
<b>Structural condition:</b>
<b>Overall condition:</b>

<b>Parameter</b>	<b>Result</b>
<b>Contributing Drainage Area</b>	
Adequate vegetation	
No excessive trash or debris	
No evidence of erosion	
<b>Pre-treatment/Inlets</b>	
No excessive trash or debris	
No evidence of erosion	
No evidence of clogging	
<b>Pavement Surface</b>	
No excessive trash or debris	
No evidence of erosion	
No loose material stored on pavement surface	
No excessive sediment	
Pavement is stained, clogged or ponded	
<b>Structural Integrity</b>	
No slumping, cracking, spalling or broken pavers	
<b>Observation wells</b>	
Present and capped	
<b>Outlet</b>	
No excessive trash, debris, or obstructions	
No excessive sediment	

No evidence of erosion	
Pipe in good condition	
<b>Overall</b>	
Adequate facility access	
Mosquito proliferation	
No encroachments	

<b>Inspection Comments</b>



**City of Alexandria, Virginia**  
**BMP Inspection-Rainwater Harvesting**

<b>Project Name:</b>
<b>Location:</b>
<b>Project #:</b>
<b>BMP Type:</b>
<b>BMP Info:</b>

<b>Inspection Date:</b>	<b>Inspection Time:</b>
<b>Primary Inspector:</b>	<b>Time since last precipitation:</b>
<b>Secondary Inspector:</b>	<b>Amount of last precipitation:</b>

<b>Flow condition:</b>
<b>Structural condition:</b>
<b>Overall condition:</b>

Parameter	Result
<b>Overall</b>	
No evidence of leaking	
No evidence of structural damage	
Electric system is functioning	
Sediment accumulation is less than 5% of design volume	
No excessive overhanging trees/vegetation	
<b>Captured roof area</b>	
No excessive trash or debris	
<b>Gutter system</b>	
No evidence of clogging	
Runoff reaching the system	
No algae growth	
No excessive sediment	
No mosquitos in system	
<b>Screens and filters</b>	
No excessive debris or sediment	
<b>Pump</b>	
Pump is operational	





**City of Alexandria, Virginia**  
**BMP Inspection-Rooftop Disconnection**

<b>Project Name:</b>
<b>Location:</b>
<b>Project #:</b>
<b>BMP Type:</b>
<b>BMP Info:</b>

<b>Inspection Date:</b>	<b>Inspection Time:</b>
<b>Primary Inspector:</b>	<b>Time since last precipitation:</b>
<b>Secondary Inspector:</b>	<b>Amount of last precipitation:</b>

<b>Flow condition:</b>
<b>Structural condition:</b>
<b>Overall condition:</b>

Parameter	Result
<b>Piping, gutters, and drains</b>	
Downspouts remain disconnected	
No excessive trash or debris	
Runoff is entering pervious area	
<b>Downstream treatment</b>	
Treatment practice in place	
No ponding at point of disconnection	
No evidence of erosion	
Adequate facility access	
Mosquito proliferation	
No encroachments	

<b>Inspection Comments</b>



**City of Alexandria, Virginia**  
**BMP Inspection-Sand Filter**

<b>Project Name:</b>
<b>Location:</b>
<b>Project #:</b>
<b>BMP Type:</b>
<b>BMP Info:</b>

<b>Inspection Date:</b>	<b>Inspection Time:</b>
<b>Primary Inspector:</b>	<b>Time since last precipitation:</b>
<b>Secondary Inspector:</b>	<b>Amount of last precipitation:</b>

<b>Flow condition:</b>
<b>Structural condition:</b>
<b>Overall condition:</b>

Parameter	Result
<b>Contributing Drainage Area</b>	
Adequate vegetation	
No excessive trash or debris	
No evidence of erosion	
<b>Inlet</b>	
Inlet is stable	
No excessive trash, debris, or sediment	
No evidence of erosion	
Oil and grease entry minimized	
<b>Sedimentation Chambers</b>	
Excessive sediment and debris	
Water chambers not more than ½ full of sediment	
<b>Filter media</b>	
No evidence of clogging	
<b>Water retention</b>	
Water holding chambers at normal pool	
No evidence of leakage	
<b>Structural components</b>	

No evidence of deterioration	
Grates and manholes in good condition	
No evidence of spalling or cracking	
<b>Outlet/ Spillway</b>	
No structural deterioration	
No excessive trash, debris, or sediment	
No evidence of erosion	
No evidence of obstruction	
<b>Pump</b>	
Conduits appear to be intact	
No excessive trash, debris, or obstructions	
Panel box is marked	
No evidence of failure	
<b>Overall</b>	
Adequate facility access	
Mosquito proliferation	
No encroachments	
No noticeable odors	

<b>Inspection Comments</b>



**City of Alexandria, Virginia**  
**BMP Inspection-Sheet flow to vegetated areas**

<b>Project Name:</b>
<b>Location:</b>
<b>Project #:</b>
<b>BMP Type:</b>
<b>BMP Info:</b>

<b>Inspection Date:</b>	<b>Inspection Time:</b>
<b>Primary Inspector:</b>	<b>Time since last precipitation:</b>
<b>Secondary Inspector:</b>	<b>Amount of last precipitation:</b>

<b>Flow condition:</b>
<b>Structural condition:</b>
<b>Overall condition:</b>

Parameter	Result
<b>Contributing Drainage Area</b>	
Adequate vegetation	
No excessive trash or debris	
No evidence of erosion	
<b>Inlet</b>	
Inlet is stable	
No excessive trash, debris, or sediment	
No evidence of erosion	
<b>Channel</b>	
No evidence of erosion	
No accumulation of trash/debris at top of filter area	
<b>Vegetation</b>	
Plant composition consistent with approved plans	
No invasive species	
No dead or dying plants	
<b>Gravel diaphragm</b>	
In place and functioning	
<b>Level spreader</b>	
No excessive trash or debris	
No evidence concentrated flow	





**City of Alexandria, Virginia**  
**BMP Inspection-Soil Compost Amendments**

<b>Project Name:</b>
<b>Location:</b>
<b>Project #:</b>
<b>BMP Type:</b>
<b>BMP Info:</b>

<b>Inspection Date:</b>	<b>Inspection Time:</b>
<b>Primary Inspector:</b>	<b>Time since last precipitation:</b>
<b>Secondary Inspector:</b>	<b>Amount of last precipitation:</b>

<b>Flow condition:</b>
<b>Structural condition:</b>
<b>Overall condition:</b>

Parameter	Result
<b>Overall</b>	
No evidence of erosion	
No evidence of excessive fertilizer/chemical use	
No excessive trash or debris	

Inspection Comments



**City of Alexandria, Virginia**  
**BMP Inspection-Proprietary Filter Device**

<b>Project Name:</b>
<b>Location:</b>
<b>Project #:</b>
<b>BMP Type:</b>
<b>BMP Info:</b>

<b>Inspection Date:</b>	<b>Inspection Time:</b>
<b>Primary Inspector:</b>	<b>Time since last precipitation:</b>
<b>Secondary Inspector:</b>	<b>Amount of last precipitation:</b>

<b>Flow condition:</b>
<b>Structural condition:</b>
<b>Overall condition:</b>

Parameter	Result
<b>Contributing Drainage Area</b>	
Adequate vegetation	
No excessive trash or debris	
No evidence of erosion	
<b>Debris clean out</b>	
No excessive trash or debris	
No evidence of clogging	
<b>Structural components</b>	
No evidence of deterioration	
Grates in good condition	
No evidence of spalling or cracking	
<b>Sediment deposition</b>	
Filtration chamber clear of sediment	
Water chambers not more than ½ full of sediment	
<b>Water retention (if required)</b>	
Water holding chambers at normal level	





**City of Alexandria, Virginia**  
**BMP Inspection-Vegetated Roof**

<b>Project Name:</b>
<b>Location:</b>
<b>Project #:</b>
<b>BMP Type:</b>
<b>BMP Info:</b>

<b>Inspection Date:</b>	<b>Inspection Time:</b>
<b>Primary Inspector:</b>	<b>Time since last precipitation:</b>
<b>Secondary Inspector:</b>	<b>Amount of last precipitation:</b>

<b>Flow condition:</b>
<b>Structural condition:</b>
<b>Overall condition:</b>

Parameter	Result
<b>Vegetation</b>	
Plant composition consistent with approved plans	
No dead or dying plants	
Plants are choking on excess vegetation	
No invasive vegetation	
No overgrown grass	
No drought conditions	
No pest infestations	
No excessive trash or debris	
<b>Structural components</b>	
Waterproof membrane is not leaking or cracked	
<b>Drainage layer and inlet</b>	
No evidence of clogging	
Inlet is in good condition	
<b>Soil substrate</b>	
No evidence of erosion	
No evidence of clogging	
<b>Overall</b>	
No excessive erosion	
Mosquito proliferation	

No evidence of damage/vandalism	
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<b>Inspection Comments</b>



**City of Alexandria, Virginia**  
**BMP Inspection-Wet Pond**

<b>Project Name:</b>
<b>Location:</b>
<b>Project #:</b>
<b>BMP Type:</b>
<b>BMP Info:</b>

<b>Inspection Date:</b>	<b>Inspection Time:</b>
<b>Primary Inspector:</b>	<b>Time since last precipitation:</b>
<b>Secondary Inspector:</b>	<b>Amount of last precipitation:</b>

<b>Flow condition:</b>
<b>Structural condition:</b>
<b>Overall condition:</b>

Parameter	Result
<b>Contributing Drainage Area</b>	
Adequate vegetation	
No excessive trash or debris	
No evidence of erosion	
<b>Pre-treatment</b>	
No excessive trash or debris	
No evidence of erosion	
Forebay less than 50% filled	
No evidence of clogging	
Adequate vegetation	
<b>Inlet</b>	
Inlet is stable	
No excessive trash, debris, or sediment	
No evidence of erosion	
No woody growth	
No evidence of nuisance animals	
<b>Vegetation</b>	
Plant composition consistent with approved plans	
No invasive species	
No overgrown grass around	

facility	
No dead or dying plants	
<b>Permanent pool/Side slopes</b>	
No excessive trash or debris	
No evidence of erosion	
No evidence of nuisance animals	
No excessive sediment	
Adequately maintaining permanent pool	
<b>Riser and principal spillway</b>	
No evidence of structural damage	
Valves are operational	
No seepage into conduit	
No evidence of clogging	
Trash rack is clear of debris	
No obstruction of orifice	
No excessive sediment	
<b>Dam/Embankment</b>	
No cracking, bulging, or sliding	
No soft spots, seepage, or sink holes	
No evidence of nuisance animals	
No woody vegetation	
No evidence of erosion	
<b>Emergency Spillway</b>	
No woody growth	
No excessive trash, debris, or sediment	
No evidence of erosion	
No soft spots, seepage, or sink holes	
No riprap failure	
No evidence of obstruction	
<b>Outlet</b>	
No woody growth	
No excessive trash, debris, or obstructions	
No excessive sediment	

No evidence of erosion	
No rip rap failure	
Pipe in good condition	
Endwall/headwall in good condition	
<b>Overall</b>	
Adequate facility access	
Mosquito proliferation	
No encroachments on pond	

<b>Inspection Comments</b>



**City of Alexandria, Virginia**  
**BMP Inspection-Wet Swale**

<b>Project Name:</b>
<b>Location:</b>
<b>Project #:</b>
<b>BMP Type:</b>
<b>BMP Info:</b>

<b>Inspection Date:</b>	<b>Inspection Time:</b>
<b>Primary Inspector:</b>	<b>Time since last precipitation:</b>
<b>Secondary Inspector:</b>	<b>Amount of last precipitation:</b>

<b>Flow condition:</b>
<b>Structural condition:</b>
<b>Overall condition:</b>

Parameter	Result
<b>Contributing Drainage Area</b>	
Adequate vegetation	
No excessive trash or debris	
No evidence of erosion	
<b>Pre-treatment</b>	
No excessive trash or debris	
No evidence of erosion	
No evidence of clogging	
Adequate vegetation	
<b>Inlet</b>	
Inlet is stable	
No excessive trash, debris, or sediment	
No evidence of erosion	
<b>Check dams</b>	
Proper function of dam	
No accumulation of trash/debris behind dam	
<b>Vegetation</b>	
Plant composition consistent with approved	

plans	
No invasive species	
No dead or dying plants	
<b>Outlet</b>	
No excessive trash, debris, or obstructions	
No excessive sediment	
No evidence of erosion	
<b>Overall</b>	
Adequate facility access	
Mosquito proliferation	
No encroachments	

Inspection Comments

## Appendix 3-Pre-Inspection Notification Letter



*City of Alexandria, Virginia*  
Department of Transportation & Environmental Services  
Infrastructure and Environmental Quality  
2900-B Business Center Drive  
Alexandria, VA 22314  
www.alexandriava.gov

DATE

«Owner\_Name»

«OWNER\_ADDRESS»

«Owner\_City», «Owner\_State» «Owner\_Zip»

RE: STORMWATER BEST MANAGEMENT PRACTICE (BMP) FACILITY INSPECTION  
«Plan\_Name», «BMP\_Address», «BMP\_City», «BMP\_State» «BMP\_Zip»  
(Project #«BMP\_ID» – «BMP\_Type\_Full»)

Dear Facility Owner:

As part of the City's stormwater program, staff will be visiting the above-referenced project to inspect the stormwater Best Management Practice (BMP) facility within the next few weeks. This inspection ensures proper maintenance activities are being performed and that the BMP is functioning according to design. The City performs maintenance inspections of stormwater BMPs to meet regulatory requirements as well as practice good environmental stewardship. It is the responsibility of the owner to ensure proper maintenance and functioning of the BMP that serves their property.

Examples of stormwater BMPs include ponds, bioretention areas, sand filters, hydrodynamic devices, and vegetated buffer strips, to name a few. These BMPs improve the quality of stormwater runoff from a developed site by reducing pollutants such as sediment, oil, litter, and excess nutrients that enter our local streams and waterways, such as Four Mile Run, Cameron Run, Holmes Run, the Potomac River and Chesapeake Bay.

As required by the Virginia Stormwater Management Act and Chesapeake Bay Preservation Act, the Environmental Management Ordinance (Article XIII of the Alexandria Zoning Ordinance) establishes the City's stormwater management program and sets forth the owner's inspection and maintenance requirements and the City's quality assurance inspections. Additionally, under the Virginia Stormwater Management Program permit regulations (9VAC25-870), the Virginia Department of Environmental Quality (DEQ) requires the City to control pollution to the maximum extent practicable and to ensure that BMPs are being maintained and function properly.

City Code Section 13-109(G) states that all stormwater BMPs must be adequately maintained by their owners. This is also outlined in the BMP maintenance agreement executed between the site developer/owner and the City to ensure proper functioning and regular maintenance for the life of the facility. This agreement is on file in our office and conveys to successive landowners with the property deed.

*City staff will inspect the above referenced facility in the next few weeks. If you would like to be present for the inspection, it can be scheduled when you can be onsite to discuss any issues and answer any questions you may have about the facility. Please contact me by phone at 703-746-4071 or by email to schedule the inspection or to discuss this further.*

A post-inspection letter will be sent following the inspection. In instances where inadequate maintenance is observed or the facility is malfunctioning, this letter will list maintenance requirements and will specify a period of time to correct the deficiencies. Documentation of maintenance must be provided to this office and will be kept on file. **Failure to complete required maintenance activities may result in a notice of violation and assessment of civil penalties.**

Our records show that you are the owner – or may act on behalf of the owner – of the facility. However, if you are not the appropriate contact for the facility, please let me know or forward this letter to the appropriate person or organization.

Your time and cooperation are greatly appreciated and working together will help to achieve our goal of protecting our streams, the Potomac River, and the Chesapeake Bay. Please feel free to contact me if you have any questions or need any additional information. Please reference the project # located at the top of this letter in your correspondence.

Sincerely,

Water Quality Compliance Specialist  
City of Alexandria, VA

## Appendix 4-Post-Inspection Letters

### Post inspection Letter-No maintenance required



*City of Alexandria, Virginia*  
Department of Transportation & Environmental Services  
Infrastructure and Environmental Quality  
2900-B Business Center Drive  
Alexandria, VA 22314  
www.alexandriava.gov

DATE

«Owner\_Name»

«Owner\_Address»

«Owner\_City», «Owner\_State» «Owner\_Zip»

RE: POST INSPECTION – STORMWATER BEST MANAGEMENT PRACTICE (BMP) FACILITIES  
«Plan\_Name», «BMP\_Address», «BMP\_City», «BMP\_State» «BMP\_Zip»  
(Project #«BMP\_ID» – «BMP\_Type\_Full» & BMP)

Dear Facilities Owner:

The City performed an inspection of the above-referenced stormwater Best Management Practice (BMP) facility on **DATE**. This letter is sent to inform you of the inspection findings and any required maintenance activities that must be performed.

As part of the City's stormwater program, staff inspects stormwater Best Management Practice (BMP) facilities to ensure proper maintenance activities are being performed and that the BMP is functioning according to design. The City performs maintenance inspections of stormwater BMPs to meet regulatory requirements as well as practice good environmental stewardship. It is the responsibility of the owner to ensure proper maintenance and functioning of the BMP that serves their property..

As required by the Virginia Stormwater Management Act and Chesapeake Bay Preservation Act, the Environmental Management Ordinance (Article XIII of the Alexandria Zoning Ordinance) establishes the City's stormwater management program and sets forth the owner's inspection and maintenance requirements and the City's quality assurance inspections. Additionally, under the Virginia Stormwater Management Program permit regulations (9VAC25-870), the Virginia Department of Environmental Quality (DEQ) requires the City to control pollution to the maximum extent practicable and to ensure that BMPs are being maintained and function properly.

City Code Section 13-109(G) states that all stormwater BMPs must be adequately maintained by their owners. This is also outlined in the BMP maintenance agreement executed between the site developer/owner and the City to ensure proper functioning and regular maintenance for the life of the

facility. This agreement is on file in our office, runs with the land as part of the recorded deed and is thus binding on subsequent landowners.

**The following observations were made during the inspection:**

**Plan number and Name**

- Comments

*No action is necessary at this time. Please continue routine inspection and maintenance of the facility to ensure it functions as designed.*

Your time and cooperation are greatly appreciated and will help to achieve our goal of protecting our streams, rivers and the Chesapeake Bay. Please contact me directly at 703-746-4071, via email, or via fax at 703-519-8354 if you have any questions, need additional information.

Thank you for your time and cooperation with regard to this matter.

Sincerely,

Water Quality Compliance Specialist

## Post-Inspection Letter-Maintenance Required



*City of Alexandria, Virginia*  
Department of Transportation & Environmental Services  
Infrastructure and Environmental Quality  
2900-B Business Center Drive  
Alexandria, VA 22314  
www.alexandriava.gov

DATE

«Owner\_Name»

«Owner\_Address»

«Owner\_City», «Owner\_State» «Owner\_Zip»

RE: POST INSPECTION – STORMWATER BEST MANAGEMENT PRACTICE (BMP) FACILITIES  
«Plan\_Name», «BMP\_Address», «BMP\_City», «BMP\_State» «BMP\_Zip»  
(Project #«BMP\_ID» – «BMP\_Type\_Full» & BMP)

Dear Facilities Owner:

The City performed an inspection of the above-referenced stormwater Best Management Practice (BMP) facility on **DATE**. This letter is sent to inform you of the inspection findings and required maintenance activities that must be performed. Documentation of maintenance must be received by this office within the timeframe provided below to avoid a notice of violation for noncompliance.

Section 13-109 of the Environmental Management Ordinance (Article XIII of the Alexandria Zoning Ordinance) requires the City of Alexandria to perform maintenance inspections of stormwater BMPs and ensure their proper function. Additionally, under Virginia Stormwater Management Program permit regulations (9VAC 25-870), the Virginia Department of Environmental Quality (DEQ) requires the City to ensure adequate long-term operation and maintenance of these BMPs by requiring the owner to develop a recorded inspection and maintenance schedule.

City ordinance {13-109(G)} states that all stormwater BMPs must be adequately maintained by the property owners. This is also outlined in the BMP maintenance agreement executed between the owner (or site developer) and the City to ensure proper functioning and regular maintenance for the life of the facility. This agreement is on file in our office, runs with the land as part of the recorded deed and is thus binding on subsequent landowners.

**The following observations were made during the inspection and require maintenance:**

### **Plan number and Name**

- Comments

***Immediate maintenance is required to restore proper functioning of the facility. Please perform maintenance of the facility and provide the below requested information.***

***Provide the following:***

- Within **30 days** from the date of this letter provide a written plan identifying applicable maintenance / corrective actions that will be taken. The plan may be submitted by mail, email, or fax.
- Perform maintenance / corrective actions within **90 days** of the date of this letter. Provide documentation of the work performed to this office. Documentation may be submitted by mail, email, or fax.

Please reference the Project # in your correspondence as listed at the beginning of this letter.

Your time and cooperation are greatly appreciated and will help to achieve our goal of protecting our streams, rivers and the Chesapeake Bay. Please contact me directly at 703-746-4071, via email or via fax at 703-519-8354 if you have any questions, need additional information, or to submit the above requested information.

Thank you for your time and cooperation with regard to this matter.

Sincerely,

Water Quality Compliance Specialist

## Appendix 5-Enforcement Letters

### Notice of corrective action required



*City of Alexandria, Virginia*  
Department of Transportation & Environmental Services  
Infrastructure and Environmental Quality  
2900-B Business Center Drive  
Alexandria, VA 22314  
www.alexandriava.gov

DATE

«Owner\_Name»

«Owner\_Address»

«Owner\_City», «Owner\_State» «Owner\_Zip»

RE: STORMWATER BEST MANAGEMENT PRACTICE (BMP) FACILITY MAINTENANCE  
«Plan\_Name», «BMP\_Address», «BMP\_City», «BMP\_State» «BMP\_Zip»

Certified Mail #

### **NOTICE OF CORRECTIVE ACTION REQUIRED**

Dear Facility Owner:

On **DATE**, a certified letter from the City of Alexandria was sent notifying you that the stormwater Best Management Practice (BMP) on the above-referenced property required maintenance and was out of compliance with the City's Environmental Management ordinance. The prior notification letter required you to contact the city within 30 days with a plan for maintenance and to perform all required maintenance within 90 days. As of today, the City has not received an adequate response to this letter.

**Documentation of maintenance must be received by this office within the timeframe provided below to avoid a notice of violation for noncompliance and the associated penalty fees.**

Section 13-109 of the Environmental Management Ordinance (Article XIII of the Alexandria Zoning Ordinance) requires the City of Alexandria to perform maintenance inspections of stormwater BMPs and ensure their proper function. Additionally, under Virginia Stormwater Management Program permit regulations (9VAC 25-870), the Virginia Department of Environmental Quality (DEQ) requires the City to ensure adequate long-term operation and maintenance of these BMPs by requiring the owner to develop a recorded inspection and maintenance schedule.

City Code Section 13-109(G) states that all stormwater BMPs must be adequately maintained by the property owners. This is also outlined in the BMP maintenance agreement executed between the owner (or site developer) and the City to ensure proper functioning and regular maintenance for the life of the

facility. This agreement is on file in our office, runs with the land as part of the recorded deed and is thus binding on subsequent landowners.

**The following observations were made during the inspection and require maintenance:**

**Plan name and Number**

- Comments

*Immediate maintenance is required to restore proper functioning of the facility. Perform maintenance of the facility and provide the below requested information.*

*Provide the following:*

- Within **30 days** from the date of this letter provide a written plan identifying applicable maintenance / corrective actions that will be taken. The plan may be submitted by mail, email, or fax.
- Perform maintenance / corrective actions within **60 days** of the date of this letter. Provide documentation of the work performed to this office. Documentation may be submitted by mail, email, or fax.

Please reference the Project # in your correspondence as listed at the beginning of this letter.

**Failure to provide the required information and/or perform the required BMP maintenance in the timeframe allowed may result in a notice of violation which carries penalties of up to \$32,500 per day per violation until the required maintenance has been completed.**

Your time and cooperation are greatly appreciated and will help to achieve our goal of protecting our streams, rivers and the Chesapeake Bay. Please contact me directly at 703-746-4071, via email, or via fax at 703-519-8354 if you have any questions, need additional information, or to submit the above requested information.

Thank you for your time and cooperation with regard to this matter.

Sincerely,

Water Quality Compliance Specialist

## Notice of noncompliance



*City of Alexandria, Virginia*  
Department of Transportation & Environmental Services  
Infrastructure and Environmental Quality  
2900-B Business Center Drive  
Alexandria, VA 22314  
www.alexandriava.gov

DATE

«Owner\_Name»

«Owner\_Address»

«Owner\_City», «Owner\_State» «Owner\_Zip»

RE: STORMWATER BEST MANAGEMENT PRACTICE (BMP) FACILITY MAINTENANCE  
«Plan\_Name», «BMP\_Address», «BMP\_City», «BMP\_State» «BMP\_Zip»

Certified Mail #

### **NOTICE OF NONCOMPLIANCE**

Dear Facility Owner:

On **DATE**, a certified letter from the City of Alexandria was sent notifying you that the stormwater Best Management Practice (BMP) on the above-referenced property required maintenance and was out of compliance with the City's Environmental Management Ordinance. A second notice of corrective action was sent on **DATE**. The prior notification letter required you to contact the city within 30 days with a plan for maintenance and to perform all required maintenance within 60 days. As of today, the City has not received an adequate response to this letter.

**You have 30 days from the date of this letter to either repair the BMPs or submit in writing a request for an extension. Failure to repair the BMPs or submit in writing for an extension shall result in the issuance of a NOTICE OF VIOLATION. Each notice of violation for failure to maintain a stormwater BMP may result in the assessment of a civil penalty of up to \$32,500 per day per violation until corrective action is completed.**

Section 13-109 of the Environmental Management Ordinance (Article XIII of the Alexandria Zoning Ordinance) requires the City of Alexandria to perform maintenance inspections of stormwater BMPs and ensure their proper function. Additionally, under Virginia Stormwater Management Program permit regulations (9VAC 25-870), the Department of Environmental Quality (DEQ) requires the City to ensure adequate long-term operation and maintenance of these BMPs by requiring the owner to develop a recorded inspection and maintenance schedule.

City Code Section 13-109(G) states that all stormwater BMPs must be adequately maintained by the property owners. This is also outlined in the BMP maintenance agreement executed between the owner (or site developer) and the City to ensure proper functioning and regular maintenance for the life of the facility. This agreement is on file in our office, runs with the land as part of the recorded deed and is thus binding on subsequent landowners.

**The following observations were made during the inspection and require maintenance:**

**Plan Number and Name**

- Comments

*Immediate maintenance is required to restore proper functioning of the facility.*

Your time and cooperation are greatly appreciated and will help to achieve our goal of protecting our streams, rivers and the Chesapeake Bay. Please contact **NAME** in the Office of Environmental Quality directly at 703-746-4071, via email, or by fax at 703-519-8354 if you have any questions, need additional information, or to submit the above requested information.

Thank you for your time and cooperation with regard to this matter.

Sincerely,

Division Chief  
TES/Infrastructure and Environmental Quality

CC: , Water Quality Compliance Specialist  
    , Stormwater Section Lead  
    , Deputy Director of Transportation and Environmental Services  
    , Director of Transportation and Environmental Services  
    , Deputy City Attorney

## Notice of Violation

DATE

«Owner\_Name»

«Owner\_Address»

«Owner\_City», «Owner\_State» «Owner\_Zip»

RE: STORMWATER BEST MANAGEMENT PRACTICE (BMP) FACILITY MAINTENANCE  
«Plan\_Name», «BMP\_Address», «BMP\_City», «BMP\_State» «BMP\_Zip»

## NOTICE OF VIOLATION

Dear Facility Owner:

On **DATE**, a certified letter from the City of Alexandria was sent notifying you that the stormwater Best Management Practice (BMP) on the above-referenced property required maintenance and was out of compliance with the City's Environmental Management ordinance. A second notice of corrective action was sent on **DATE**. A final notice of noncompliance was sent on **DATE**.

Due to failure to respond to multiple notices by the City and/or to repair the above-reference BMP, you are hereby served a **NOTICE OF VIOLATION for failure to maintain a BMP and violation of the City's Environmental Management Ordinance**. City Code Section 13-109(G) states that all stormwater BMPs must be adequately maintained by their owners. This is also set forth in the BMP maintenance agreement executed between the site developer and the City to ensure proper functioning and regular maintenance for the life of the facility. This agreement is on file in our office, runs with the land as part of the recorded deed and is thus binding on subsequent landowners.

**You will be assessed a civil penalty of \$500 per day per violation beginning **DATE** until the corrective actions below are completed.**

**The following maintenance items are required to bring your BMP into compliance:**

### **Plan Number and Name**

- Comments

This office will pursue collection of the civil penalty through prosecution in the appropriate court. Additionally, the city may perform the necessary corrections and bill the property owner.

Your time and cooperation are greatly appreciated and will help to achieve our goal of protecting our streams, rivers and the Chesapeake Bay. Please contact **NAME** in Infrastructure and Environmental Quality directly at 703-746-4071, via email at **email**, or by fax at 703-519-8354 if you have any questions about the BMP corrective measures. Please contact me with any questions about the scope and nature of the impending legal proceedings.

Please let me know if you have any questions.

Yours very truly,

Deputy City Attorney

CC: , Water Quality Compliance Specialist  
, Stormwater Section Lead  
, Deputy Director of Transportation and Environmental Services  
, Director of Transportation and Environmental Services

## APPENDIX F. DOCUMENTS RELATED TO MCM#6, DAILY OPERATIONS AND MAINTENANCE, HIGH PRIORITY FACILITIES

### A. IDENTIFIED LOCATIONS REQUIRING STORM WATER POLLUTION PREVENTION PLANS (SWPPPS)

Section II.B.6 .b.1 of the City's *General Permit for Discharges from Small Municipal Separate Storm Sewer Systems* (General Permit No. VAR040057) requires the identification of all municipal high-priority facilities, including: (i) composting facilities, (ii) equipment storage and maintenance facilities, (iii) materials storage yards, (iv) pesticide storage facilities, (v) public works yards, (vi) recycling facilities, (vii) salt storage facilities, (viii) solid waste handling and transfer facilities, and (ix) vehicle storage and maintenance yards. These facilities are listed in Table F-1.

**Table F-1. List of Municipal High-Priority Facilities**

Street Address	Facility	Site Activity
<b>Transportation and Environmental Services</b> <i>Maintenance Division and Solid Waste &amp; Recycling Division</i>		
2900 Business Center Drive	Field Operations Center	Vehicle & Material Storage
133 South Quaker Lane	Equipment and Materials Storage	Vehicle, Material & Equipment Storage
Across from 133 South Quaker Lane	Lower Property Yard	Material & Waste Storage
3224 Colvin Street	Household Hazardous Waste (HHW)	Waste Storage & Transfer
5249 Eisenhower Avenue	Transportation Division Impound Lot	Vehicle Storage
<i>Street Sweeping and Leaf Collection</i>		
4125 Eisenhower Avenue	Composting Facility	Material Storage
3220 Colvin Street	Transportation Division Sign Shop	Material, Waste and Equipment Storage
<b>General Services</b> <i>Fleet Services Division</i>		
3550 Wheeler Avenue	Fueling Station	Vehicle Fueling & Fuel Transfer
133 South Quaker Lane & Wheeler Avenue	Vehicle & Equipment Maintenance Center	Vehicle Maintenance & Materials Storage
3000 Business Center Drive	Impound Lot	Vehicle Storage
<b>Recreation, Parks and Cultural Activities</b> <i>Park Operations and Natural Resources Divisions</i>		
2900 Business Center Drive	Field Operations Center	Vehicle, Equipment and Material Storage

Street Address	Facility	Site Activity
133 South Quaker Lane	Equipment and Materials Storage	Equipment and Materials Storage
Across from 133 South Quaker Lane	Lower Property Yard	Material & Waste Storage
910 South Payne Street	Horticultural Center	Material & Equipment Storage
4200 Eisenhower Avenue	Joseph Hensley Park	Material & Equipment Storage
4800 Duke Street	Ben Brenman Park	Material & Equipment Storage
426 East Monroe Street	Simpson Park	Material & Equipment Storage
3700 Commonwealth Avenue	Four Mile Run Park	Material & Equipment Storage
<b>Alexandria Fire Department</b>		
133 South Quaker Lane & Wheeler Avenue	Vehicle Maintenance Bay	Vehicle Maintenance & Material Storage
900 Second Street	Fire Station 204 (HQ)	Material Storage
213 East Windsor Avenue	Fire Station 202	Material Storage
4609 Seminary Road	Fire Station 206	Material Storage
175 North Paxton Street	Fire Station 208	Material Storage
1108 Jefferson Street	Nannie J. Lee Center	Vehicle Cleaning & Equipment Storage
<b>Animal Welfare League</b>		
4101 Eisenhower Avenue	Vola Lawson Animal Shelter	Equipment Storage & Washing

## B. IDENTIFIED LOCATIONS REQUIRING STORM WATER POLLUTION PREVENTION PLANS (SWPPPS)

Section II.B.6 .b.2 of the City’s MS4 permit requires the identification those facilities (from Table F-1) that have a “high potential of discharging pollutants.” These facilities will require SWPPPS to be developed by the end of PY4, and specifically include facilities identified Table F-1 that are not covered under a separate VPDES permit and at which any of the following materials or activities occur and are expected to have exposure to stormwater resulting from rain, snow, snowmelt or runoff are to be listed:

- (a) Areas where residuals from using, storing or cleaning machinery or equipment remain and are exposed to stormwater;
- (b) Materials or residuals on the ground or in stormwater inlets from spills or leaks;
- (c) Material handling equipment (except adequately maintained vehicles);
- (d) Materials or products that would be expected to be mobilized in stormwater runoff during loading/unloading or transporting activities (e.g., rock, salt, fill dirt);
- (e) Materials or products stored outdoors (except final products intended for outside use where exposure to stormwater does not result in the discharge of pollutants);

- (f) Materials or products that would be expected to be mobilized in stormwater runoff contained in open, deteriorated or leaking storage drums, barrels, tanks, and similar containers;
- (g) Waste material except waste in covered, non-leaking containers (e.g., dumpsters);
- (h) Application or disposal of process wastewater (unless otherwise permitted); or
- (i) Particulate matter or visible deposits of residuals from roof stacks, vents or both not otherwise regulated (i.e., under an air quality control permit) and evident in the stormwater runoff.

These qualifying facilities are listed in Table F-2.

**Table F-2. High Priority Municipal Facilities Requiring SWPPPs**

Street Address	Facility	Site Activity
<b>Transportation and Environmental Services</b> <i>Maintenance Division and Solid Waste &amp; Recycling Division</i>		
2900 Business Center Drive	Field Operations Center	Vehicle & Material Storage
133 South Quaker Lane	Equipment and Materials Storage	Vehicle, Material & Equipment Storage
Across from 133 South Quaker Lane	Lower Property Yard	Material & Waste Storage
3224 Colvin Street	Household Hazardous Waste (HHW)	Waste Storage & Transfer
5249 Eisenhower Avenue	Transportation Division Impound Lot	Vehicle Storage
<i>Street Sweeping and Leaf Collection</i>		
4125 Eisenhower Avenue	Composting Facility	Material Storage
3220 Colvin Street	Transportation Division Sign Shop	Material, Waste and Equipment Storage
<b>General Services</b> <i>Fleet Services Division</i>		
3550 Wheeler Avenue	Fueling Station	Vehicle Fueling & Fuel Transfer
133 South Quaker Lane & Wheeler Avenue	Vehicle & Equipment Maintenance Center	Vehicle Maintenance & Materials Storage
3000 Business Center Drive	Impound Lot	Vehicle Storage
<b>Recreation, Parks and Cultural Activities</b> <i>Park Operations and Natural Resources Divisions</i>		
2900 Business Center Drive	Field Operations Center	Vehicle, Equipment and Material Storage
133 South Quaker Lane	Equipment and Materials Storage	Equipment and Materials Storage
Across from 133 South Quaker Lane	Lower Property Yard	Material & Waste Storage
910 South Payne Street	Horticultural Center	Material & Equipment Storage
4200 Eisenhower Avenue	Joseph Hensley Park	Material & Equipment Storage
4800 Duke Street	Ben Brenman Park	Material & Equipment Storage
426 East Monroe Street	Simpson Park	Material & Equipment Storage

Street Address	Facility	Site Activity
3700 Commonwealth Avenue	Four Mile Run Park	Material & Equipment Storage
<b>Alexandria Fire Department</b>		
133 South Quaker Lane & Wheeler Avenue	Vehicle Maintenance Bay	Vehicle Maintenance & Material Storage
1108 Jefferson Street	Nannie J. Lee Center	Vehicle Cleaning & Equipment Storage
<b>Animal Welfare League</b>		
4101 Eisenhower Avenue	Vola Lawson Animal Shelter	Equipment Storage & Washing

### C. SWPPP DEVELOPMENT SCHEDULE AND LOCATIONS

All SWPPPs must be prepared and implemented by the end of PY4. Section II.B.6.f of the City’s MS4 General Permit requires the SWPPPs to be incorporated (by reference) into this Program Plan, along with the schedule for their development and the physical location where each SWPPP may be reviewed. Table F-3 lists these locations and dates.

**Table F-3. SWPPP Development Schedule and Locations**

Street Address	Facility	SWPPP Location	SWPPP Completed
<b>Transportation and Environmental Services</b> <i>Maintenance Division and Solid Waste &amp; Recycling Division</i>			
2900 Business Center Drive	Field Operations Center	TBD	To be completed by PY4
133 South Quaker Lane	Equipment and Materials Storage	TBD	To be completed by PY4
Across from 133 South Quaker Lane	Lower Property Yard	TBD	To be completed by PY4
3224 Colvin Street	Household Hazardous Waste (HHW)	TBD	To be completed by PY4
5249 Eisenhower Avenue	Transportation Division Impound Lot	TBD	To be completed by PY4
<b>Street Sweeping and Leaf Collection</b>			
4125 Eisenhower Avenue	Composting Facility	TBD	To be completed by PY4
3220 Colvin Street	Transportation Division Sign Shop	TBD	To be completed by PY4
<b>General Services</b> <i>Fleet Services Division</i>			
3550 Wheeler Avenue	Fueling Station	TBD	To be completed by PY4
133 South Quaker Lane & Wheeler Avenue	Vehicle & Equipment Maintenance Center	TBD	To be completed by PY4
3000 Business Center Drive	Impound Lot	TBD	To be completed by PY4
<b>Recreation, Parks and Cultural Activities</b> <i>Park Operations and Natural Resources Divisions</i>			
2900 Business Center Drive	Field Operations Center	TBD	To be completed by PY4

Street Address	Facility	SWPPP Location	SWPPP Completed
133 South Quaker Lane	Equipment and Materials Storage	TBD	To be completed by PY4
Across from 133 South Quaker Lane	Lower Property Yard	TBD	To be completed by PY4
910 South Payne Street	Horticultural Center	TBD	To be completed by PY4
4200 Eisenhower Avenue	Joseph Hensley Park	TBD	To be completed by PY4
4800 Duke Street	Ben Brenman Park	TBD	To be completed by PY4
426 East Monroe Street	Simpson Park	TBD	To be completed by PY4
3700 Commonwealth Avenue	Four Mile Run Park	TBD	To be completed by PY4
<b>Alexandria Fire Department</b>			
133 South Quaker Lane & Wheeler Avenue	Vehicle Maintenance Bay	TBD	To be completed by PY4
1108 Jefferson Street	Nannie J. Lee Center	TBD	To be completed by PY4
<b>Animal Welfare League</b>			
4101 Eisenhower Avenue	Vola Lawson Animal Shelter	TBD	To be completed by PY4

## D. DAILY OPERATIONS AND MAINTENANCE POLICIES AND PROCEDURES

This section will contain the documented daily operations and maintenance policies and procedures for pollution prevention and good housekeeping, as required by Sections II.B.6.a & f of the City's MS4 General Permit.

## APPENDIX G. TURF AND LANDSCAPE MANAGEMENT

### A. IDENTIFIED LOCATIONS REQUIRING NUTRIENT MANAGEMENT PLANS (NMPs)

The following City properties have been identified as locations where nutrients are applied to a contiguous area of more than one acre. Per Section II.B.6.c of the City's *General Permit for Discharges from Small Municipal Separate Storm Sewer Systems* (General Permit No. VAR040057) the City must develop NMPs for these properties by the end of PY2. The Annual Reports must include the latitude and longitude for each of these land pieces.

**Table G-1. City Properties Requiring Nutrient Management Plans**

Street Address	Facility	Latitude, Longitude
4200 Eisenhower Avenue	Joseph Hensley Park	38°48'12"N, 77° 6'29"W
4800 Duke Street	Ben Brenman Park	38°48'30"N, 77° 6'52"W
426 East Monroe Street	Simpson Park	38°49'18"N, 77° 3'4"W
3700 Commonwealth Avenue	Four Mile Run Park	38°50'24"N, 77° 3'34"W
1A Prince Street	Waterfront Park	38°48'12"N, 77° 2'21"W
351 North Union Street	Founders Park	38°48'27"N, 77° 2'20"W
501 South Union Street	Windmill Hill Park	38°47'58"N, 77° 2'30"W
2 Montgomery Street	Rivergate Park	38°48'46"N, 77° 2'17"W
200 Montgomery Street	Montgomery Park	38°48'51"N, 77° 2'27"W
100 Madison Street	Oronoco Bay Park	38°48'40"N, 77° 2'23"W
1001 Jefferson Street	Miracle Field	38°47'53"N, 77° 3'10"W
2501 Potomac Avenue	Potomac Yard Park	38°49'43"N, 77° 2'51"W
1426 Janneys Lane	President Gerald Ford Park	38°49'1"N, 77° 5'20"W

### B. COMPLETED NUTRIENT MANAGEMENT PLANS

This section of Appendix G will contain the NMPs prepared by the City in accordance with Sections II.B.6.a & f of the City's MS4 General Permit. These plans must be completed by the end of PY2.



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