

City of Richmond

Municipal Separate Storm Sewer System

2010 - 2011 Annual Report

Introduction

This annual report covers the reporting cycle July 1, 2010 through June 30, 2011 - Permit Year 3. The report includes the status of compliance with the permit conditions, the appropriateness of the best management practices to meet the measurable goals of the program plan, and the reporting requirements of the general permit.

Roles and responsibilities described in the program plan have not changed during this reporting period. DPU administers all aspects of stormwater management including operation and maintenance, design, construction, and regulatory compliance. No new Municipal Separate Storm Sewer System (MS4) outfalls were constructed during this reporting period.

The status of the MS4 program plan and a summary of the activities planned for the next reporting cycle are found in the following sections. Modifications to Best Management Practices (BMPs) 5.1 and 5.2 are proposed during this reporting cycle. The Virginia Soil and Water Conservation Board adopted final regulations for Parts I, II and III of the stormwater management regulations on May 24, 2011. The Department has initiated the executive review process. These BMPs will incorporate the state stormwater regulations into the City's stormwater program.

The City purchased a commercial MS4 Permit Manager web-based software system to manage the MS4 program data. The database will track compliance with BMPs and produce the Annual Report. We anticipate having the system fully populated and operational in time for the 2011-2012 Annual Report.

The City of Richmond does not rely on another government entity to satisfy any of the permit obligations.

Monitoring data collected during this reporting cycle from Reedy Creek is included in Attachment (A). The City investigated eleven potential illicit discharges during this reporting cycle. The illicit discharges and corresponding corrective actions are documented in Attachment (B).

Land disturbing activities during the reporting cycle included 141 permits issued and 144.762 acres of land disturbance.

A full inventory of structural controls located within the City is included in Attachment (C). New structural controls placed in operation during the reporting cycle are listed in Attachment (D).

MS4 Program Plan Compliance Status

1.0 Program Management

Description

As DPU incorporates stormwater management into the department's responsibilities, each BMP will be evaluated for appropriateness and updated as necessary. Additionally, each BMP will be evaluated and revised as needed to comply with the changes to the revised permit regulations. The objective of this BMP is to provide an evaluation tool for the stormwater management program to be more effective in reducing nonpoint source pollution from the MS4.

Measurable Goal

In permit year 1, DPU successfully initiated a stormwater utility. DPU is currently updating the program plan to comply with the revised MS4 permit regulations, 4VAC50-60 Part XV.

In permit year 3, DPU began to evaluate the program needs and will implement the findings in years 4 through 5.

Schedule of Activities for Next Reporting Cycle

In permit years 4 through 5, DPU will incorporate stormwater management into department responsibilities and continue to assess the MS4 Program Plan to determine if proposed BMPs are effective in reducing pollution discharges from the MS4.

1.1 Stormwater Public Education



EPA Administrator Jackson and Maryland Governor O'Malley check out DPU's Pet Waste Program materials at the Chesapeake Bay Executive Meeting in Richmond, July 2011.

Description

DPU manages public education for stormwater as well as the wastewater, water, and gas utilities. Our objective is to provide an educational resource for residents on stormwater

runoff and how they can help improve water quality of receiving waters in Richmond.

Measurable Goal

In permit year 1, the City continued participation in the Chesapeake Club. Additionally, the City developed a semi-annual stormwater management newsletter.

In permit year 2, the City incorporated stormwater management information in the quarterly newsletter "Clean Streams", included in utility bills.

In permit year 3, the Utility held several public meetings to educate citizens regarding the stormwater utility and its programs and benefits. The Utility also participated in several public events as an educational opportunity. The Utility will also incorporate stormwater information into DPU's Large Volume Customer meeting. The Utility continues to participate in the Chesapeake Club, which this year sponsored a campaign to encourage more planting of native plants. **Plant More Plants** provided a website address that we posted on the DPU Stormwater website and a Plant More Plants article was posted on the DPU blog.

Schedule of Activities for Next Reporting Cycle

In permit year 4, DPU will evaluate resources, including staffing and budgeting, to ensure DPU has adequate support to maintain a public outreach program.

2.1 Stormwater Public Involvement



Volunteers at the Bellemeade Creek Clean-up April 9 2011

Description

DPU maintains a stormwater management website to make information on the stormwater management program readily available for City residents. The objective of this BMP is to be a tool to promote public involvement in preventing pollution of stormwater runoff.

Measurable Goal

The City added a Stormwater page to its website and posted the MS4 Program Plan and 2010 Annual report along with FAQ's and links to other information to support the stormwater utility.

In addition to the website, DPU worked with the Department of Parks, Recreation & Community Facilities to install pet waste disposal bag stations in several City parks. **Citizens used** approximately 20,500 baggies during the permit year at 28 dispensers. The program was successful in educating the public to clean up pet waste and DPU

plans to continue to help providing bags at each location.

During permit year 2, the City participated in a citizen led effort to monitor water quality in Reedy Creek by analyzing the samples at its Wastewater Treatment Plant Laboratory. This effort will continue throughout 2009 - 2010.

In permit year 3 DPU maintained the stormwater management website, in addition to collaborating with the Reedy Creek Coalition and Alliance for the Chesapeake Bay to monitor water quality in Reedy Creek.

Schedule of Activities for Next Reporting Cycle

In permit years 4 and 5, DPU will maintain the stormwater management website, in addition to collaborating with Richmond Public Schools on an educational project and Richmond Animal Rescue groups in a pet waste pick-up educational project.

Industrial Pre-treatment Permit Holders Award Ceremony

DPU inspects industrial waste & pretreatment permittees annually for compliance. An awards ceremony is held every two years to recognize permittees who remain in compliance and who are environmental stewards.

Measurable Goal

The next awards program is in spring 2012.

3.1 Storm Sewer System Inventory



Map from MS4web showing stormwater outfalls along Broad Rock Creek, Winter 2010

Description

DPU has a GIS inventory of the storm sewer system including pipes, ditches, outfalls, structural controls and other storm sewer infrastructure. The objective is to develop a method to update and maintain the City's storm sewer system GIS inventory.

Measurable Goal

DPU prepared a departmental procedure to identify roles and responsibilities for

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updating and maintaining GIS information needed to support the stormwater utility. This information includes parcels, impervious areas, and storm sewer infrastructure. The procedure is available for review by clicking [here](#). DPU has developed a baseline inventory of the storm sewer system. Additionally, DPU has determined 23 downstream regulated MS4s that connect to the City's MS4s.

In permit year 2, DPU hired a consultant to begin updating the remaining storm sewer system. The storm sewer system inventory will be completed in permit year 3.

In permit year 3, DPU continued working on field locating the remaining storm sewer system as necessary and implementing the procedure developed in permit year 1.

Schedule of Activities for Next Reporting Cycle

In permit year 4, DPU will continue to update and maintain the storm sewer system inventory and evaluate the progress in updating this information.

3.2 Illicit Discharge Detection and Elimination



View of Illicit discharge to Jordan's Branch at Car Wash facility on West Broad St. April 2011.

Description

DPU has a process to investigate and reduce illicit discharges through the industrial pretreatment program and the Community Assisted Public Safety (CAPS) program. The objective of this BMP is to reduce illicit discharges to the MS4.

Measurable Goal

In permit year 1, DPU collected baseline chemical and biological information for five of the initial nine major tributary outfalls to the James River. In addition, DPU developed an illicit discharge ordinance, an enforcement guide, and a spill response checklist to better define authority, regulation, and enforcement.

A list of illicit discharges investigated in 2010 - 2011 is in Appendix B.

Schedule of Activities for Next Reporting Cycle

Throughout the permit term, DPU will continue to investigate and eliminate illicit discharges through the Industrial Waste & Pretreatment and CAPS programs.

3.3 DPU Inspector Training and Education Program

Description

DPU IWP inspectors conduct annual inspections of the industrial pretreatment permit holders. The objective of this BMP is to make sure DPU inspectors are educated in the procedures of illicit discharge inspections.

Measurable Goal

In permit year 1, DPU developed an enforcement guide for staff involved with the pretreatment program. No new activities were completed in permit year 2.

In permit years 3 DPU implemented a training program using the enforcement guide.

Schedule of Activities for Next Reporting Cycle

In permit years 4 and 5, DPU will continue to implement our training program using the enforcement guide.

4.1 Erosion and Sediment Control Program

Description

The Department of Public Utilities assumed management of the City's erosion and sediment control program in 2009 from the Department of Community Development (DCD). The objective is to administer an erosion and sediment control program in accordance with the Virginia Erosion and Sediment Control Regulations, Section 4VAC50-30.

Measurable Goal

In permit year one DCD/DPU worked to bring the erosion and sediment control program into compliance with DCR requirements by updating the City's erosion and sediment control ordinance. DPU became fully compliant during the permit year. Additionally DPU evaluated the requirements to convert outdated HUC codes to VAHU6 codes in the Cornerstone database.

In permit year 2, DPU incorporated VAHU6 codes into the Cornerstone database.

In permit year 3, DPU was ready to incorporate new program components and training to comply with VSMP construction permits whenever the State VSMP Construction Permit regulations are adopted.

Schedule of Activities for Next Reporting Cycle

During permit years 4 and 5, DPU will incorporate new program components to comply with VSMP construction permits when the State VSMP Construction Permit regulations are adopted. DPU will continue to manage the ESC program.

4.2 Erosion and Sediment Control Design Standards

Description

DPU reviews construction plans and erosion and sediment control plans for compliance with the City's erosion and sediment control ordinance. The objective is to minimize the impact of land-disturbing activities on receiving waters.

Measurable Goal

The City continues to maintain DCR erosion and sediment control certifications for all plan review staff. Additionally, DPU developed and implemented a standard erosion and sediment control checklist for plan review. The Checklist is available on line on the City's website by clicking [Erosion & Sediment Control Checklist](#).

In addition, DPU also published a Design and Construction Standards Manual, which can be found on the City's website by clicking [Design & Construction Standards Manual](#). DPU also reviewed work force requirements to ensure the program staff levels are appropriate.

Schedule of Activities for Next Reporting Cycle

In permit years 4 and 5, DPU will continue to review erosion and sediment control plans in accordance with the erosion and sediment control ordinance.

4.3 Erosion & Sediment Control Inspection & Enforcement

Description

The City inspects all construction activities that have land disturbance permits. The objective is to ensure compliance with land disturbance permits in order to minimize the impact of land-disturbing activities on receiving waters.

Measurable Goal

The City continues to maintain DCR erosion and sediment control certifications for all inspection staff. Additionally, the City evaluated the inspection frequency and increased inspections for all land disturbance permits. The City also began documenting inspections with paper inspection checklists as well as notes in Cornerstone.

Schedule of Activities for Next Reporting Cycle

The City will continue to inspect land disturbing activities in accordance with the erosion and sediment control ordinance.

5.1 Stormwater Management Requirements

Description

The City requires structural BMPs for land development projects located within a RMA in accordance with the Chesapeake Bay Program. DPU is developing and will implement a stormwater management program to manage the VSMP Construction Permit authority now that the revisions to the state regulations, 4VAC50-60 Parts I, II, IN and XIII, are final. The objective is to reduce the impact of new development and redevelopment on receiving waters.

Measurable Goal

In permit years 1 and 2, DPU continued to track the draft state stormwater regulations. This goal will take effect once the new state regulations, 4VAC50-60 Parts I, II, IN, and XIII, have become final. DPU will continue to monitor the regulations and implement the stormwater management program in accordance with DCR's schedule.

Schedule of Activities for Next Reporting Cycle

DPU will implement the City's VSMP construction permit program when DCR provides the schedule.

5.2 Stormwater Management Ordinance

Description

The city is in the process of developing a stormwater management ordinance to address post-construction runoff from new development and redevelopment to ensure compliance with the Virginia Stormwater Management Act. The ordinance will, at a minimum, provide technical criteria, procedures for submission and approval of plans, and will establish provisions and the authority for construction inspection, long-term inspection and maintenance, enforcement, and fee structures. Additionally, the ordinance will encourage the use of Low Impact Development techniques to reduce peak flows managed by the small MS4 in an effort to maintain or replicate pre-development runoff characteristics and site hydrology.

Measurable Goal

In permit year 2, DPU reviewed a proposed City Code chapter 106, specifically including a component to encourage the use of LID to maintain or replicate predevelopment runoff characteristics and site hydrology to meet existing VSMP permit requirements. Information on approved LID practices is on the Stormwater Credits page on the City's website - or click on [Stormwater Credit Manual](#).

DPU also created an implementation plan delegating authority to enforce compliance with the regulations. DPU is awaiting the adoption of the draft state stormwater regulations to complete this BMP.

5.3 Structural BMP Inventory

Description

DPU maintains a database and GIS inventory of all approved structural BMPs. The objective is to provide an inventory of all approved structural BMPs within the City.

Measurable Goal

In permit year 1, DPU evaluated the existing BMP database and GIS inventory for completeness and accuracy. Additionally, DPU reviewed development projects constructed between 2003 and 2008 for additional BMPs to add to the database. DPU prepared a departmental procedure to identify roles and responsibilities for updating and maintaining GIS information needed to support the stormwater utility including BMP information. An updated BMP list is in Attachment D.

In permit year 2, DPU evaluated the database for completeness and accuracy.

In permit year 3, DPU continues to gather any missing data as determined in permit year 2. A copy of the updated inventory is in Attachment C.

Schedule of Activities for Next Reporting Cycle

DPU will continue to maintain and update the BMP database and GIS inventory throughout the five-year permit term. In permit years 4 and 5, DPU will gather any missing data as determined in permit year 2.

5.4 BMP Inspection and Maintenance



Photo from June 2011 inspection of Extended Detention Pond at 233 Norcroft Terrace.

Description

DPU has a post-construction inspection & maintenance plan for City structural controls. Maintenance agreements are required for private BMPs. Our objective is to ensure proper function & maintenance of all structural controls to protect receiving waters.

Measurable Goal

In permit year 1, DPU evaluated existing BMP maintenance manuals that can be used to

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train DPU staff responsible for BMP inspection and maintenance.

In permit year 2, DPU provided BMP inspection and maintenance training for all stormwater operations staff. Additionally, DPU inspected and maintained City-owned BMPs as necessary.

In permit year 3, DPU developed an inspection program for all privately owned BMPs. Maintenance schedules and checklists were based on information from the BMP Clearinghouse and DCR. Checklists can be reviewed on the City's website by clicking [BMP Checklists](#).

Schedule of Activities for Next Reporting Cycle

DPU will continue to manage the BMP inspection and maintenance program throughout the five-year permit term.

6.1 Stormwater Management at City Facilities

Description

Satellite operation facilities exist for DPU, DPW, Parks & Recreation, and Schools. The objective of this BMP is to prevent pollution at operation facilities from entering the MS4.

Measurable Goal

In permit year 1, DPU developed an access database inventory of all City and schools facilities using GIS information. In addition to the measurable goal required for this BMP, the City of Richmond maintained compliance with the Combined Sewer Overflow Nine Minimum Controls.

In permit year 2, DPU evaluated the staff and resources needed to inspect City facilities through the pretreatment program.

In permit year 3, DPU began inspecting City facilities, concentrating on schools, vehicle maintenance facilities and waste transfer operations. Results of the inspections are stored in the MS4 web database. Follow-up inspections will occur. The inspection findings revealed a need for education and training of maintenance and facility staff. The Pretreatment & Communications staff is organizing training classes, which will be held in the fall of 2011.

Schedule of Activities for Next Reporting Cycle

In permit years 4 and 5, DPU will inspect permitted City facilities per the pretreatment permit program and continue the training classes for municipal staff.

6.2 Employee Pollution Prevention Training and Education

Description

DPU will implement an employee-training program for operations staff involved with

vehicle maintenance and field activities that may affect the MS4. The objective of this BMP is to provide pollution prevention training to City employees to inform them of proper practices to reduce the potential of pollutants entering the MS4.

Measurable Goal

In permit year 1, DPU purchased a DVD training course for stormwater pollution prevention. Additionally in permit year 2, DPU obtained the Department of Environmental Quality Environmental Excellence (E3) certification.

In permit 3, DPU implemented a training program for City employees at RPS and other City facilities.

Schedule of Activities for Next Reporting Cycle

In permit years 4 and 5, DPU will implement the stormwater pollution prevention-training course for City staff.