MS4 Annual Report

July 1, 2019 – June 30, 2020
Permit Number: VAR040075
In compliance with the Virginia Stormwater Management Program (VSMP) General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4)

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Introduction

The City of Harrisonburg is an independent city located in the Shenandoah Valley of the Commonwealth of Virginia and is surrounded by Rockingham County. The City is an operator of a Small Municipal Separate Storm Sewer System (MS4). A *municipal separate storm sewer* means "a conveyance or system of conveyances otherwise known as a municipal separate storm sewer system, including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains:

1. Owned or operated by a federal, state, city, town, county, district, association, or other public body, created by or pursuant to state law, having jurisdiction or delegated authority for erosion and sediment control and stormwater management, or a designated and approved management agency under § 208 of the CWA that discharges to surface waters;
2. Designed or used for collecting or conveying stormwater;
3. That is not a combined sewer; and
4. That is not part of a publicly owned treatment works."

The US Census in 2010 determined the City's population to be 48,914, that the City is within an Urbanized Area, and thus subject to the amended and reissued General VPDES Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems, which became effective November 1, 2018 and will expire on October 31, 2023 when a new permit cycle is expected to become effective.

The MS4 Permit requires the City to develop an MS4 Program Plan and to submit Annual Reports (this document), for each period between July 1 through June 30. Modifications to the MS4 Program Plan are expected throughout the life of the permit as part of the iterative process to reduce pollutant loadings and to protect water quality. The City's MS4 Program Plan and Annual Reports available on the City's Stormwater webpages: http://www.harrisonburgva.gov/stormwater-management-program.

Additional information on the laws and regulations affecting the City and its operation of an MS4 can be found in:

- Virginia Stormwater Management Act, Article 2.3 (§62.1-44.15-24 et seq.) of Chapter 3.1 of Title 62.1 of the Code of Virginia
- Virginia Administrative Code, 9VAC25-870, Virginia Stormwater Management Program (VSMP) Regulations
- Virginia Administrative Code, 9VAC25-890-40, General VPDES Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems
- Virginia Department of Environmental Quality, Municipal Separate Storm Sewer Systems, http://www.deq.virginia.gov/Programs/Water/StormwaterManagement/VSMPPermits/MS4Permits.aspx

Watersheds

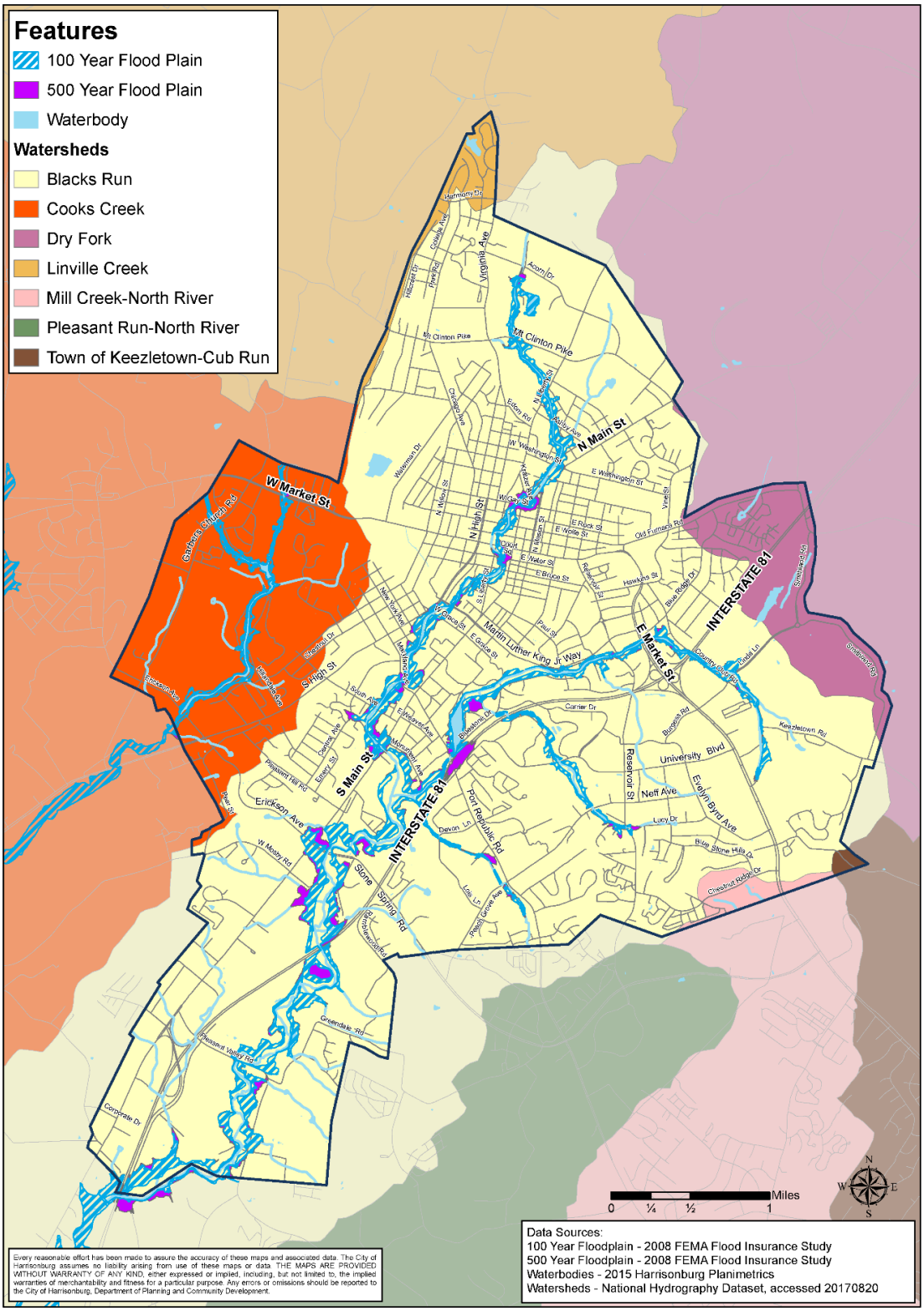
The City of Harrisonburg's 17.4 square miles is highly urbanized with substantial amounts of impervious surface. The following table describes approximate stream length, drainage areas, and impairments for each watershed within Harrisonburg city limits.

Table 1. Subwatersheds in Harrisonburg

Subwatershed Name	Hydrologic Unit Code (HUC)	Approximate Length (miles) within Harrisonburg	Approximate Drainage Area (acres)	Impairments	TMDL WLA?
Blacks Run ***(flows into Cooks Creek)***	PS22	8.67	9067	Fecal Coliform, Sediment, Total Phosphorus	*Yes, 2019*[1]
Sunset Heights Branch of Cooks Creek	PS23	2.09	1347.58	Fecal Coliform, Sediment, Total Phosphorus	*Yes, 2019*[2]
Dry Fork ***(flows into Smith Creek)***	PS59	0.206	493	E. Coli, Sediment	*Yes, 2004*
North River-Mill Creek	PS26	No stream	87.44	E. Coli	No
Cub Run ***(flows into South Fork of Shenandoah River)***	PS33	No stream	14.75	E. Coli	No
Linville Creek ***(flows into North Fork of Shenandoah River)***	PS56	0.08	117.8	E. Coli, Sediment	No

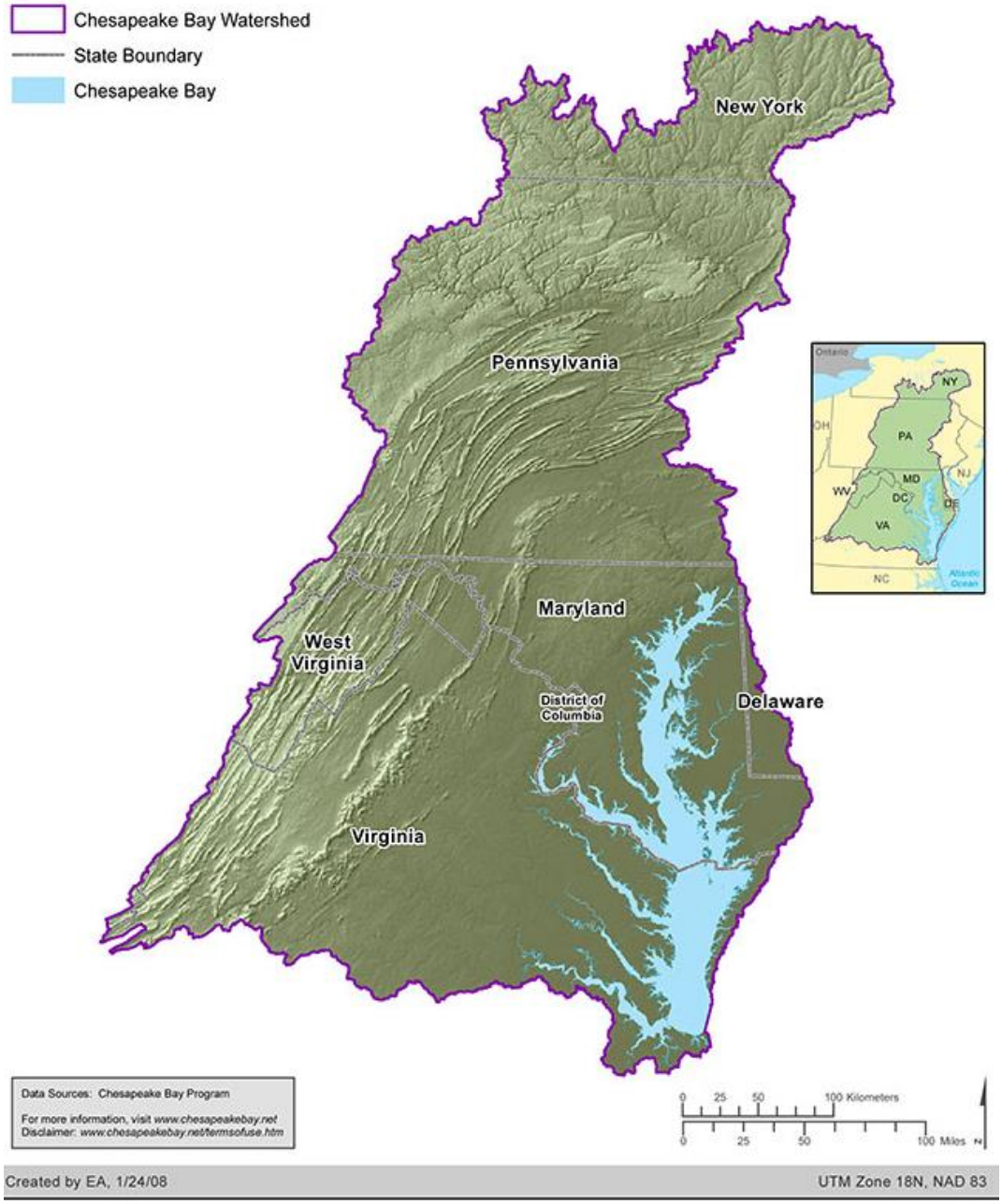
[1, 2] The revision of the Blacks Run and Cooks Creek Watershed TMDL includes a WLA. This TMDL was approved by the EPA on July 10, 2019 and so a local TMDL Action Plan will not be developed for this permit cycle.

Figure 1. Subwatersheds in Harrisonburg



The City of Harrisonburg also drains into the Chesapeake Bay Watershed. The Chesapeake Bay Watershed is 64,000 square miles and includes portions of New York, Pennsylvania, Delaware, Maryland, West Virginia, and Virginia. Altogether, more than 100,000 streams, creeks and rivers make up the Chesapeake Bay Watershed. As part of the Special Conditions for the Chesapeake Bay TMDL, the MS4 Permit requires the City of Harrisonburg to address impairments for phosphorus, nitrogen, and sediment that enter the Chesapeake Bay.

Figure 2. Chesapeake Bay Watershed Map



Roles and Responsibilities

The City of Harrisonburg's Public Works Department coordinates the City's municipal separate storm sewer system (MS4) program. The Public Works Department's Environmental Compliance Manager is responsible for developing and updating the MS4 Program Plan and submitting Annual Reports. The City Manager is responsible for providing the appropriate certification for documents. The Department of Community Development, Department of Public Utilities, the Department of Parks and Recreation, Police Department and Fire Department are the major contributors to Harrisonburg's MS4 Program although it is recognized that this is a citywide and community-wide program.

For MS4 Permit coverage, Harrisonburg City Public Schools (HCPS) and Harrisonburg Electric Commission (HEC) are covered by the City of Harrisonburg's MS4 Permit and their responsibilities are referenced throughout the MS4 Program Plan and associated Annual Reports.

Contact Information

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	Harrisonburg, Virginia 22801
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MS4 Annual Report

The MS4 Annual Report details the City of Harrisonburg's stormwater program to manage the quality of stormwater runoff discharged from the MS4.

Evaluations gathered while developing the 2019-2020 MS4 Annual Report will be considered during the minimum control measure evaluations throughout the document as well as in the MS4 Program Plan. This report and subsequent annual reports from the five year permit cycle will remain on file in the Public Works Department and on Harrisonburg's stormwater webpage: www.harrisonburgva.gov/stormwater-management-program.

Minimum Control Measure #1: Public Education & Outreach

BMP 1.1: Develop and Implement a Public Education and Outreach Program

Description

The City will implement a public education and outreach program designed to:

- Increase the public's knowledge of how to reduce stormwater pollution, placing priority on reducing impacts to impaired waters and other local water pollution concerns.
- Increase the public's knowledge of hazards associated with illegal discharges and improper disposal of waste, including pertinent legal implications.
- Implement a diverse program with strategies that are targeted toward individuals or groups most likely to have significant stormwater impacts.

The City will identify no less than three high-priority stormwater issues to meet the goal of educating the public. The high-priority public education and outreach program will:

- Clearly identify the high-priority stormwater issues.
- Explain the importance of the high-priority stormwater issues.
- Include measures or actions the public can take to minimize the impact of the high-priority stormwater issues.
- Provide a contact name and telephone number or location where the public can find out more information.

Annual Reporting Requirements

- A list of the high-priority stormwater issues the City addressed in the public education and outreach program.
- A list of the strategies used to communicate each high-priority stormwater issue.

List of High Priority Stormwater Issues

High Priority Stormwater Issue 1: Chesapeake Bay Nutrients

Strategy 1: Traditional Written Materials

- Stormwater and Environmental Newsletters: This email newsletter has a subscription list of around 700 contacts and each newsletter is opened by around 40-50% of the subscription list.
  - *Leaf Collection Begins*. October 2019
  - *Are you going to eat that?* November 2019
  - *Stormwater Utility Fees and You*. January 2020
  - *Do you want to be a grasscycler*? May 2020
- Press Release: City press releases are posted on the City's webpage and are often picked up by local news outlets who share or report on the contents.
  - *Bioreactor to Support Local Water Quality*. July 30,2019
  - *City reminds residents to keep liquids out of trash*. September 25, 2019
- Harrisonburg Stormwater Facebook Page: The Harrisonburg Stormwater Facebook page promotes high-quality receiving waters, education about the Chesapeake Bay and local TMDLs, and information about local events and projects. During this permit year, 184

posts were made to the Harrisonburg Stormwater Facebook page. Each post reached an average of 298 people.

Strategy 2: Media Materials

- WHSV TV-3 Reports
- Due to COVID-19, news cycles were dominated by stories related to the pandemic and the ability to generate news headlines regarding stormwater issues was partially limited.

Strategy 3: Speaking Engagements

- All speaking engagements attended by stormwater staff are focused on explaining water quality, including TMDLs, as well as Harrisonburg's role in meeting the Chesapeake Bay TMDL. Staff attended 2 educational events and reached an audience of approximately 72 participants. These speaking engagements do not include Blacks Run Clean Up Day, Middle School Watershed Field Trips, or the annual rain barrel workshop as these events are counted as Public Involvement Activities. Our traditional reach through speaking engagements was partially reduced this permit year due to COVID-19 restrictions that limited in-person meetings as well as school closures.

High Priority Stormwater Issue 2: High Quality Receiving Waters

Strategy 1: Traditional Written Materials

- Stormwater and Environmental Newsletters: This email newsletter has a subscription list of around 700 contacts and each newsletter is opened by around 40-50% of the subscription list.
  - *To Salt or Not To Salt*. December 2019
  - *Stormwater Utility Fees and You*. January 2020
  - *Do you want to be a grasscycler*? May 2020
- Press Release: City press releases are posted on the City's webpage and are often picked up by local news outlets who share or report on the contents.
  - *City's HCAP program selected for Alliance for Innovation honor*. November 12, 2019
- Harrisonburg Stormwater Facebook Page: The Harrisonburg Stormwater Facebook page promotes high-quality receiving waters, education about the Chesapeake Bay and local TMDLs, and information about local events and projects. During this permit year, 184 posts were made to the Harrisonburg Stormwater Facebook page. Each post reached an average of 298 people.

Strategy 2: Media Materials

- WHSV TV-3 Reports
  - WHSV TV-3 Article, by Autumn Childress: *Volunteer tree planting aims to improve tree canopy in Harrisonburg*. October 23, 2019 https://www.whsv.com/content/news/Volunteers-tree-planting-aims-to-improve-tree-canopy-in-Harrisonburg--563732681.html

- Daily News Record Articles
  - Daily News Record Article, by Lane Griffin: Council Approves Drainage Improvement Program. September 26, 2019. https://www.dnronline.com/news/harrisonburg/council-approves-drainage-improvement-program/article_aa3f2d3c-d8df-5991-9eec-bf821bcd8e30.html
  - Daily News Record Article, by Laine Griffin: *Stream Restoration Projects Underway*. November 8, 2019. https://www.dnronline.com/news/harrisonburg/stream-restoration-projects-underway/article_2da5acfd-5e34-515b-97f3-c06886c72782.html
- Due to COVID-19, news cycles were dominated by stories related to the pandemic and the ability to generate news headlines regarding stormwater issues was partially limited.

High Priority Stormwater Issue 3: Litter and Trash

Strategy 1: Traditional Written Materials

- Stormwater and Environmental Newsletters: This email newsletter has a subscription list of around 700 contacts and each newsletter is opened by around 40-50% of the subscription list.
  - *Leaf Collection Begins*. October 2019
  - *Are you going to eat that?* November 2019
  - *Do you want to be a grasscycler*? May 2020
- Press Release: City press releases are posted on the City's webpage and are often picked up by local news outlets who share or report on the contents.
  - *Blacks Run Clean Up Day.* February 2019.
  - *Should I Throw This in Blacks Run?* February 2019.
- Harrisonburg Stormwater Facebook Page: The Harrisonburg Stormwater Facebook page promotes high-quality receiving waters, education about the Chesapeake Bay and local TMDLs, and information about local events and projects. During this permit year, 184 posts were made to the Harrisonburg Stormwater Facebook page. Each post reached an average of 298 people.

Strategy 2: Media Materials

- Due to COVID-19, news cycles were dominated by stories related to the pandemic and the ability to generate news headlines regarding stormwater issues was partially limited.

Strategy 3: Alternative Materials

- Clean Up Supplies: Apart from the Blacks Run Clean Up Day event, 21 smaller clean ups were organized throughout the year with community groups, university students, and local businesses. Trash bags and trash grabbers were provided for these events.
- Water Bottles: Re-usable water bottles were given out to Blacks Run Clean Up Day participants. These bottles have the Blacks Run Clean Up Day logo on them. Due to COVID-

19 restrictions that limited in-person meetings we were not able to hold our annual Blacks Run Clean Up Day event.

BMP Effectiveness

Review of BMP: A wide variety of audiences was reached through this BMP and educated about the high-priority stormwater issues. Due to COVID 19 restrictions, some events were cancelled and some opportunities to engage with the community were limited.

Program Plan Revisions: Program Plan revisions were not necessary.

Minimum Control Measure #2: Public Involvement and Participation

BMP 2.1: Plan for, Respond to, and Document Public Input and Reports

Description

The City will develop and implement procedures for the following:

- The public to report potential illicit discharges, improper disposal, or spills to the MS4, complaints regarding land disturbing activities, or other potential stormwater pollution concerns.
- The public to provide input on the city's MS4 Program Plan.
- Receiving public input or complaints.
- Responding to public input received on the MS4 Program Plan or complaints.
- Maintaining documentation of public input received on the MS4 program and associated MS4 Program Plan and the city's response.

Annual Reporting Requirements

A summary of any public input on the MS4 program received and how the City responded.

Summary of Public Input

No public input on the MS4 program was received.

BMP Effectiveness

Review of BMP: The public can provide comments about the MS4 program and associated Program Plan as needed. Information about how to provide comments is listed on the stormwater webpage. The public can also attend the quarterly Stormwater Advisory Committee meetings to provide comment during the public comment period of the meeting.

Program Plan Revisions: Program Plan revisions were not necessary.

BMP 2.2: Develop and Maintain a Stormwater Webpage

Description

No later than three months after this permit's effective date, the City will develop and maintain a webpage dedicated to the MS4 program and stormwater pollution prevention. The following information will be posted on this webpage:

- The effective MS4 permit and coverage letter.
- The most current MS4 Program Plan or location where the MS4 Program Plan can be obtained.

- The annual report for each year of the term covered by this permit.
- A mechanism for the public to report potential illicit discharges, improper disposal, or spills to the MS4, complaints regarding land disturbing activities, or other potential stormwater pollution concerns.
- Methods for how the public can provide input on the city's MS4 program.

Annual Reporting Requirements

A webpage link to the city's MS4 program and stormwater website.

Website Information

The City's MS4 Program Plan and Annual Reports are available on the City's Stormwater webpages: http://www.harrisonburgva.gov/stormwater-management-program.

The City of Harrisonburg promotes reporting of construction site issues through its website at: http://www.harrisonburgva.gov/site-development.

The City of Harrisonburg operates an online pollution reporting form for citizens to report illicit discharges at: http://www.harrisonburgva.gov/report-pollution.

BMP Effectiveness

Review of BMP: The metric for determining if the BMP is effective is if the websites are maintained and available for use. All of the websites are available for citizens to use and the City promotes the use of the websites periodically throughout the year.

Program Plan Revisions: Program Plan revisions were not necessary.

BMP 2.3: Implement Four Public Involvement Opportunities

Description

The City will implement no less than four activities per year from two or more of the categories described in the permit to provide an opportunity for public involvement to improve water quality and support local restoration and clean-up projects.

Annual Reporting Requirements

- A description of the public involvement activities implemented by the City.
- A report of the metric as defined for each activity and an evaluation as to if the activity is beneficial to improving water quality.
- The name of other MS4 permittees who participated in the public involvement opportunities.

Public Involvement Activities

- Blacks Run Clean Up Day: Blacks Run Clean Up Day is the annual community stream clean up organized by the City of Harrisonburg. The Event is usually held in April and includes educational exhibits from participating organization. In the past, these have included the Shenandoah Valley Soil and Water Conservation District, Climate Action Alliance of the Valley, Wild Virginia, James Madison University, Virginia Master Naturalists, Potomac Appalachian Trail Club, Chesapeake Bay Foundation, Virginia Department of Forestry, Virginia Clean Cities, Harrisonburg Parks and Recreation, Harrisonburg-Rockingham Regional Sewer Authority, Bring Your Own, Virginia Department of Environmental Quality, and The Natural Garden. The website

www.cleanstream.org has information on past and upcoming clean up day events. Further documentation is available upon request.

- Household Hazardous Waste Collection Days: Household Hazardous Waste Collection Days are organized by the City of Harrisonburg and Rockingham County and are offered to residents so they can properly dispose of their household hazardous waste. The collection days were held on October 19, 2019 and April 18, 2020.
- Middle School Watershed Field Trips: City of Harrisonburg middle school students participate in hands-on watershed field trips as a part of their curriculum. The program introduces middle schoolers to their local watershed. 6th graders participate in "Plant-a-Seed" where they learn about river hydrology, macroinvertebrates, and water chemistry. 7th graders participate in a river field trip where they go rafting, learn about mapping watersheds, and identify trees. City of Harrisonburg staff help to teach lessons during these trips. The events are usually held on multiple days.
- Rain Barrel Workshops: Rain Barrel workshops are organized by the Shenandoah Valley Soil and Water Conservation District and the City of Harrisonburg. Participants are taught about water conservation and watershed health and make rain barrels out of pickle barrels.

BMP Effectiveness

Review of BMP:

- Blacks Run Clean Up Day: The metric for determining if the activity is beneficial to water quality will be tonnage of trash picked up. The average range of pounds of trash removed from 2001 – 2018 is 3,900 pounds – 8,100 pounds. Due to COVID-19 restrictions, the event was not held this year. However, 21 volunteer groups assisted with stream clean events throughout the year. The volunteers assisted in collecting 3,870 pounds (1.9 tons) of trash. Additionally, these volunteers removed 16 tires, 3 bikes, 2 mattresses, old tree tubes, and many other large miscellaneous items. 11 Additional planned stream clean ups were cancelled due to COVID-19 restrictions. Normally these events are reported as part of the MCM #1, but due to COVID-19 restrictions impacting this event, we wanted to note work completed here as well.
- Household Hazardous Waste Collection Days: The metric for determining if the activity is beneficial to water quality will be the type and amounts of items dropped off during the collection days. Collection days were run jointly for Harrisonburg City and Rockingham County residents. Collected waste included aerosols (122 lbs), lead acid batteries (82 lbs), alkaline batteries (24 lbs), nickel cadmium batteries (13 lbs), lithium batteries (6 lbs), mixed solvents (753 lbs), mercury debris (4lbs), solid pesticides (111 lbs), alkaline cleaners (229 lbs), liquid pesticides (487 lbs), acid cleaners (154 lbs), NH materials (571 lbs), paint related materials (3,289 lbs), small cylinders (5lbs).
- Middle School Watershed Field Trips: The metric for determining if the activity is beneficial to water quality will be the number of students reached through staff taught lessons. The "Plant-a-Seed" event was held September 26, 2019 and October 3, 2019 and reached 50 6th grade students. Due to COVID-19 restrictions, the planned spring events were cancelled limiting the scope this permit year.
- Rain Barrel Workshops: The metric for determining if the activity is beneficial to water quality will be the number of participants in the workshop and the amount of rain barrels built. Due to COVID-19 restrictions, the rain barrel workshop was cancelled. However, 5-10 rain barrels were still sold to City residents.

Program Plan Revisions: No Program Plan changes are needed at this time.

Minimum Control Measure #3: Illicit Discharge Detection and Elimination

BMP 3.1: Develop and Maintain a Storm Drain System, Outfalls, and Information Map

Description

The City will develop and maintain an accurate MS4 map and information table, which will be submitted to the DEQ no later than July 1, 2019 and updated no later than October 1 of each year. If any physical interconnections to other MS4s are established or discovered, written notification will be provided to those MS4s.

Annual Reporting Requirements

A confirmation statement that the MS4 map and information table are up-to-date as of June 30 of the reporting year.

Confirmation Statement

The MS4 map and information table are up-to-date.

BMP Effectiveness

Review of BMP: The MS4 map and information table are up-to-date and were submitted to the Department of Environmental Quality.

Program Plan Revisions: No Program Plan changes are needed at this time.

BMP 3.2: Prohibit Illicit Discharges and Connections through Ordinance Language

Description

The City shall prohibit, through ordinance, policy, standard operating procedures, or other legal mechanism, to the extent allowable under federal, state, or local law, regulations, or ordinances, unauthorized non-stormwater discharges into the storm sewer system.

Annual Reporting Requirements

No requirements

BMP 3.3: Maintain and Implement Illicit Discharge Detection and Elimination Written Procedures

Description

The City will maintain and implement illicit discharge detection and elimination (IDDE) written procedures designed to detect, identity, and address unauthorized non-stormwater discharges, including illegal dumping, to the MS4 with the goal of eliminating the unauthorized discharge. Procedures will include dry weather field screening of at least 50 outfalls per year.

Annual Reporting Requirements

- The total number of outfalls screened during the reporting period as part of the dry weather screening program.
- A list of illicit discharges to the MS4 including spills reaching the MS4.

Number of Outfalls Screened

During the 2019-2020 reporting period, 50 MS4 outfalls were inspected and 0 active illicit discharges were observed or required follow-up.

Illicit Discharges

The incidents listed in the Illicit Discharge Summary 2019-2020 report include potential (having entered the storm sewer system but not having entered the live waterway) and actual illicit discharges (having entered the storm sewer system and the live waterway). Other suspect illicit discharges (dumping activity or spills away from the storm sewer system) are tracked and enforced as needed. A list of incident dates is provided below. Further information is available by request.

InspectionId	Report Date	Status	Finish Date
31730	07/8/2019	CLOSED	07/11/2019
31814	07/9/2019	CLOSED	07/9/2019
31819	06/25/2019	CLOSED	07/9/2019
32517	07/16/2019	CLOSED	07/17/2019
32617	07/18/2019	CLOSED	07/26/2019
32819	07/23/2019	CLOSED	07/23/2019
33423	08/9/2019	CLOSED	09/9/2019
34118	08/29/2019	CLOSED	08/29/2019
36941	10/29/2019	CLOSED	03/3/2020
38769	01/7/2020	CLOSED	01/7/2020
39207	01/28/2020	CLOSED	03/3/2020
39270	01/30/2020	CLOSED	03/3/2020
39983	02/13/2020	CLOSED	03/3/2020
39984	03/2/2020	CLOSED	06/2/2020
40394	02/28/2020	CLOSED	03/13/2020
40395	03/11/2020	CLOSED	09/3/2020
40567	03/23/2020	CLOSED	06/2/2020
46823	05/27/2020	CLOSED	09/3/2020
46825	06/30/2020	CLOSED	6/30/2020
46830	04/23/2020	CLOSED	04/23/2020
46833	04/13/2020	CLOSED	04/13/2020
46838	02/27/2020	CLOSED	02/27/2019
46841	07/12/2019	CLOSED	07/12/2019
47406	08/2/2019	CLOSED	08/02/2019
47524	08/09/2019	CLOSED	09/09/2019

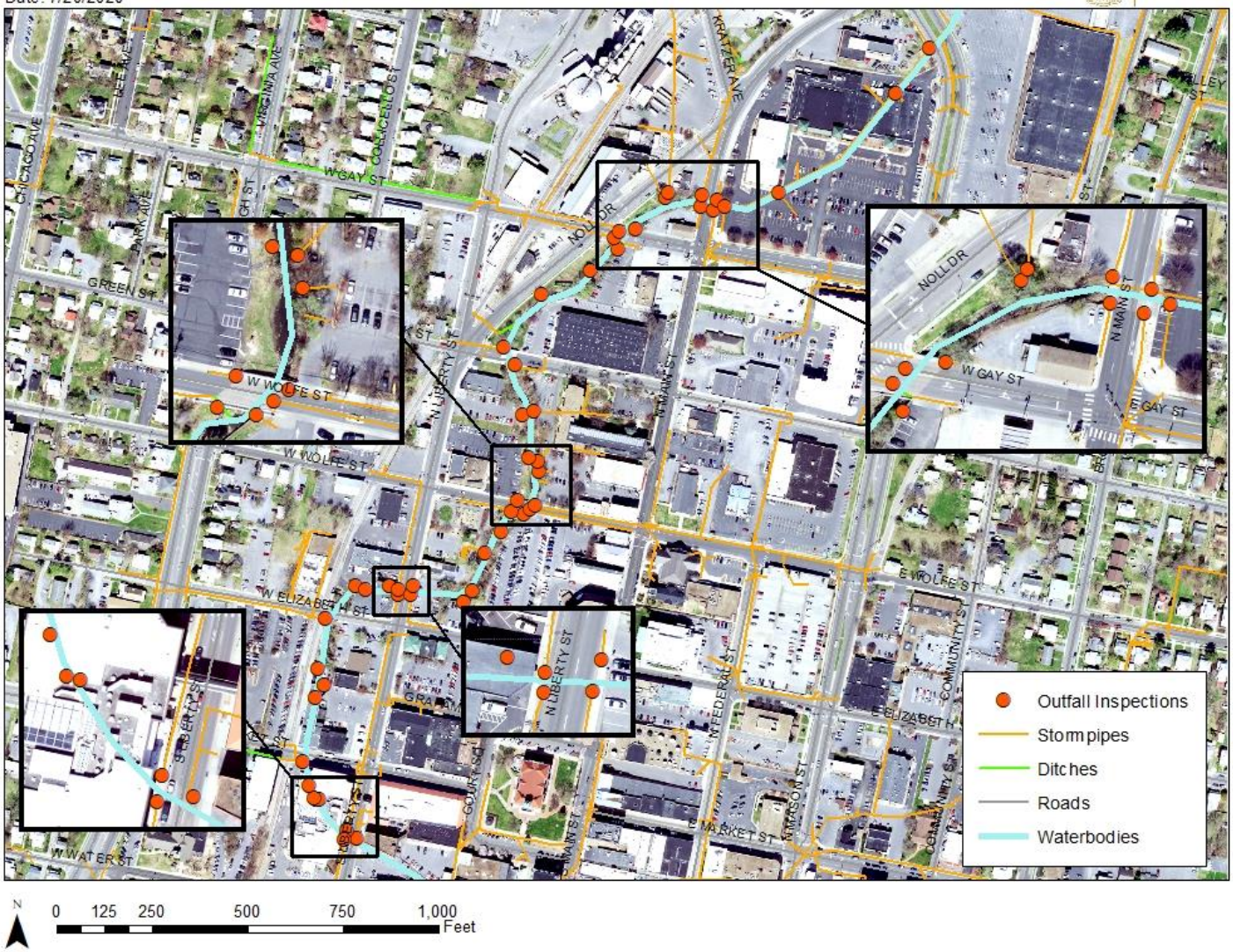
BMP Effectiveness

Review of BMP: Outfalls were screened, and illicit discharges were followed up on per the permit requirements.

Program Plan Revisions: Program Plan changes are not needed at this time.

Date: 7/20/2020

Outfall Inspections 2020



Minimum Control Measure #4: Construction Site Stormwater Runoff Control

BMP 4.1: Use Legal Authority to Address Discharges Entering the MS4

Description

The City will utilize its legal authority, such as ordinances, permits, orders, specific contract language, and interjurisdictional agreements, to address discharges entering the MS4. The City will control construction site stormwater runoff by implementing its Virginia Erosion and Sediment Control Program (VESCP) consistent with the Virginia Erosion and Sediment Control Law (Sec. 62.1-44.15:51 et seq. of the Code of Virginia) and Virginia Erosion and Sediment Control Regulations (9VAC25-840).

Annual Reporting Requirements

- A confirmation statement that land disturbing projects that occurred during the reporting period have been conducted in accordance with the current department approved standards and specifications for erosion and sediment.
- If one or more or the land disturbing projects were not conducted with the department approved standards and specifications, an explanation as to why the projects did not conform to the approved standards and specifications.
- Total number of inspections conducted.
- The total number and type of enforcement actions implemented and the type of enforcement actions.

Confirmation Statement

All land disturbing projects that occurred during the 2019-2020 reporting period were conducted in accordance with the current department approved standards and specification for erosion and sediment control.

Explanation of Nonconformity

All land disturbing projects were conducted in accordance with the current department approved standards and specifications.

Total Number of Inspections conducted

- Total number of land disturbing activities: 53
- Total number of acres disturbed: 113.31
- Total number of inspections conducted: 1265

Enforcement Actions

During the 2019-2020 reporting period 1265 land disturbing activity inspections were conducted. Of the 1265 inspections, 119 potential violations were noted. The findings and corrective measures were noted in the inspection files and either discussed on site, or emails or written letters were sent to the property owners or RLDs. Of the 119 potential violations, 7 Notice to Comply letters were sent to the property owners or RLDs. All potential violations were resolved in a timely manner without the need for further enforcement actions.

BMP Effectiveness

Review of BMP: All land disturbing projects that occurred during the 2019-2020 reporting period were conducted in accordance with the current department approved standards and specifications. Potential violations were noted and Notice to Comply letters were sent and all potential violations were resolved in a timely manner without the need for further enforcement actions.

Program Plan Revisions: Program Plan changes are not needed at this time.

Minimum Control Measure #5: Post-Construction Stormwater Management for New Development and Development on Prior Developed Lands

BMP 5.1: Implement the VSMP

Description

The city has an approved Virginia Stormwater Management Program (VSMP) and so shall implement the VSMP consistent with the Virginia Stormwater Management Act (Sec 62.1-44.15:24 et seq. of the Code of Virginia) and the VSMP Regulations (9VAC25-870).

Annual Reporting Requirements

None

BMP 5.2: Inspection and Maintenance Program for City Owned Stormwater Management Facilities

Description

The City will implement an inspection and maintenance program for those stormwater facilities owned or operated by the City that discharges to the MS4. The City will:

- Develop and maintain written inspection and maintenance procedures to ensure adequate long-term operation and maintenance of its stormwater management facilities.
- Inspect city owned or operated stormwater management facilities no less than once per year.
- Conduct maintenance as necessary.

Annual Reporting Requirements

- Total number of inspections conducted on stormwater management facilities owned or operated by the City.
- A description of the significant activities performed on the stormwater management facilities owned or operated by the City to ensure they continue to perform as designed. This does not include activities such as grass mowing or trash collection.

City Owned BMP Inspections

All city-owned BMPs were inspected once, for a total of 50 inspections.

Significant Activities performed

Sediment was removed from all the detention basins with concrete channels. Trapping for nuisance animals occurred on an as-needed basis in BMPs and all rodent holes were repaired after their removal. Invasive vegetation was chemically controlled in the Erickson serpentine and the Berry Rd BMPs as well as all the rain garden and bioretention BMPs. Trees were added to the Reservoir and Erickson serpentine

BMPs. All the rain garden and bioretention BMPs had mulch added. 100 wildflower plugs were added to the City Hall bioretention.

BMP Effectiveness

Review of BMP: All BMPs were inspected at least once during the permit year.

Program Plan Revisions: Program Plan changes are not needed at this time

BMP 5.3: Inspection and Maintenance Program for Privately Owned Stormwater Management Facilities

Description

The City will implement an inspection and maintenance program for privately owned stormwater facilities that includes:

- An inspection frequency of no less than once per five years.
- Adequate long-term operation and maintenance by the owner by requiring the owner to develop a recorded inspection schedule and maintenance agreement.
- Enforcement of maintenance as needed.

Annual Reporting Requirements

- The number of privately owned stormwater management facility inspections conducted.
- The number of enforcement actions initiated by the permittee to ensure long-term maintenance of privately owned stormwater management facilities including the type of enforcement action.

Private Stormwater BMP Inspections and Enforcement Actions

During this reporting period, there were 8 inspections and there were 0 enforcement actions for privately owned stormwater management facilities.

BMP Effectiveness

Review of BMP: The inspection and maintenance program was implemented per permit requirements.

Program Plan Revisions: Program Plan changes are not needed at this time.

BMP 5.4: Track and Report Stormwater Management Facilities

Description

The City will maintain an electronic database or spreadsheet of all known city owned or city operated and privately owned stormwater management facilities that discharge into the MS4. The database shall also include all BMPs implemented by the city to meet the Chesapeake Bay TMDL load reduction required. The database will be updated when new stormwater management facilities are brought on-line, or existing stormwater management facilities are discovered.

The City will use the DEQ Construction Stormwater Database to report stormwater management facilities installed to address the control of post-construction runoff from land disturbing activities for which the city is required to obtain a General VPDES Permit for Discharges of Stormwater from Construction Activities.

Historical BMPs will be reported using the DEQ Construction Stormwater Database, and new BMPs will be added to the DEQ BMP Warehouse on a yearly basis.

Annual Reporting Requirements

- A confirmation statement that the City submitted stormwater management facility information through the Virginia Construction Stormwater General Permit Database for those land disturbing activities for which the city was required to obtain coverage under the General VPDES Permit for Discharges of Stormwater from Construction Activities or a statement that the city did not complete any projects requiring coverage under the General VPDES Permit for Discharges of Stormwater from Construction Activities.
- A confirmation statement that the City electronically reported BMPs using the DEQ BMP Warehouse in accordance with the permit and the date on which the information was submitted.

Confirmation of VPDES Project Submittal

The permittee submitted stormwater management facility information through the Virginia Construction Stormwater General Permit database for those land disturbing activities for which the permittee was required to obtain coverage under the General VPDES Permit for Discharges of Stormwater from Construction Activities in accordance with Part I E 5 f

Confirmation of BMP Project Reporting

The permittee submitted BMPs using the DEQ BMP Warehouse in accordance with the permit on 9/18/2020.

BMP Effectiveness

Review of BMP: The remaining BMPs were not able to be reported on the DEQ BMP Warehouse and include:

1. Homeowner BMPs
2. Land Conversion
3. Permanent Credit Purchases

Program Plan Revisions: Program Plan changes are not needed at this time.

Minimum Control Measure #6: Pollution Prevention and Good Housekeeping for Facilities Owned or Operated by the Permittee

BMP 6.1: Maintain and Implement Written Procedures for Pollution Prevention and Good Housekeeping

Description

The City shall maintain and implement written procedures for those activities at facilities owned or operated by the City, such as road, street, and parking lot maintenance; equipment maintenance; and the application, storage, transport, and disposal of pesticides, herbicides, and fertilizers designed to:

1. Prevent illicit discharges
2. Ensure the proper disposal of waste materials, including landscape wastes;
3. Prevent the discharge of wastewater or city vehicle washwater into the MS4 without authorization under a separate VPDES permit

4. Require implementation of best management practices when discharging water pumped from utility construction and maintenance activities
5. Minimize the pollutants in stormwater runoff from bulk storage areas (e.g. salt storage, topsoil stockpiles) using best management practices
6. Prevent pollutant discharge into the MS4 from leaking municipal automobiles and
7. Ensure the application of materials, including fertilizers and pesticides, is conducted in accordance with the manufacturers recommendations

Written pollution prevention and good housekeeping procedures shall be utilized as a part of the employee training program.

Annual Reporting Requirements

A summary of any daily operational procedures developed or modified in accordance with the permit requirements during the reporting period.

Summary of new or modified operational procedures

No operational procedures were created or modified

Existing Standard Operating Procedures

- Bulk Storage Areas (Stockpiles)
- Dewatering Operations
- Discharge of Wastewater
- Disposal of Waste Materials (Landscaping)
- Equipment Maintenance
- Fertilizer and Pesticide Applications
- Leaking Automobiles & Equipment
- Municipal Wash Water
- Prevent Illicit Discharges
- Road & Street Maintenance
- Spill Kits
- Sweeper Pad

BMP Effectiveness

Review of BMP: Operational procedures are available on the City intranet (C2) system accessible by all City of Harrisonburg employees and are distributed to site supervisors in hardcopy form to be stored in accessible location for employees to reference as needed.

Program Plan Revisions: Program Plan changes are not needed at this time.

BMP 6.2: Stormwater Pollution Prevention Plans

Description

Identify High-Priority, High-Potential Sites and Implement Stormwater Pollution Prevention Plans - The City will maintain and implement a site pollution prevention plan for each high-priority facility owned or operated by the permittee with a high potential to discharge pollutants that are not covered under a separate VPDES permit. SWPPP facilities will be inspected. Facilities without SWPPPs will be reviewed annually and added as necessary.

SWPPP Development for High-Priority, High-Potential Sites - Each SWPPP will contain information about the site and potential pollutants, written procedures designed to reduce and prevent pollutant discharge, procedures for training, an inspection and maintenance schedule, an inspection log, a log of unauthorized discharges, releases or spills.

Non-SWPPP Site Review - No later than June 30 of each year, the City will review any high-priority facility owned or operated by the City for which a SWPPP has not been developed to determine if the facility has a high potential to discharge pollutants. If the facility is determined to be a high-priority facility with a high potential to discharge pollutants, the City will develop a SWPPP no later than December 31 of that same year.

SWPPP Site Review - The City will review the contents of any site specific SWPPP no later than 30 days after any unauthorized discharge, release, or spill is reported to determine if additional measures are necessary to prevent future unauthorized discharges, releases, or spills. If necessary, the SWPPP will be updated no later than 90 days after the unauthorized discharge.

SWPPP Documentation - The SWPPP shall be kept at the high-priority facility with a high potential to discharge and utilized as part of staff training. The SWPPP and associated documents may be maintained as a hard copy or electronically if the documents are available to employees at the applicable site.

Facility Removal - If activities change at a facility such that the facility no longer meets the criteria of a high-priority facility with a high potential to discharge pollutants, the City may remove the facility from the high-priority, high-potential list.

Annual Reporting Requirements

- A summary of any new SWPPPs developed in accordance with the permit requirements during the reporting period
- A summary of any SWPPPs modified in accordance with the permit requirements during the reporting period.

Summary of new SWPPP Development

High-priority facilities were reviewed by June 30, 2019 to determine if there were any facilities meeting the high-priority, high-potential criteria requiring a SWPPP. Two facilities were identified:

1. Harrisonburg Electric Commission Facility on North Liberty Street
2. Public Works Storage Facility on West Market Street

SWPPS will be developed and implemented on these two facilities by December 31, 2019.

Summary of SWPPP Modifications

Park View SWPPP October 2019 Changes

- #1 Fueling Location- removed
- #3 Covered Outdoor Storage- renovating
- #12 Uncovered Mulch Storage- removed
- #17 Dumpster- moved to back lot near #8. Only onsite from April through October
- PR Greenhouse built where #12 used to be located
- Renumbered potential source locations to reflect #1 and #12 being removed

Park View SWPPP April 2020 Changes

- Covered area added near entrance of facility along the southeastern edge of the property. Stockpile areas now include 5 bays in the new covered storage area. Removed jersey barriers and covered areas previously there.
- Gravel areas updated to reflect current layout
- Shed moved from near #6 PD fence towards stream
- Jersey barrier and erosion eel added to #8
- #14 oil storage was removed and covered outdoor storage added in its place

Transfer Station SWPPP October 2019 Map Changes

- Attendant Shed moved from south end of Convenience Center to north end
- Gravel located in north end of property above the sidewalk planted into grass
- Gravel located from sidewalk on north end to south east corner of Convenience Center paved

Transfer Station SWPPP April 2020 Map Changes

- Added concrete pad on south end of Convenience Center
- Extended Uncovered Material Storage Area #3 to include the concrete pad added on the south end of the Convenience Center

Public Utilities SWPPP April 2020 Map Changes

- #1 Chemical Storage location moved
- Potential Sources numbers reordered to match inspection path
- Spill Kit location mapped

HEC SWPPP April 2020 Map Changes

- Location of Mobile Spill Kit unit mapped

Central Stores SWPPP April 2020 Map Changes

- #1 Chemical Storage location moved
- Potential Sources numbers reordered to match inspection path
- Location of Spill Kit mapped

BMP Effectiveness

Review of BMP:

- New SWPPP Development: High-priority facilities were reviewed to determine if new SWPPP development would be necessary by December 31.
- SWPPP Modifications: SWPPP modifications were made as necessary.

Program Plan Revisions: Program Plan changes are not needed at this time.

BMP 6.3: Pollution Prevention by Contractors

Description

The City will require through the use of contract language, training, standard operating procedures, etc., that contractors employed by the city and engaging in activities with the potential to discharge pollutants use appropriate control measures to minimize the discharge of pollutants to the MS4.

Annual Reporting Requirements

None

BMP 6.4: Stormwater Pollution Prevention Training Plan

Description

The City will develop a training plan in writing for applicable staff. The City will maintain documentation of each training event conducted for a minimum of three years after the training event.

Annual Reporting Requirements

A list of the training events conducted in accordance with the permit requirements including the following information:

- The date of the training event.
- The number of employees who attended the training event.
- The objective of the training event.

Training Event Summaries

Date	Attendees	Objective
Online Training	69	Police Staff Training
Online Training	73	Fire Department SWPPP Facility Training
Online Training	11	Community Development Staff Training
Online Training	14	Public Transit Staff Training
Online Training	81	Public Works Staff Training

BMP Effectiveness

Review of BMP: City staff conducted online training for Police, Fire, Community Development, Transit, and Public Works staff. All staff completed the main stormwater good housekeeping and illicit discharge detection training.

Program Plan Revisions: Program Plan changes are not needed at this time.

BMP 6.5: Turf and Landscape Nutrient Management Plans

Description

The City will maintain and implement turf and landscape nutrient management plans on all lands owned or operated by the City where nutrients are applied to a contiguous area greater than one acre.

Annual Reporting Requirements

A summary of any new turf and landscape nutrient management plans developed that includes:

- Location and total acreage of each land area.
- The date of the approved nutrient management plan.

Summary of new nutrient management plans

No new plans were developed.

Existing Nutrient Management Plans

1. Heritage Oaks Golf Course; 38°26'49.97"N, 78°54'15.82"W; 66.42 acres; 11/1/2017
2. Smithland Park; 38°26’55”N, 78°50’02”W; 5 acres, 2.5 acres, 10 acres; 11/1/2018
3. Purcell Park; 38°25’33”N, 78°52’53”W; 1 acre, 5.0 acres; 11/1/2018
4. Simms Field; 38°27’15”N, 78°51’30”W; 1.6 acres; 11/1/2018
5. Ramblewood Fields; 38°24’44”N, 78°53’13”W; 3.6 acres; 11/1/2018
6. Harrisonburg High School; 38°26’30”N, 78°54’37”W; 11.14 acres; 3/1/2018

BMP Effectiveness

Review of BMP: Nutrient management plans are in place at the required facilities.

Program Plan Revisions: Program Plan changes are not needed at this time.

TMDL Special Conditions

Chesapeake Bay TMDL Special Condition

Description

In its Phase I and Phase II Chesapeake Bay TMDL Watershed Implementation Plans (WIP), the Commonwealth committed to a phased approach for MS4s to implement necessary pollutant reductions (phosphorus, nitrogen, and sediment). This permit (2018-2023) requires implementation of an additional 35% pollutant reductions as specified in the 2010 Phase I and II WIPs. In combination with the 5% pollutant reductions that have already been achieved, the total reduction at the end of this permit term is 40%.

The City developed the draft Chesapeake Bay TMDL Action Plan which was submitted to the Virginia Department of Environmental Quality with the Registration Statement.

The City will implement its Chesapeake Bay TMDL Action Plan and submit progress reports in its MS4 Annual Report in accordance with the permit requirements. Any updates to the Chesapeake Bay TMDL Action Plan will be submitted with each MS4 Annual Report.

Program Plan Requirements

The Chesapeake Bay TMDL Action Plan will be incorporated by reference into the program plan.

Anticipated BMPs or Strategies

The Chesapeake Bay TMDL Action Plan is available at: https://www.harrisonburgva.gov/MS4-permit-program

Annual Reporting Requirements

Once the Chesapeake Bay TMDL Action Plan is developed, each subsequent annual report shall include:

- A list of BMPs implemented during the reporting period but not reported to the DEQ Warehouse and the estimated reduction of pollutants of concern achieved by each and reported in pounds per year;
- If the permittee acquired credits during the reporting period to meet all or a portion of the required reductions, a statement that credits were acquired,
- The progress, using the final design efficiency of the BMPs, toward meeting the required cumulative reductions for total nitrogen, total phosphorous, and total suspended solids; and,
- A list of BMPs that are planned to be implemented during the next reporting period.

BMPs Implemented during the reporting period but not reported to the DEQ Warehouse

1. Homeowner BMPs
2. Bioreactor (Pending DEQ Approval)
3. Land Conversion

Acquired Credits

No credits were acquired during this permit year.

Progress towards Chesapeake Bay TMDL

TMDL Action Plan: The City of Harrisonburg has developed a Chesapeake Bay TMDL Action Plan and it is available at http://www.harrisonburgva.gov/MS4-permit-program.

List of Control Measures Implemented During the Reporting Period: Street Sweeping, Homeowner BMPs, Septic to Sanitary Sewer Connections, Land Conversion

Estimate Reduction Achieved by Each Control:

Type of BMP	Project Name	Location	Reductions (lbs/yr)		
			TP	TN	TSS
Permanent Water Quality Trading Credits	As Needed	Nutrient Credit Market	8	59.44	571.44
North End Greenway – Permanent Water Quality Credits	North End Greenway Stream Restoration	North End Greenway	70.00	151.999	24,133.183
Street Sweeping	Street Sweeping (annual)	Harrisonburg, VA	21.95	90.18	33,475.39
Storm Drain Cleaning	Storm Drain Cleaning (annual)	Harrisonburg, VA	9.77	43.96	0
Septic to Sanitary Sewer Connections	Septic to Sanitary Sewer Connections (since 2006)	Harrisonburg, VA	0	471.5	0
Homeowner BMPs	Homeowner BMPs	Harrisonburg, VA	10.65	135.18	0
Bioreactor	Bioreactor	Harrisonburg, VA	0	pending	0
Urban Tree Canopy Expansion	New Tree Planting	Harrisonburg, VA	3.01	13.55	415.03
Land Conversion: Turf to Mixed Open	Pollinator Habitats	Harrisonburg, VA	0.89	4.1	0
		Total	124.27	969.909	58,595.043
		Amount Needed by 2023	354	2,684	303,897

BMPS to be implemented during next reporting period

The anticipated BMPs to be implemented during the next reporting period include (but are not limited to): Storm Drain Cleaning Practice, Septic to Sanitary Sewer Connections, Tree Planting, Permanent Credit Purchases, Stream Restoration, Pollinator Habitat Conversion, Homeowner BMPs, BMP Retrofits, and Bioreactor projects.

Local TMDL Special Conditions

Description

The City will develop a local TMDL action plan designed to reduce loadings for pollutants of concern if the permittee discharges the pollutants of concern to an impaired water for which a TMDL has been approved by the U.S. Environmental Protection Agency (EPA) as described below:

1. For TMDLS approved by the EPA prior to July 1, 2013, and in which an individual or aggregate wasteload has been allocated to the permittee, the permittee shall update the previously approved local TMDL action plans to meet the conditions of the new permit as applicable, no later than 18 months after the permit effective date and continue implementation of the action plan; and
2. For TMDLs approved by EPA on or after July 1, 2013, and prior to June 30, 2018, and in which an individual or aggregate wasteload has been allocated to the permittee, the permittee shall develop and initiate implementation of action plans to meet the conditions of the new permit as applicable for each pollutant for which wasteloads have been allocated to the city's MS4 no later than 30 months after the permit effective date.

Annual Reporting Requirements

For each reporting period, each annual report shall include a summary of actions conducted to implement each local TMDL action plan.

Smith Creek TMDL

Smith Creek watershed has a TMDL that was approved by the EPA prior to July 1, 2013 and has an associated wasteload allocation. The Smith Creek Action Plan was updated and submitted to DEQ no later than 18 months after the permit effective date. The Action Plan was updated and submitted to DEQ on 4/29/2020. It is available at http://www.harrisonburgva.gov/MS4-permit-program.

Best Management Practices to Reduce Bacteria

BMP Strategy 1: Domestic Pets (Cats and Dogs)

- There are 20 pet waste stations with signage throughout city parks. Approximately 72,000 bags are used at the stations every year.
- 4,750 linear feet of Blacks Run and its tributaries that were restored in Purcell Park, a municipal park, in 2012. The surrounding stream buffer was put into conservation easement with a national land trust.
- Smithland Road Dog Park was constructed in early 2015 and includes four pet waste stations. Park rules include that pet waste must be picked up and properly disposed of. City of Harrisonburg Parks and Recreation staff maintain these pet waste stations on a regular basis.

BMP Strategy 2: Urban Wildlife

- The City provides maintenance and repair to the storm drain system that is located on the public street right-of-way or in easements specifically assigned to the City and designated for drainage. One flusher truck cleans outfalls from approximately April – October, as weather allows.
- The Stormwater Utility Fee Credit Program provides incentives for homeowners who disconnect roof drains from the storm sewer system. The program provides best practice and site design specifications for this practice.

BMP Strategy 3: Illicit Connections or Illicit Discharges to the MS4

- Sec. 7-3-1 to 7-3-80 of the sewer ordinance requires septic systems to be inspected and pumped out every five years. The sewer ordinance was updated to include this requirement in August 2018.

Best Management Practices to Reduce Sediment

- The street sweeping program annually removes an estimated 205 lbs of TSS from the Smith Creek Watershed per year.
- The storm drain cleaning program annually removes an estimated 562 lbs TSS from the Smith Creek Watershed per year. During this permit year, the flusher truck was not operational. However, storm drains were kept clear through regular sweeping of city streets.
- The leaf collection program annually removes an estimated 4,022 lbs TSS from the Smith Creek Watershed every year.

Pollutants of Concern: Nutrients, Sediment, Bacteria

Strategy 1: Traditional Written Materials

- Stormwater and Environmental Newsletters: This email newsletter has a subscription list of around 700 contacts and each newsletter is opened by around 40-50% of the subscription list.
    - *Leaf Collection Begins*. October 2019
    - *Are you going to eat that?* November 2019
    - *To Salt or Not To Salt*. December 2019
    - *Stormwater Utility Fees and You*. January 2020
    - *Blacks Run Clean Up Day.* February 2019.
    - *Should I Throw This in Blacks Run?* February 2019.
    - *Do you want to be a grasscycler*? May 2020
- Harrisonburg Stormwater Facebook Page: The Harrisonburg Stormwater Facebook page promotes high-quality receiving waters, education about the Chesapeake Bay and local TMDLs, and information about local events and projects. During this permit year, 184 posts were made to the Harrisonburg Stormwater Facebook page. Each post reached an average of 298 people.

Strategy 2: Media Materials

- Daily News Record "Stream Restoration Project Underway"
- Press Release "Losses from emerald ash borer helping clean Blacks Run"

Strategy 3: Speaking Engagements

- All speaking engagements attended by stormwater staff are focused on explaining water quality, including TMDLs, as well as Harrisonburg's role in meeting the Chesapeake Bay TMDL. Staff attended 2 educational events and reached an audience of approximately 72 participants. These speaking engagements do not include Blacks Run Clean Up Day, Middle School Watershed Field Trips, or the annual rain barrel workshop as these events are counted as Public Involvement Activities. Our traditional reach through speaking engagements was partially reduced this permit year due to COVID-19 restrictions that limited in-person meetings as well as school closures.

Strategy 4: Workshops/City Programs

- As part of advertising city programs aimed at installing or promoting stormwater BMP installation (Harrisonburg Conservation Assistance Program, Stormwater Utility Fee Program), city staff communicate the reasons why nutrients are an issue in local water quality as well as ways for landowners to reduce impacts from their property.

Strategy 5: Staff Training

- As part of the Good Housekeeping / Illicit Discharge training, city staff are trained bi-annually on stormwater issues. This training includes information about Harrisonburg's watersheds and water quality impairments. The training is given to field staff through an online training platform called TargetSolutions.