

CITY OF CHARLOTTESVILLE

Department of Public Works
Environmental Sustainability Division

305 4th Street NW • Charlottesville, Virginia 22903
Telephone 434-970-3631
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September 30, 2022

Department of Environmental Quality
Megan O’Gorek
DEQ Valley Regional Office
4411 Early Road
Harrisonburg, VA 22801

Re: Submittal of the Permit Year 4 Annual Report for General Permit for Stormwater
Discharges from Small Municipal Separate Storm Sewer Systems, Permit # VAR040051

Ms. O’Gorek,

In accordance with Permit VAR040051 effective November 1, 2018, the City of Charlottesville has compiled an Annual Report addressing the status of our Stormwater Management Program for the permit year covering July 1, 2021 through June 30, 2022.

If you have any questions or comments, please contact me at 434-970-3631 or Dan Frisbee, Water Resources Specialist, at 434-970-3997.

Respectfully,

City of Charlottesville

Kristel Riddervold
Environmental Sustainability Manager

CITY OF CHARLOTTESVILLE

"To be One Community Filled with Opportunity"

Office of the City Manager

P.O. Box 911 • Charlottesville, Virginia 22902

Telephone 434-970-3101

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www.charlottesville.gov



September 30, 2022

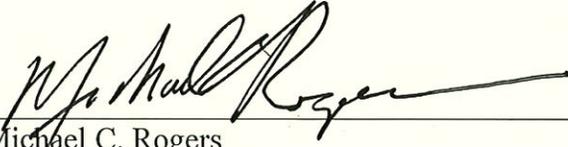
Megan O'Gorek
Department of Environmental Quality
DEQ Valley Regional Office
4411 Early Road
Harrisonburg, VA 22801

Re: Certification of MS4 Annual Report for Permit # VAR040051

Ms. O'Gorek,

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.

Sincerely,



Michael C. Rogers
Interim City Manager
City of Charlottesville, Virginia

9/28/22
Date

VAR040051 City of Charlottesville
Permit Number MS4 Name



**City of Charlottesville
Permit Year 4 Annual Report
General Permit for Stormwater Discharges
From Small Municipal Separate Storm Sewer Systems (MS4)
VAR040051**

**Submitted to:
Department of Environmental Quality
DEQ Valley Regional Office
4411 Early Road
P.O. Box 3000
Harrisonburg, VA 22801**

September 30, 2022

Introduction

In compliance with the City of Charlottesville's coverage under the General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems, VAR040051, this Permit Year 4 (July 1, 2021 – June 30, 2022) Annual Report summarizes the status of permit compliance and stormwater management program elements pertaining to the six required Minimum Control Measures (MCMs).

As required by Part I.D.2.e, the City evaluated the MS4 Program implementation, including a review of each MCM, to determine the MS4 Program's effectiveness. This included an assessment of the selection of best management practices (BMP) that constitute the MS4 Program Plan. The City has determined that the identified BMPs represent an appropriate selection and implementation of an iterative stormwater management program as defined by the General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems. The City did not receive any written comments regarding the MS4 Program Plan or any modifications.

The City revised our MS4 Program Plan as follows: to incorporate updated forms utilized in the implementation of the City's local Virginia Stormwater Management Program (VSMP); to include a revised Appendix E - Training Schedule and Table; and to include a revised Appendix I – Water Resources Protection Program Organizational Chart.

The City is utilizing its local VSMP to satisfy pertinent requirements of MCM 4, Construction Site Stormwater Runoff Control, and MCM 5, Post-construction Stormwater Management for New Development and Development on Prior Developed Lands.

As required by Part II.A.13.c, Attachment C of the Annual Report is an updated Chesapeake Bay TMDL Summary Ledger, which details the City's progress toward meeting the required cumulative reductions for total nitrogen, total phosphorus, and total suspended solids. In accordance with Part II.A.13.d, the City currently envisions implementing the following BMPs during the next reporting period: street sweeping, urban nutrient management, and stream restoration.

As described in the City's DEQ-approved *Combined Benthic and Bacteria TMDL Action Plan for the Rivanna River* and in the City's *Sediment TMDL Action Plan for Moores Creek, Lodge Creek, Meadow Creek, and Schenks Branch*, the City intends to demonstrate its progress on implementation of the Action Plans by tracking and reporting on BMPs in its MS4 Annual Reports. As such, this Annual Report details the implementation status of the BMPs identified in the Action Plans and provides the summary of actions conducted to implement the Action Plans as required by Part II.B.9. These BMPs are notated “*Local TMDL Action Plan BMP” in the Annual Report.

Report Format

The information summarizing program status is presented in a matrix format with a separate section for each of the six MCMs.

Under each MCM is a series of BMPs and associated measurable goals. A column is provided for each of the five years of the permit term. For the purposes of this Year 4 Annual Report, results are posted in the column labeled “FY22”.

Results are presented in one of three colors indicating the status of that program element:

- Green – activity/action proposed has been successfully completed in the proposed timeframe.
- Yellow – activity/action has been partially completed in the proposed timeframe.
- Red – activity/action has not been completed in the proposed timeframe.

Cells in the various annual columns that are shaded grey indicate program elements that are not applicable in those permit years.

In every case, a further explanation of the BMP status is provided in the rows directly below the subject program element. The previous year's BMP status is included in grey to provide context to DEQ in your review.

City of Charlottesville, Virginia

PERMIT NUMBER VAR040051

MS4 PERMIT YEAR 4 (JULY 1, 2021 - JUNE 30, 2022) ANNUAL REPORT

MCM #1: PUBLIC EDUCATION AND OUTREACH ON STORMWATER IMPACTS						
Best Management Practice	Measurable Goal	FY19	FY20	FY21	FY22	FY23
1.1 - Regional Stormwater Partnership <small>*Local TMDL Action Plan BMP</small>	<i>Participate in a Minimum of Six Meetings, Summarize Activities, Maintain Website, One Major Event/Activity Per Permit Cycle</i>					
<p>FY22 - The City continued its involvement in the Rivanna Stormwater Education Partnership (RSEP) this permit year. The RSEP exceeded its meeting frequency commitment, meeting eight times during the permit year. The RSEP continued to conduct public education campaigns to educate the general public and the local business community on steps they can take to reduce their impacts on stormwater quality. A range of outreach strategies were utilized this year, including sponsorship of a Rivanna River Watershed cleanup event, an informational table at the 2022 Rivanna RiverFest, an expanded social media and online presence, and the distribution of stickers, magnets, and brochures. RSEP provided 200 <i>Stormwater Pollution Prevention: A Lawn and Landscape Guide</i> brochures, as well as a set of stickers and magnets to the Piedmont Master Gardeners for distribution at their annual Native Plant Sale. The RSEP continued to host both its website (www.rivanna-stormwater.org), and its GIS-based Story Map website, The Rivanna River Watershed (www.tinyurl.com/RivannaStoryMap). The Love Your Watershed campaign (www.rivanna-stormwater.org/love-your-watershed) continued as a social media and online campaign designed to motivate residents of the greater Charlottesville area to reduce their impact on waterways and ultimately improve local water quality. Social media posts included the topics of proper grease disposal during the Thanksgiving holiday, leaf and yard debris management, winter salt use, and redirecting downspouts onto vegetated areas. The campaign will continue for the foreseeable future. The RSEP partners coordinated on the implementation of the regional Public Education and Outreach Plan for the current five year MS4 permit cycle.</p>						
<p>FY21 - The City continued its involvement in the Rivanna Stormwater Education Partnership (RSEP) this permit year. The RSEP exceeded its meeting frequency commitment, meeting seven times during the permit year. The RSEP continued to conduct public education campaigns to educate the general public and the local business community on steps they can take to reduce their impacts on stormwater quality. A range of outreach strategies were utilized this year, including utility bill inserts, posters on local public transportation buses, an expanded social media and online presence, a newspaper advertisement, and brochures. The RSEP continued to host its website (www.rivanna-stormwater.org), and its GIS-based Story Map website, The Rivanna River Watershed (www.tinyurl.com/RivannaStoryMap). The Love Your Watershed campaign (www.rivanna-stormwater.org/love-your-watershed) continued as a social media and online campaign designed to motivate residents of the greater Charlottesville area to reduce their impact on waterways and ultimately improve local water quality. The campaign will continue for the foreseeable future. The RSEP partners coordinated on the implementation of the regional Public Education and Outreach Plan for the current five year MS4 permit cycle.</p>						

City of Charlottesville, Virginia

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<p><i>1.2 - City Environmental Webpages</i> <i>*Local TMDL Action Plan BMP</i></p>	<p><i>Maintain Website, Provide Stormwater Education Information</i></p>					
<p>FY22 - The City continued to maintain several pages of stormwater, green infrastructure, and environmental content on the official City website, www.charlottesville.gov, as described below in last year's Annual Report.</p>						
<p>FY21 - The City continued to maintain several pages of stormwater, green infrastructure, and environmental content on the official City website, www.charlottesville.gov. The website contains information on stormwater, local waterways and watersheds, the City's stormwater management program (including the MS4 Program Plan, current MS4 Permit and coverage letter, and most recent Annual Reports), the City's Water Resources Protection Program (WRPP) and Stormwater Utility (SWU), green stormwater infrastructure, and the Adopt-A-Stream program. Online reporting of illegal dumping, illicit discharges, or other environmental problems is also available through the City website, as well as through the MyCville app, which enables real-time reporting and tracking of water pollution concerns. The website also provides a mechanism for the public to provide input on the City's MS4 Program Plan. The webpages are www.charlottesville.gov/380/Stormwater-Management-Program, www.charlottesville.gov/wrpp, www.charlottesville.gov/greencity, and www.charlottesville.gov/greeninfrastructure. The City continued to host CityGreen, an interactive, online mapping tool that shows "green" projects and resources around Charlottesville that contribute to making Charlottesville "A Green City". CityGreen can be found at www.charlottesville.gov/citygreenmap.</p>						

City of Charlottesville, Virginia

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MS4 PERMIT YEAR 4 (JULY 1, 2021 - JUNE 30, 2022) ANNUAL REPORT

<i>1.3 - Youth Stormwater Education</i> <i>*Local TMDL Action Plan BMP</i>	<i>Document and Describe Number of Activities Targeting Youths</i>					
	<p>FY22 - The City was active in engaging youth in stormwater education activities during the permit year. The City's Department of Parks and Recreation (DPR) continued to engage youths in active outdoor environmental education in parks and natural areas through their Summer Day Camp, Little Nature Explorers, Outdoor Artists, and Canoeing with Kids programs. These programs provided opportunities to explore and learn about natural environments through visits to local parks and kayaking the Rivanna River and served 83 children this permit year. The City's Water Resources Specialist worked with a student from Monticello High School conducting his senior year internship. The student learned about green stormwater infrastructure and visited City projects. Finally, the City again partnered with Charlottesville City Schools (CCS) and the Thomas Jefferson Soil and Water Conservation District (TJSWCD) to provide a Meaningful Watershed Educational Experience (MWEE) to 339 City fourth grade students, encouraging and engaging students' participation in environmental learning about the Rivanna River Watershed and our place in the Chesapeake Bay Watershed. The watershed education programs featured virtual engagement opportunities and an online Educational Resource Library available from the TJSWCD website, www.tjswcd.org/education-resources/. This provided students, families, and teachers various resources to explore on a weekly basis.</p>					
	<p>FY21 - The City was active in engaging youth in stormwater education activities during the permit year. The City's Department of Parks and Recreation (DPR) continued to engage youths in active outdoor environmental education in parks and natural areas through their Park Explorers, Nature Seek & Peek, Voices from the Land, and Intro to Kayaking the Rivanna River programs. These programs provided opportunities to explore and learn about natural environments through visits to local parks and kayaking the Rivanna River and served 35 children this permit year. DPR also facilitated tours for small groups of preschool and elementary children to explore new trails built on newly acquired City parkland near the Ragged Mountain Reservoir to learn about forests, geology, and stream ecology. The children then drew hand-made pictures of what they saw on their hike along with making thank you cards for the former property owner who generously donated half its value to the public as parkland. Finally, the City again partnered with Charlottesville City Schools (CCS) and the Thomas Jefferson Soil and Water Conservation District (TJSWCD) to provide a Meaningful Watershed Educational Experience (MWEE) to 329 City fourth grade students, encouraging and engaging students' participation in environmental learning about the Rivanna River Watershed and our place in the Chesapeake Bay Watershed. The watershed education programs featured an online Educational Resource Library available from the TJSWCD website, www.tjswcd.org/education-resources/. This provided students, families, and teachers resources to explore on a weekly basis while students finished their school year learning from home.</p>					

City of Charlottesville, Virginia

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MS4 PERMIT YEAR 4 (JULY 1, 2021 - JUNE 30, 2022) ANNUAL REPORT

<p>1.4 - Illicit Discharge and Pollution Prevention Education *Local TMDL Action Plan BMP</p>	<p><i>Document and Describe Number and Type of Education Efforts</i></p>					
<p>FY22 - Illicit discharge educational information was targeted to various audiences again this permit year, including the general public, local businesses, and City employees. As described above in BMP 1.1, the RSEP continued to provide educational messages through various media to the general public that stress the connection of the stormwater drainage system to local waterways, as well as best management practices that citizens can employ to prevent stormwater pollution. The PSA that was created by the City's Communications Office and Department of Public Works (DPW) and that is described below in last year's Annual Report continued to air on the City's public access TV10 station during the permit year. PSA slides developed by the RSEP on pet waste management, car washing, and lawn care were also aired on the City's TV10.</p>						
<p>FY21 - Illicit discharge educational information was targeted to various audiences again this permit year, including the general public, local businesses, and City employees. As described above in BMP 1.1, the RSEP continued to provide educational messages through various media to the general public that stress the connection of the stormwater drainage system to local waterways, as well as best management practices that citizens can employ to prevent stormwater pollution. The PSA that was created by the City's Communications Office and Department of Public Works (DPW) continued to air on the City's public access TV10 station during the permit year. The sixty second video features a man and his son embarking on a fishing trip just after a storm. The son asks his father a series of questions as they journey to the river, following the path of the stormwater from the sky, to the parking lot, into the stormwater drainage system, through small streams, and finally into the Rivanna River. The video is also featured online at the City's video hosting site, Vimeo.com/Cvilletv10. PSA slides developed by the RSEP on pet waste management, car washing, and lawn care were also aired on the City's TV10.</p>						
<p>1.5 - Public Education and Outreach Plan *Local TMDL Action Plan BMP</p>	<p><i>Identify high priority issues; select strategies for public education and outreach; identify public audiences; delivery of high-priority messages.</i></p>					
<p>FY22 - The updated Public Education and Outreach Plan that was developed in coordination with the RSEP continued to be implemented this permit year. Education and outreach activities were conducted using the following strategies to communicate and address the high-priority issues of runoff volume reductions, potential runoff pollutants, and TMDL impairments (bacteria, sediment, nitrogen, phosphorus): media materials (PSAs on public access TV, City and RSEP websites including stormwater, green infrastructure, and Love Your Watershed content, Rivanna River Watershed Story Map, CityGreen Map, and social media posts), traditional written materials (RSEP brochures), alternative materials (Love Your Watershed stickers and magnets, Love Your Watershed logo on t-shirt and other promotional items), and speaking engagements (presentation at a public meeting and to the Charlottesville Tree Commission).</p>						
<p>FY21 - The updated Public Education and Outreach Plan that was developed in coordination with the RSEP continued to be implemented this permit year. Education and outreach activities were conducted using the following strategies to communicate and address the high-priority issues of runoff volume reductions, potential runoff pollutants, and TMDL impairments (bacteria, sediment, nitrogen, phosphorus): media materials (newspaper advertisement in the Cville Weekly, PSAs on public access TV, City and RSEP websites including stormwater, green infrastructure, and Love Your Watershed content, Rivanna River Watershed Story Map, CityGreen Map, and social media posts), traditional written materials (utility bill inserts, RSEP brochures, posters on local public transportation buses), and alternative materials (Love Your Watershed stickers).</p>						

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MCM #2: PUBLIC INVOLVEMENT / PARTICIPATION

Best Management Practice	Measurable Goal	FY19	FY20	FY21	FY22	FY23
<i>2.1 - Volunteer Stream Clean Up</i> <i>*Local TMDL Action Plan BMP</i>	<i>Support At Least Two Events, Document Number of Events and Volunteers</i>					

FY22 - The City supported four stream clean-up events over the course of the permit year. The City partnered with the Rivanna Conservation Alliance (RCA), The Nature Conservancy (TNC), the University of Virginia (UVA), and the general public on the clean-ups. The events involved 244 volunteers and collected four dump truck loads, five pick-up truck loads, and 153 bags of trash and debris, 72 tires, as well as other bulky items. One of the events weighed the trash collected, which came in at over 1.5 tons. The City is counting these stream clean-ups as the first of the four activities required by the MS4 General Permit that are meant to provide an opportunity for public involvement to improve water quality and support local restoration and cleanup projects. The metric to determine if the activity is beneficial to water quality is the amount of trash and debris removed; based upon the large amount removed, the City has determined that the activity is beneficial to improving water quality.

FY21 - The City supported eight stream clean-up events over the course of the permit year. The City partnered with the Rivanna Conservation Alliance (RCA), The Nature Conservancy (TNC), Charlottesville Pavilion, Sun Tribe Solar, and the general public on the clean-ups. The events involved 169 volunteers and collected one dump truck load, two pick-up truck loads, and 80 bags of trash and debris, 149 tires, as well as other items such as two couches, a bed frame, a hubcap, and an air conditioner. The City is counting these stream clean-ups as the first of the four activities required by the MS4 General Permit that are meant to provide an opportunity for public involvement to improve water quality and support local restoration and cleanup projects. The metric to determine if the activity is beneficial to water quality is the amount of trash and debris removed; based upon the large amount removed, the City has determined that the activity is beneficial to improving water quality.

<i>2.2 - Adopt-A-Stream Program</i> <i>*Local TMDL Action Plan BMP</i>	<i>Document Number of Events, Volunteers, Volunteer Hours, Debris Collected</i>					
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FY22 - The Adopt-a-Stream Program continues to be administered by the Environmental Sustainability Division of the DPW. During the permit year, 2 clean-ups were conducted, which involved 16 volunteers and 32 volunteer hours, collecting 19 bags of trash.

FY21 - The Adopt-a-Stream Program continues to be administered by the Environmental Sustainability Division of the DPW. During the permit year, 2 clean-ups were conducted, which involved 12 volunteers and 24 volunteer hours, collecting 6 bags of trash.

<i>2.3 - Tree Planting Program</i> <i>*Local TMDL Action Plan BMP</i>	<i>Hold At Least Two Events, Document Number of Events, Volunteers, and Trees Planted</i>					
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FY22 - The City's DPR worked with the Charlottesville Area Tree Stewards (CATS) and four volunteers to plant approximately 25 hardwood shrubs in Riverview Park and Forest Hills Park. The City also partnered with CATS to plant 17 trees at Darden Towe Park. As part of the annual Arbor Day event, four volunteers planted a Willow oak at Clark Elementary School.

FY21 - The City partnered with the Charlottesville Area Tree Stewards (CATS) to plant 10 native trees and shrubs on the campus of Jackson-Via Elementary School, including hackberries, redbuds and red twig dogwoods. A London Plane tree was donated by Dominion Energy and planted in Washington Park by a local Girl Scout troop on Arbor Day.

City of Charlottesville, Virginia

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2.4 - Watershed and Water Quality Activities <i>*Local TMDL Action Plan BMP</i>	Document Number and Description of Activities					
<p>FY22 - The City was active in organizing, participating in, promoting, and sponsoring watershed and water quality activities in the community this permit year. The City's DPR hosted 25 St. Anne's-Belfield High School students at the City's Heywood Community Forest property, leading a guided hike and instructing students on tree species identification, geology, and general natural history. DPR also hosted an invasive plant removal and site restoration at Washington Park, where approximately 35 volunteers helped remove invasive plants from the Bog Garden trail. The focus of the work was on removing invasive vines and liberating native trees and shrubs. Debris was cut and dragged off site by DPR staff and was later chipped, with mulch to be used in other DPR projects in the future. DPR resumed its Adaptive Recreation Program, which serves individuals with physical and/or mental disabilities whose recreational needs cannot be met by regular programs. The program included kayaking on Beaver Creek Reservoir and tubing on the Rivanna River and served 19 individuals. The City is counting this support as the second of the four activities required by the MS4 General Permit that are meant to provide an opportunity for public involvement to improve water quality and support local restoration and cleanup projects. The metric to determine if the activity is beneficial to water quality is the number of participants; based upon the number of participants, 79, the City has determined that the activity is beneficial to improving water quality.</p> <p>The City sponsored, served on the planning committee, and participated in the 2022 Rivanna RiverFest, which included the Fix-a-Leak Family 5K, Rivanna River Race, community tabling, and a celebration at the Rivanna River Company. Several hundred community members attended the event. The City is counting this support as the third of the four activities required by the MS4 General Permit that are meant to provide an opportunity for public involvement to improve water quality and support local restoration and cleanup projects. The metric to determine if the activity is beneficial to water quality is the number of attendees; based upon the number of people attending the event, estimated at several hundred, the City has determined that the activity is beneficial to improving water quality.</p> <p>The City continued to provide financial and technical support to RCA and its community-based water quality monitoring program StreamWatch. The City is counting this support as the fourth of the four activities required by the MS4 General Permit that are meant to provide an opportunity for public involvement to improve water quality and support local restoration and cleanup projects. The metric to determine if the activity is beneficial to water quality is the number of sites monitored by StreamWatch; based upon the number of sites monitored, 68, the City has determined that the activity is beneficial to improving water quality.</p>						
<p>The City's Water Resources Specialist provided a tour of City green stormwater infrastructure facilities to a Watershed Management class from Longwood University, and collaborated with the Chesapeake Bay Landscape Professional (CBLP) program to arrange for a tour of green stormwater infrastructure at Charlottesville High School (CHS) for a CBLP Level 1 certification class. The City continued the Pollocks Branch Walkable Watershed process. Coordination continued amongst the City and the Charlottesville Redevelopment and Housing Authority (CRHA) for construction of the bridge which will be used to provide a pedestrian crossing of Pollocks Branch, as well as for the installation of a natural plant community-based landscape that will treat stormwater from a residential street; stream clean-ups of Pollocks Branch were performed; and an ash tree that was felled was used to create wood slabs that will be fashioned into benches to be placed in a pocket park by the stream.</p> <p>City staff continue to serve on and support several public boards and bodies. The City's Urban Forester continued to provide staff support to the City Tree Commission. DPR staff also provide support to the Parks and Recreation Advisory Board, CATS, and the Botanical Garden of the Piedmont. The City's Water Resources Specialist is an active member of RCA's Science Advisory Committee. The City continued its rain barrel rebate program, which provides \$30 back to residents who purchase and install a rain barrel; rebates for 18 rain barrels were issued, for a total of \$600.</p>						

City of Charlottesville, Virginia

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MS4 PERMIT YEAR 4 (JULY 1, 2021 - JUNE 30, 2022) ANNUAL REPORT

FY21 - The City was active in organizing, participating in, promoting, and sponsoring watershed and water quality activities in the community this permit year. The City continued the Pollocks Branch Walkable Watershed process. During the permit year coordination continued amongst the City and the Charlottesville Redevelopment and Housing Authority (CRHA) for construction of the bridge which will be used to provide a pedestrian crossing of Pollocks Branch, as well as for the installation of a natural plant community-based landscape that will treat stormwater from a residential street; stream clean-ups of Pollocks Branch were performed; and collaboration continued with the University of Virginia (UVA) and South First Street residents on the reuse of an ash tree that will be felled as part of the bridge construction.

The City's DPR held Healthy Hike Breaks and Winter Bird Walks, engaging community members on the trails in local parks to learn about Rivanna watershed flora and fauna. These programs served 56 adults. The City is counting this support as the second of the four activities required by the MS4 General Permit that are meant to provide an opportunity for public involvement to improve water quality and support local restoration and cleanup projects. The metric to determine if the activity is beneficial to water quality is the number of participants; based upon the number of participants, 56, the City has determined that the activity is beneficial to improving water quality. DPR staff also worked with the Rivanna River Company, RCA, and community volunteers to rebuild a critical Rivanna River access point in the City's Riverview Park.

The City continued to provide financial and technical support to RCA and its community-based water quality monitoring program StreamWatch. The City is counting this support as the third of the four activities required by the MS4 General Permit that are meant to provide an opportunity for public involvement to improve water quality and support local restoration and cleanup projects. The metric to determine if the activity is beneficial to water quality is the number of sites monitored by StreamWatch; based upon the number of sites monitored, 68, the City has determined that the activity is beneficial to improving water quality.

The City's Water Resources Specialist collaborated with the Chesapeake Bay Landscape Professional (CBLP) program to arrange for and provide a tour of green stormwater infrastructure at Charlottesville High School (CHS) for a CBLP Level 1 certification class. The tour provided insights into the planning, construction, and maintenance of a bioretention basin, rainwater harvesting system, vegetated filter strip, and permeable paver system that the City has installed to treat stormwater from the CHS campus.

City staff continue to serve on and support several public boards and bodies. The City's Water Resources Specialist sits on RCA's Science Advisory Committee. The standing Water Resources Protection Program (WRPP) Advisory Committee, appointed by the Charlottesville City Council to provide oversight of the WRPP, did not meet during the permit year because of the COVID-19 pandemic, but did continue to communicate via email and received DPW staff support. The City's Urban Forester continued to provide staff support to the City Tree Commission. DPR staff also provide support to the Parks and Recreation Advisory Board, CATS, and the Botanical Garden of the Piedmont. The City continued its rain barrel rebate program, which provides \$30 back to residents who purchase and install a rain barrel; rebates for 32 rain barrels were issued, for a total of \$960. The City is counting this support as the fourth of the four activities required by the MS4 General Permit that are meant to provide an opportunity for public involvement to improve water quality and support local restoration and cleanup projects. The metric to determine if the activity is beneficial to water quality is the number of rebates issued; based upon the number of rebates, 32, the City has determined that the activity is beneficial to improving water quality.

City staff participated in the Urban Rivanna River Corridor Plan, a joint effort between the City and Albemarle County, along with other stakeholders, to develop a vision and action plan for the Rivanna River. The process is intended to facilitate coordination on making a cleaner, safer, and more livable waterway that serves as a catalyst for community investment. Environmental protection of the riparian system has been established as paramount in all activities and land uses in the river corridor.

The City is also continuing the process of updating the Comprehensive Plan, a general framework that defines broad policy recommendations to guide decision-making. The following specific goals are included: Improving and maintaining stormwater conveyance infrastructure to provide a safe and effective public drainage system while mitigating related impacts to water resources; and Protect, enhance, and restore the integrity of the city's water resources. Both of these planning efforts had a significant public engagement component.

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<i>2.5 - Public Involvement</i> <i>*Local TMDL Action Plan BMP</i>	<i>MS4 Program Plan and Annual Reports Posted to City Website, Provide for Public Comment on Proposed MS4 Program Plan</i>					
<p>FY22 - The City has maintained its MS4 Program Plan in accordance with the MS4 General Permit. The City keeps a copy of the most current version of the MS4 Program Plan posted to its website. The City also keeps copies of the Annual Reports required by the MS4 General Permit posted to its website; a copy of the most current Annual Report is posted within 30 days of submittal of the report to DEQ. The MS4 Program Plan and Annual Reports can be found at the following webpage: www.charlottesville.gov/380/Stormwater-Management-Program. The public can provide input on the MS4 program via this webpage; no public input was received during the permit year.</p>						
<p>FY21 - The City has maintained its MS4 Program Plan in accordance with the MS4 General Permit. The City keeps a copy of the most current version of the MS4 Program Plan posted to its website. The City also keeps copies of the Annual Reports required by the MS4 General Permit posted to its website; a copy of the most current Annual Report is posted within 30 days of submittal of the report to DEQ. The MS4 Program Plan and Annual Reports can be found at the following webpage: www.charlottesville.gov/380/Stormwater-Management-Program. The public can provide input on the MS4 program via this webpage; no public input was received during the permit year.</p>						

City of Charlottesville, Virginia

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MS4 PERMIT YEAR 4 (JULY 1, 2021 - JUNE 30, 2022) ANNUAL REPORT

MCM #3: ILLICIT DISCHARGE DETECTION AND ELIMINATION

Best Management Practice	Measurable Goal	FY19	FY20	FY21	FY22	FY23
3.1 - Illicit Discharge Detection and Elimination Program <i>*Local TMDL Action Plan BMP</i>	<i>Develop Procedures, Keep Records of IDDE Program, Including Number of Outfalls Screened and Illicit Discharges Addressed</i>					
<p>FY22 - The City continued to implement its illicit discharge detection and elimination (IDDE) program this permit year. The City responded to several reports of water pollution from internal City staff and the public; see Attachment A for a list of illicit discharges to the City's MS4. Additionally, dry weather screening of 25 of the City's MS4 outfalls was conducted using a tailored version of the Center for Watershed Protection's Outfall Reconnaissance Inventory. The remaining 25 outfalls will be screened before the end of the permit year (by October 31, 2022). The dry weather screening did not detect any illicit discharges and as a result no follow up actions were necessitated.</p>						
<p>FY21 - The City continued to implement its illicit discharge detection and elimination (IDDE) program this permit year. The City responded to several reports of water pollution from internal City staff and the public; see Attachment A for a list of illicit discharges to the City's MS4. Additionally, dry weather screening of 60 of the City's MS4 outfalls was conducted using a tailored version of the Center for Watershed Protection's Outfall Reconnaissance Inventory. The dry weather screening did not detect any illicit discharges and as a result no follow up actions were necessitated. The City contracted with the TJSWCD to conduct the dry weather screening this permit year.</p>						
3.2 - Maintenance of GIS Data, MS4 Map, and Information Table <i>*Local TMDL Action Plan BMP</i>	<i>Document Efforts Related to Maintenance of GIS Data, Up-to-date MS4 Map and Information Table</i>					
<p>FY22 - The City continued to maintain GIS data layers of its stormwater infrastructure system, areas where streams flow through the stormwater infrastructure system, waters receiving discharges from the City's MS4, the outfalls of the City's MS4 and their drainage areas, the MS4 regulated service area, and stormwater management facilities (SMF) owned or operated by the City. The City MS4 Map and associated Information Table were updated to reflect changes to the MS4 occurring on or before June 30 of the reporting year.</p>						
<p>FY21 - The City continued to maintain GIS data layers of its stormwater infrastructure system, areas where streams flow through the stormwater infrastructure system, waters receiving discharges from the City's MS4, the outfalls of the City's MS4 and their drainage areas, the MS4 regulated service area, and stormwater management facilities (SMF) owned or operated by the City. The City MS4 Map and associated Information Table were updated to reflect changes to the MS4 occurring on or before June 30 of the reporting year.</p>						

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3.3 - Notification of Physically Interconnected MS4s	Document Existence of Physical Interconnections and Written Notification					
FY22 - No known physical interconnections to any downstream MS4s were established or discovered after the effective date of the MS4 General Permit.						
FY21 - No known physical interconnections to any downstream MS4s were established or discovered after the effective date of the MS4 General Permit.						
3.4 - Online Reporting of Environmental Concerns and Illicit Discharges <small>*Local TMDL Action Plan BMP</small>	Track Problems Reported and City Responses					
FY22 - The City continues to maintain online reporting features on the City website and has worked with the RSEP to administer the regional Water Pollution Hotline. These features allow public reporting of potential illicit discharges. The City conducts investigations of the reports to ensure that the discharges are addressed and proper corrective actions are taken by the responsible party.						
FY21 - The City continues to maintain online reporting features on the City website and has worked with the RSEP to administer the regional Water Pollution Hotline. These features allow public reporting of potential illicit discharges. The City conducts investigations of the reports to ensure that the discharges are addressed and proper corrective actions are taken by the responsible party.						

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MCM #4: CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

Best Management Practice	Measurable Goal	FY19	FY20	FY21	FY22	FY23
4.1 - Erosion and Sediment Control Program <i>*Local TMDL Action Plan BMP</i>	Track Number of Inspections Conducted and Type and Number of Enforcement Actions, Status of E&S Control Program					

FY22 - The City's Erosion and Sediment Control (E&S) Program continues to be administered by DPW in accordance with, and is currently considered "consistent" with, state standards. The City's E&S Program is implemented in accordance with Part I.E.4.a (1) of the MS4 General Permit. A total of 1,650 E&S and Virginia Stormwater Management Program (VSMP) inspections were conducted during the permit year. Enforcement actions stemming from these inspections included the issuance of 772 Corrective Action Reports, five Notices to Comply, and five Stop Work Orders. New checklist revisions related to E&S and stormwater management (SWM) were undertaken and these revised documents were still under development at the end of the permit year. The process to perform formal changes to City Standards and Design Manual (SADM) checklists was in progress during the permit year.

FY21 - The City's Erosion and Sediment Control (E&S) Program continues to be administered by DPW in accordance with, and is currently considered "consistent" with, state standards. The City's E&S Program is implemented in accordance with Part I.E.4.a (1) of the MS4 General Permit. A total of 2,123 E&S and Virginia Stormwater Management Program (VSMP) inspections were conducted during the permit year. Enforcement actions stemming from these inspections included the issuance of 406 Corrective Action Reports, six Notices to Comply, and six Stop Work Orders. No formal procedural changes to the E&S Program were made this past permit year; however the City continued to develop the new "Dirt Watcher" application, which is currently being used on project sites. The City is further developing management dashboards for E&S inspections. The City is excited about the potential for this system and looks forward to continued development and formalizing of standard operating procedures in FY22.

4.2 - General Permit for Discharges From Construction Activities <i>*Local TMDL Action Plan BMP</i>	Keep Evidence of Permit Issuance in Project File					
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FY22 - During the permit year, four projects located in the city were issued initial coverage under the General VPDES Permit for Discharges of Stormwater from Construction (CGP).

FY21 - During the permit year, seven projects located in the city were issued initial coverage under the General VPDES Permit for Discharges of Stormwater from Construction (CGP) and one project was reissued coverage.

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MCM #5: POST-CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND DEVELOPMENT ON PRIOR DEVELOPED LANDS

Best Management Practice	Measurable Goal	FY19	FY20	FY21	FY22	FY23
5.1 - Stormwater Management Materials <i>*Local TMDL Action Plan BMP</i>	<i>Keep Materials Available on City Website, Document Significant Changes, Updates, or New Materials</i>					
<p>FY22 - No formal procedural changes were made this past permit year; however the City continues to make improvements to the “Dirt Watcher” application, which is currently undergoing use on project sites. “Dirt Watcher” is a combination of mobile inspection applications, City maintained databases, management dashboards, and interactive GIS maps. City inspectors can log digital inspections at the project site and submit data to Dirt Watcher. This information is stored in a database and synchronizes with dashboards and maps, which allows the creation of .pdf inspection reports and maps that contain project status and information that can be accessed in the office or at the construction site using mobile devices. The City is further developing management dashboards for project management of Erosion and Sediment Control inspections and has started the process of creating a new system for SWM and stormwater pollution prevention plan (SWPPP) inspections. In addition, the City has selected a vendor to create a new Enterprise Land Management (ELM) system for permitting. Part of this scope will be to include organizational assistance with our developing inspection applications. The City looks forward to the continued development and formalizing of Standard Operating Procedures. Updates were made to the City’s E&S/SWM Plan and Plan Amendment Applications.</p>						
<p>FY21 - The City has continued to make various stormwater management materials publicly available including Charlottesville City Code Chapter 10, Water Protection, and the City Standards and Design Manual (SADM), Chapter 5, Stormwater Management. In December 2020 several new checklists and charts were officially added to the SADM. The additions consisted of an “Outfall Accounting Form” and the “MS4 Reporting Chart”, or the MS4 Reporting Chart with Forested Open Space to be included on Stormwater Management (SWM) plans. This also included a new “Engineering Completeness Review Checklist” that will be required with SWM plan submissions. In addition, the process to perform changes to SADM details is in progress and moving towards the next phase of completion.</p> <p>As a part of the City’s requirement to administer a local Virginia Stormwater Management Program (VSMP), a guidance document was created to provide explanations of key SWM outfall requirements. This is identified as the City’s VSMP Technical Guidance Document DRAFT 1.0. In addition, BMP Pre-Inspection and Post-Inspection Template letters used by the City were updated.</p>						
5.2 - Development Plan Review <i>*Local TMDL Action Plan BMP</i>	<i>Document Number of Site Plans Reviewed</i>					
<p>FY22 - The Department of Neighborhood Development Services (NDS) continues to administer the site plan review process for the City. During the permit year, eight site plans with a stormwater management component were received by DPW’s Engineering Division. This is the number of plans that were initially submitted for review during the permit year. Many of these plans will eventually be approved, but some may end up being denied, on hold for a period of time, or potentially approved but never implemented.</p>						
<p>FY21 - The Neighborhood Development Services (NDS) Department continues to administer the site plan review process for the City. During the permit year, 11 site plans with a stormwater management component were received by DPW’s Engineering Division. This is the number of plans that were initially submitted for review during the permit year. Many of these plans will eventually be approved, but some may end up being denied, on hold for a period of time, or potentially approved but never implemented.</p>						

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<p>5.3 - Structural Stormwater Management Facility and Best Management Practice Inventory and Reporting *Local TMDL Action Plan BMP</p>	<p><i>Maintain Updated Database, Annual Certification Statements</i></p>					
<p>FY22 - DPW's Engineering and Environmental Sustainability Divisions maintain a database of public and private structural stormwater management facilities (SMF) in the city; all best management practices (BMP) that the City implements to meet Chesapeake Bay TMDL pollutant of concern load reduction requirements are also tracked. The City electronically reported SMFs that were installed as part of a project that did not have coverage under the CGP to the DEQ BMP Warehouse on September 30, 2022. The City did not complete construction of any projects requiring coverage under the CGP.</p>						
<p>FY21 - DPW's Engineering and Environmental Sustainability Divisions maintain a database of public and private structural stormwater management facilities (SMF) in the city; all best management practices (BMP) that the City implements to meet Chesapeake Bay TMDL pollutant of concern load reduction requirements are also tracked. The City electronically reported SMFs that were installed as part of a project that did not have coverage under the CGP to the DEQ BMP Warehouse. The City did not complete construction of any projects requiring coverage under the CGP.</p>						
<p>5.4 - Structural Stormwater Management Facility Inspection and Maintenance Program *Local TMDL Action Plan BMP</p>	<p><i>Track Number of Inspections and Number and Type of Enforcement Actions, Description of Significant Maintenance, Repair, or Retrofit Activity</i></p>					
<p>FY22 - The City's SMF inspection and maintenance program remains active. The program typically follows the calendar year with the first round of inspections starting in late winter or early spring. For the second half of the calendar year, post inspection letters are typically sent to property owners, HOA representatives, and property managers. Re-inspections are performed for failed facilities and follow-up letters sent to the responsible party. For the first half of the 2022 calendar year, most City-owned SMFs were inspected with a few underground detention systems remaining. Zero inspections of privately owned facilities occurred during the permit year. Inspections are planned for the second half of the 2022 calendar year; the City plans to send notices to property owners and begin the first round of inspections. 29 City-owned SMFs were inspected with 17 facilities failing initial inspections. Revised management plans for public BMPs are being developed with coordination across several City Departments. Underground detention facilities owned by the City are not part of the City's TMDL Action Plans and will be subject to an alternative inspection frequency (per 9VAC25-890-40, Part 1.E.5.b.2) of once every three years.</p> <p>Vegetative maintenance work to control invasive plant species was performed at several City owned SMFs, including the Charlottesville High School (CHS) vegetated filter strip, Azalea Park constructed wetlands, Old Lynchburg Road bioretention basin, and Fontaine Fire Station bioretention basins.</p> <p>Maintenance was performed on the City's vegetated filter strip located at CHS. Maintenance included removal of sediment and accumulated debris from gravel diaphragms and level spreaders; cleaning and replacing of stone within gravel diaphragms and level spreaders; and installation of a Filtrexx sock for flow diversion. Maintenance was also performed at the City's constructed wetlands in Azalea Park. Accumulated sediment was removed from the forebay and behind one of the wetland's weir walls, and a bypassing issue affecting the same weir wall was addressed.</p>						
<p>FY21 - The City's SMF inspection and maintenance program remains active. The program typically follows the calendar year with the first round of inspections starting in late winter or early spring. For the second half of calendar year 2020, post inspection letters were sent to property owners, HOA representatives, and property managers. Re-inspections were completed for "failed" facilities and follow-up letters were sent to the responsible party. For the 2021 calendar year, the initial notices to property owners were mailed on May 25, 2021. The first round of inspections occurred and follow up and final inspections will take place in the next fiscal year as needed. 20 privately-owned SMFs were inspected with 13 facilities failing initial inspections and one requiring further inspections before determining the status. Notification letters will be sent in the near future with a 60 day requirement to remedy the deficiencies noted. 19 City owned SMFs were inspected with 16 facilities failing initial inspections. Notices for City owned facilities are planned to be sent in the near future. The remaining facilities to be inspected are primarily underground detention and other BMPs not incorporated into the City's TMDL action plans.</p> <p>Vegetative maintenance work to control invasive plant species was performed at several City owned SMFs, including the CHS vegetated filter strip, Azalea Park constructed wetlands, Old Lynchburg Road bioretention basin, and Fontaine Fire Station bioretention basins.</p>						

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<p>5.5 - Urban Forest Management *Local TMDL Action Plan BMP</p>	<p><i>Track Urban Forest Management Efforts, Number of Trees Planted</i></p>					
<p>FY22 - Implementation of urban forest management efforts continued during the permit year. Tree planting and invasive plant management in City parks and public areas continued to be focus areas of urban forest management efforts. DPR planted (via contractors and DPR staff) 162 trees this permit year, which are typically two-inch caliper ball and burlap trees. Species are chosen as most appropriate for the location to be planted and to complement other species in the area. DPR held an Earth Day event in Washington Park, where approximately 35 volunteers focusing on cutting vines off trees, cutting back invasive vegetation, and hauling debris off site for disposal. DPR also worked with The Nature Conservancy (TNC) and volunteers to hold two invasive plant and vine removal, trash collection, and trail building days in Quarry Park. Invasive autumn olive plants were removed from Heyward Community Forest with the help of 18 volunteers from SNP Global.</p> <p>DPR continued their partnership with the Charlottesville Area Tree Stewards (CATS) to support invasive plant management and native plant restoration efforts in City parks and school campuses. CATS continued to improve public landscapes in The Grove at McIntire Park. With the help of community partners, CATS volunteers weeded and mulched the trees and shrubs they previously planted and expanded and improved the network of trails through the site. CATS also planted 17 trees at Darden Towe Park including Willow Oaks (<i>Quercus phellos</i>), Swamp White Oaks (<i>Quercus bicolor</i>), Blackgums (<i>Nyssa sylvatica</i>) and Tulip Trees (<i>Liriodendron tulipifera</i>), among others. Placed around the dog park and pavilion area, the trees are the beginning of a major reforestation of the park, where many trees have been lost to the emerald ash borer.</p> <p>DPR continued to work with the Tree Commission, which met once a month during the permit year. Meeting minutes and agendas were posted on the City website and attendees averaged 10-15 participants, with a range of urban forestry objectives discussed at length. The Tree Commission launched their ReLeaf Charlottesville program, with the goal to plant trees, preserve trees, and educate children and families about the value of trees to our health and well-being. The program will be a public-private partnership that aims to plant trees in and protect low-canopy neighborhoods from the heat impacts of climate change.</p> <p>The City maintained its Tree City USA status, having now held that status for 16 years. The annual Arbor Day celebration was held at Sojourners Church, with members of CATS, Charlottesville Tree Commission, and officials from the Virginia Department of Forestry and the City honoring the church's newly designated Landmark Tree, a magnificent American Elm. The celebration also included an additional tree planting ceremony at Clark Elementary School.</p> <p>The City Department of Utilities launched its Energy Saving Trees Program, which is intended to incentivize tree planting on private property in the city. The City pays the cost of the trees and residents are responsible for planting and care. 250 trees total were reserved in the first 48 hours of the program.</p>						
<p>FY21 - Implementation of urban forest management efforts continued during the permit year. Tree planting and invasive plant management in City parks and public areas continued to be focus areas of urban forest management efforts. DPR planted (via contractors and DPR staff) 23 trees this permit year, which are typically two-inch caliper ball and burlap trees. Species are chosen as most appropriate for the location to be planted and to complement other species in the area.</p> <p>DPR continued their partnership with the Charlottesville Area Tree Stewards (CATS) to support invasive plant management efforts in City parks and school campuses, including: continued maintenance of an area planted with native ferns and removal of English Ivy in a riparian buffer in Greenleaf Park; continued efforts to restore the natural landscape at Charlottesville's Jackson-Via Elementary School by removing invasive vines and shrubs from around native trees and shrubs CATS had previously planted; and removing English Ivy from trees in Northeast Park. CATS also continued to tend "The Grove" in McIntire Park, where they have planted new trees and worked to clean up existing stands. In addition to pruning and weeding, this ongoing effort includes liberating trees overtaken by vines and removing unwanted invaders, such as Callery Pear trees.</p> <p>DPR continued to work with the Tree Commission in a remote fashion due to the COVID 19 pandemic. DPR also created a new tree planting rubric that prioritizes tree planting locations based on different criteria, and is in the process of having a new urban tree canopy study completed.</p> <p>The City maintained its Tree City USA status, having now held that status for 15 years. The City's Urban Forester was joined by CATS leaders and state officials at Charlottesville's Walker Upper Elementary School for an Arbor Day celebration. In addition to the reading of a City proclamation, the event included presentations by students on the beautiful and diverse array of trees on the school's grounds.</p> <p>The Charlottesville City Council, working with the Charlottesville Tree Commission and CATS, designated six new trees to be protected by the City's Tree Conservation Ordinance. All six trees are on public property and include an American Elm outside Clark Elementary School, a Post Oak in Maplewood Cemetery, a Sycamore along the banks of the Rivanna River in Riverview Park, a Southern Red Oak in Oakwood Cemetery, a White Ash behind the Charlottesville-Albemarle Historical Society, and a Shumard Oak off the 250 Bypass. The trees are now protected from removal unless specifically authorized by City Council.</p>						

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<p>5.6 - Investigate Green Stormwater Infrastructure Retrofit Opportunities <i>*Local TMDL Action Plan BMP</i></p>	<p><i>Implementation of Retrofits</i></p>					
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FY22 - During the permit year, the City continued to investigate and pursue green stormwater infrastructure retrofit opportunities. As described below in last year's annual report, the City was awarded Stormwater Local Assistance Fund (SLAF) grants and began implementation of the design process of the stream restoration projects. One of these projects, the Schenks Branch Tributary stream restoration, advanced through the design and permitting process during the permit year and will continue to construction. The City decided not to pursue two other stream restoration projects. The design process included extensive collaboration with the Botanical Garden of the Piedmont (BGP), who leases land in the City's McIntire Park through which the Schenks Branch Tributary runs. The City held a meeting to present the project to the public, and also presented the project to the Tree Commission. An ArcGIS Story Map for the project was also created and launched - <https://bit.ly/schenksbranchtrib>. The design was finalized, the City issued an Invitation for Bids (IFB) for the construction of the project, and a Pre-Bid Meeting was held with prospective contractors as the permit year was coming to an end. The project will continue in the next permit year.

At the end of the permit year, the City issued a task order for a Targeted BMP Feasibility Assessment. The project will include an evaluation of the potential benefit of retrofitting several existing City SMFs to achieve additional nutrient removal. The retrofitting analysis will include a review of opportunities for rerouting additional flow into the SMFs to achieve additional nutrient removal; dredging of ponds to provide additional storage; identification of opportunities for automation of controls; and conversion of SMFs to a higher credit generating design such as a constructed wetland. Progress made on the project will be reported in the Permit Year 5 Annual Report.

FY21 - During the permit year, the City continued to investigate and pursue green stormwater infrastructure retrofit opportunities. The City was previously awarded Stormwater Local Assistance Fund (SLAF) grants, which will be matched by the City's Stormwater Capital Improvement Program fund to conduct stream restoration projects in the coming years. Proposals in response to the Request for Proposals (RFP) described below in last year's annual report for design and permitting services were received and reviewed by the City; interviews with top firms were conducted; negotiations with the selected firm were conducted; scopes of work and task orders were agreed upon; and the City entered into contract with Hazen and Sawyer. The design process was initiated, a kickoff meeting was held, and field assessment data was collected. Design and permitting will continue in the FY22 permit year.

The City and RCA wrapped up work on the stormwater planter boxes described below in last year's annual report. The planters are located at the City's Public Works/Utilities Administration Building on 4th Street NW. The project team filled the planters with rock, bioretention soil, and a variety of native plants, including little bluestem grass, asters, black-eyed susan, and purple lovegrass. The project will hold and treat nearly 50,000 gallons of stormwater each year, helping reduce erosion and pollution loads in Schenks Branch, Meadow Creek, and the Rivanna River downstream.

In conjunction with the design and construction of a new pedestrian trail along Water Street in downtown Charlottesville, a bioretention filter was installed.

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MINIMUM CONTROL MEASURE #6: POLLUTION PREVENTION / GOOD HOUSEKEEPING FOR FACILITIES OWNED OR OPERATED BY THE PERMITTEE WITHIN THE MS4 SERVICE AREA						
Best Management Practice	Measurable Goal	FY19	FY20	FY21	FY22	FY23
6.1 - Street Sweeping Program <i>*Local TMDL Action Plan BMP</i>	Sweep at Least 2,000 Non-Residential Curb Miles Annually					
FY22 - The City's street sweeping program continued this permit year, with 4,963 total curb miles swept.						
FY21 - The City's street sweeping program continued this permit year, with 6,211 total curb miles swept.						
6.2 - Stormwater Infrastructure Flushing and Cleaning <i>*Local TMDL Action Plan BMP</i>	Clean 10% of City Owned Structures and Flush 10% of City Owned Pipes Annually					
FY22 - The City continued its stormwater infrastructure cleaning and flushing program. This permit year 2,010 (45.8%) City stormwater structures were cleaned, and 44,591 (15.2%) linear feet of City stormwater pipe was flushed. In an effort to prevent gross solids from entering and overwhelming the stormwater system, the City again collected leaves from residential properties in the fall and winter months of the permit year. 1,450 tons of leaves were collected for composting, preventing the associated nutrient loading to local waterways. In addition to the stormwater system flushing and cleaning noted above, the City continued to make progress on implementation of drainage projects, starting construction on the Stadium Road Storm Upgrade and Rugby to Westwood Storm Replacement projects. Work completed to rehabilitate the City's aging stormwater drainage system included completion of four point repairs, 193 feet of pipe replaced, 4,892 feet of cured in place pipe (CIPP) installed, five new structures installed, and 17,884 feet of closed circuit television (CCTV) footage reviewed.						
FY21 - The City continued its stormwater infrastructure cleaning and flushing program. This permit year 2,285 (52%) City stormwater structures were cleaned, and 52,789 (18%) linear feet of City stormwater pipe was flushed. In an effort to prevent gross solids from entering and overwhelming the stormwater system, the City again collected leaves from residential properties in the fall and winter months of the permit year. 1,305 tons of leaves were collected for composting, preventing the associated nutrient loading to local waterways. In addition to the stormwater system flushing and cleaning noted above, the City continued to make progress on implementation of drainage projects from the Water Resources Master Plan. The Edgewood Road to Wayside Place Storm Upgrade replaced approximately 550 linear feet of existing storm sewers with new 15", 18", and 24" storm sewers, and replaced 10 storm structures. The work required extensive work on private property that involved extensive coordination with property owners throughout the duration of construction. The Kenwood Lane Storm Upgrade replaced an existing storm sewer with approximately 380 linear feet of new 15" storm sewer, and required the installation of five new storm structures. The Cedar Hill Road Upgrade replaced an existing 36" corrugated metal pipe (CMP). The pipe was replaced with 56 linear feet of 36" class III reinforced concrete pipe (RCP). The project also included the installation of an outfall and grass channel downstream of the pipe. Finally, work completed to rehabilitate the City's aging stormwater drainage system included completion of three point repairs, 250 feet of pipe replaced, 4,949 feet of cured in place pipe (CIPP) installed, nine structure repairs, 11 structures replaced, and 40,141 feet of closed circuit television (CCTV) footage reviewed.						

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6.3 - Training for Appropriate Personnel <i>*Local TMDL Action Plan BMP</i>	Document Description of Training Offered and Number of Attendees					
<p>FY22 - The City continued to implement the training schedule and program for appropriate City staff this permit year; see Attachment B of the Annual Report for a summary report of the required training, a list of training events, training dates, number of employees attending, and objective of the trainings. Hazmat Technician continuing education was pursued by 29 Charlottesville Fire Department (CFD) staff and Hazmat Operations continuing education was pursued by 66 CFD staff. Four firefighters from CFD completed a rigorous training course at the Center for Domestic Preparedness (CDP) located in Anniston, Alabama. They spent five days learning the critical skills needed to become certified as Hazardous Materials Technicians.</p> <p>City staff members from DPW-Engineering maintain the following DEQ certifications: Erosion and Sediment Control Plan Reviewer, Inspector, and Program Administrator; Stormwater Management Program Administrator, Inspector, Plan Reviewer, and Combined Administrator; and Dual Erosion and Sediment Control and Stormwater Management Inspector. DPW-Engineering staff members completed the following DEQ training during the permit year: Looking Downstream: Understanding Limits of Analysis - Part II. DPW Engineering staff also completed the following trainings: NC State University River Course 101: Stream Morphology Assessment, Retrofitting Existing SCMs, Showcasing Leading Practices in Climate Adaptation - Session 5: Green Stormwater Infrastructure, Our Changing Precipitation: A Conversation on the Science of Precipitation and Planning for the Future, and Seeding Demystified.</p> <p>City Planning staff members from the Department of Neighborhood Development Services (NDS) completed the following American Planning Association trainings: Climate Science & Planning - The Basics, AdaptVA: Evidence-based Planning for a Changing Climate, A Planner's Guide to the Chesapeake Bay, and Responding to Climate Change. 1 DPR staff member renewed their Commercial Pesticide Applicator certification, and 4 staff members renewed their Registered Technician certification from the Virginia Department of Agriculture and Consumer Services during the permit year.</p> <p>The City's Urban Forester attended the Virginia Association of Forest Health Professionals Conference, and staff from DPW attended Virginia Municipal Stormwater Association Quarterly Meetings.</p>						
<p>FY21 - The City continued to implement the training schedule and program for appropriate City staff this permit year; see Attachment B of the Annual Report for a summary report of the required training, a list of training events, training dates, number of employees attending, and objective of the trainings. Hazmat Technician continuing education was pursued by 31 Charlottesville Fire Department (CFD) staff and Hazmat Operations continuing education was pursued by 47 CFD staff. Seven firefighters from CFD completed nearly three months of intensive training to handle hazardous materials spills, releases, and exposures. In partnership with the Virginia Office of Emergency Management, this course was the first in-house HazMat Tech training offered in the region. Specially trained CFD Instructors led the students through various chemistry lectures and hands-on exercises at the Fontaine Training Center. CFD and the Virginia Department of Emergency Management (VDEM) started preparing for this class as far back as October 2019. To ensure success, CFD committed thirteen firefighters and captains to become HazMat-trained instructors. CFD instructors significantly reduce the department's cost and staffing burdens and allow in-house training at the highest level.</p> <p>10 City staff members from Charlottesville Area Transit received the City's Water Resources Protection Program training, which covers general awareness of local streams and watersheds; an overview of stormwater and typical stormwater pollutants; the City's MS4; illicit discharge detection and elimination recognition and reporting; green stormwater infrastructure; regulations specific to the sites where staff work (including information on site specific stormwater pollution prevention (SWPPP) and spill prevention, control and countermeasures (SPCC) plans); stormwater pollution prevention BMPs; spill prevention and response; and underground storage tank operator training.</p> <p>City staff members from DPW-Engineering maintain the following DEQ certifications: Erosion and Sediment Control Plan Reviewer, Inspector, and Program Administrator; Stormwater Management Program Administrator, Inspector, Plan Reviewer, and Combined Administrator; and Dual Erosion and Sediment Control and Stormwater Management Inspector. DPW-Engineering staff members also completed the following DEQ trainings during the permit year: Plan Reviewer for SWM Curriculum, DEQ Limits of Analysis, Regulatory SWPPP Inspections for Localities, DEQ Regulatory SWPPP Inspections for Localities (v 2.0), DEQ Inspecting Non-Standard Practices, Applied Soil Concepts for ESC and SWM Professionals, Where the Water Goes, Armoring Inspection Reports - When Checking Yes or No is Not Enough, DEQ Construction General Permit - 2 Part Series, DEQ Refresher for ESC Inspectors - 2 Part Series, Five Easy Rules for Erosion and Sediment Control, Forest Open Space: Part 1 - Soil Restoration, and Forest Open Space: Part 2 - Vegetation Restoration. A DPW-Engineering staff member also completed the following EPA training during the permit year: Community-enabled Lifecycle Analysis of Stormwater Infrastructure Costs (CLASIC): Tool Functionality and Case Studies.</p>						

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The City's Water Resources Specialist completed the following training: Stroud Water Research Center's Stream Ecology and Riparian Buffer Training, Innovative Riparian Corridor Restoration Approaches, and Stream Restoration Monitoring and Maintenance Training. Several City staff attended the Virginia Water and Environment Association 2021 Stormwater Seminar & Vendor Showcase - New Trends in BMP Design, Maintenance and Flood Mitigation, the Rivanna River Basin Conference, and Virginia Municipal Stormwater Association Member Meetings.

6.4 - Written Procedures for Operations and Maintenance Activities <i>*Local TMDL Action Plan BMP</i>	<i>Maintain and Implement Written Procedures</i>	■	■	■	■	■
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FY22 - Written procedures for operations and maintenance continued to be implemented during the permit year.

FY21 - Written procedures for operations and maintenance continued to be implemented during the permit year.

6.5 Stormwater Pollution Prevention Plans for Municipal Facilities <i>*Local TMDL Action Plan BMP</i>	<i>Completed Inspection Reports and Annual Comprehensive Site Compliance Evaluation</i>	■	■	■	■	■
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FY22 - The stormwater pollution prevention plans (SWPPP) developed for the City's municipal high priority facilities with a high potential of discharging pollutants continued to be implemented during the permit year. Annual Comprehensive Site Compliance Evaluations for the SWPPPs were completed. No new SWPPPs were developed during the permit year.

FY21 - The stormwater pollution prevention plans (SWPPP) developed for the City's municipal high priority facilities with a high potential of discharging pollutants continued to be implemented during the permit year. Annual Comprehensive Site Compliance Evaluations for the SWPPPs were completed. No new SWPPPs were developed during the permit year.

6.6 Turf and Landscape Nutrient Management Plans <i>*Local TMDL Action Plan BMP</i>	<i>Maintain Turf and Landscape Nutrient Management Plans</i>	■	■	■	■	■
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FY22 - The nutrient management plans (NMP) for all lands owned or operated by the City where nutrients are applied to a contiguous area greater than one acre, which were developed for DPR by a certified turf and landscape nutrient management planner, remained in effect for all 77.36 acres required to be covered by the plan.

FY21 - The nutrient management plans (NMP) for all lands owned or operated by the City where nutrients are applied to a contiguous area greater than one acre, which were developed for DPR by a certified turf and landscape nutrient management planner, remained in effect for all 77.36 acres required to be covered by the plan.

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6.7 Green Public Lands Management Strategies <i>*Local TMDL Action Plan BMP</i>	<i>Identify and Implement Strategies</i>					
<p>FY22 - The City's DPR and DPW continue to employ green public lands management strategies. These strategies include operating under an integrated pest management (IPM) approach to achieve chemical use reductions on our public lands, acquiring and preserving land, using organic herbicides, augmenting riparian stream buffers, and including pet waste stations and signage in many City parks. The IPM Policy for DPR-maintained City land remained in place during the permit year.</p>						
<p>FY21 - The City's DPR and DPW continue to employ green public lands management strategies. These strategies include operating under an integrated pest management (IPM) approach to achieve chemical use reductions on our public lands, acquiring and preserving land, using organic herbicides, augmenting riparian stream buffers, and including pet waste stations and signage in many City parks. The IPM Policy for DPR-maintained City land remained in place during the permit year. The City also celebrated the opening of 142 acres of forested land and trails adjacent to the Ragged Mountain Reservoir property. The property was obtained with funding assistance from the US Department of Agriculture Community Forest Grant program. The land consists of undeveloped forest with rock outcrops and mountainous topography. Intended uses will be for environmental education, forest preservation, and trail purposes. The City acquired an additional five acres of land adjacent to this property to further expand the new parkland.</p>						

**Attachment A
Illicit Discharges to the MS4 List**

As required by the MS4 General Permit, the following is a list of illicit discharges to the City’s MS4 that were observed or reported during the permit year. City staff was notified of the incidents via direct reports from residents. In all cases, the situation was evaluated, the presence of the illicit discharge was confirmed, the source of the discharge was investigated, and the responsible party established (where possible). Subsequent actions, as appropriate, explained the prohibition on such activities, educated the responsible party, and documented corrective actions.

Date Suspected Discharge Observed / Reported	Description of Investigation Including any Follow-Up	Resolution of the Investigation	Date the Investigation was Closed
8/19/21	The City’s Environmental Sustainability Office (ESO) received an email from a resident on the morning of 8/19/21 reporting turbidity in Lodge Creek. ESO staff communicated with City Utilities Department staff in regards to a water line replacement project that was being undertaken in the area.	Utilities staff confirmed with the water line replacement contractor on site that erosion and sediment control measures were in place and that a filter bag for capturing sediment was being used during dewatering activities. Despite this, the dewatering activities were likely the cause of the turbidity, given the very fine-grained nature of the sediment, which is extremely hard to retain.	8/19/21
3/19/22	The City’s Environmental Sustainability Office (ESO) received an email from a resident on the morning of 3/19/22 via the Pollution Prevention Hotline on the City website. The resident reported exterior renovations occurring at an existing hotel on Cherry Avenue. The renovations included the cutting and sanding of Styrofoam boards being applied to the exterior of the building, resulting in fugitive Styrofoam particles littering the site and wind-borne migration of particles off site. City staff visited the site and met with a member of the hotel management team, passed along	Over the course of the next several weeks, hotel management conducted cleanup operations on-site, in the stormwater drainage network, and in the receiving waterway. City staff visited the site several times to check in on the cleanup process and provide guidance and direction. The final site visit was made on 6/8/22, at which point the cleanup was deemed to be satisfactory and the investigation was closed.	6/8/22

Date Suspected Discharge Observed / Reported	Description of Investigation Including any Follow-Up	Resolution of the Investigation	Date the Investigation was Closed
	<p>the report from the resident, and inspected the work site. The stormwater drainage system and downstream receiving waterway were also inspected, and evidence of migration of Styrofoam particles via the drainage network was observed. The City staff member explained possible methods for containing the Styrofoam particles during future work and coordinated with hotel management on a cleanup plan for collecting the particles on site as well as in the stormwater network and the receiving waterway.</p>		
<p>3/28/22</p>	<p>The City’s Environmental Sustainability Office (ESO) received an email from a resident on the afternoon of 3/28/22 via a contact form on the City website. The resident reported dead and dying fish in a tributary of Meadow Creek. Charlottesville Fire Department (CFD) staff reported to the scene and conducted water chemistry testing, with all parameters registering at normal levels. City ESO staff and staff of the Rivanna Conservation Alliance (RCA) also visited the site and investigated the contributing drainage area in an attempt to identify a source and responsible party. RCA also conducted further water chemistry testing, with all parameters registering at normal levels. The issue was reported to DEQ, and DEQ biologists visited the site the following day to conduct an assessment of impacts to aquatic organisms in the stream. Dead fish, as well as salamanders and worms, were observed.</p>	<p>Despite further investigations by the City, no source or responsible party was able to be determined. Based on the location of the start of the impacts to aquatic organisms, the conclusion was that a toxic discharge entered the stream after traveling through the City’s MS4 and caused the kill.</p>	<p>4/1/22</p>

Attachment B Training Summary Report

The following report summarizes training that was completed as part of the City's MS4 Training Program during the permit year, and includes a list of training events, the training date, the number of employees attending the training, and the objective of the training.

Training Event	Training Date	# of Employees Attending	Objective of the Training
Hazardous Materials Operations	Numerous dates over the course of the permit year	66	Train personnel to operate under the defensive tactical control principle with some mission specific skills training.
Hazardous Materials Technician	Numerous dates over the course of the permit year	29	Train personnel in advanced detection and monitoring, wearing/using chemical protective clothing, addressing/controlling atmospheric and pressurized leaks, plugging and patching, material categorization.
VDACS Certified Pesticide Applicator and Registered Technician	July 2021 June 2022	5	VDACS certification program for pesticide applicators
Various Online Trainings from DEQ, NOAA, NC State University, American Planning Association	Numerous dates over the course of the permit year	9	Objectives varied according to the training
Plan Reviewer for ESC Curriculum	7-1-21 2-16-22 4-28-22	3	DEQ certification for erosion and sediment control plan reviewers
Plan Reviewer for SWM Curriculum	7-1-21 5-26-22	2	DEQ certification for stormwater management plan reviewers
NC State University River Course 101: Stream Morphology Assessment	3-18-22 through 3-20-22	1	Introduces concepts of fluvial geomorphology and stream processes related to channel and floodplain formation, bankfull stage identification, regional hydraulic geometry curves, applications of the Rosgen classification system for natural streams in the Southeast, and stream stability assessment
Virginia Association of Forest Health Professionals Conference	2-14-22 through 2-15-22	1	Annual meeting to hear the latest on emerging pests, existing issues and other related forest ecology and forest health topics.

City of Charlottesville, VA MS4 Permit VAR040051 Annual Report

Attachment C

Chesapeake Bay TMDL Progress Towards Meeting Required Cumulative POC Reductions

Summary Page Ledger:

Management Practices and Retrofit Programs to Achieve 5% and 35% Reductions Required For Existing Development

	Location (Lat/Long)	Nitrogen	Phosphorus	Total Suspended Solids	
1. Total 5% Reductions Required		150.52	34.70	15,398.65	
2. Total 35% Reductions Required		1,053.57	242.83	107,790.62	
3. Total Cumulative (40%) Reductions Required		1,204.09	277.53	123,189.27	
4. Reduction Practices Implemented / To be Implemented					
Site Name	BMP Type				
ABC Preschool	Bioretention	38.0286/-78.4726	-1.75	-0.25	-89.56
Saint Thomas Aquinas Priory	8'x4' Filterra	38.0386/-78.5163	-0.04	-0.01	-5.38
Saint Thomas Aquinas Priory	Bioretention	38.0388/-78.5157	-2.03	-0.31	-110.92
Cabell Ave Apartments	4'x6' Filterra	38.0419/-78.4966	-0.03	-0.01	-4.03
Brody Jewish Student Center	Bioretention	38.0426/-78.5021	-1.34	-0.24	-92.51
Brody Jewish Student Center	Bioretention	38.0428/-78.5019	-0.72	-0.12	-45.38
Kroger Fueling Center	4'x6' Filterra	38.0599/-78.4928	-0.03	-0.01	-4.12
Jaunt Parking Lot	Permeable Pavers	38.0151/-78.4705	-2.61	-0.51	-205.46
1600 Monticello Ave.	Raintank Infiltration	38.0164/-78.4756	-1.20	-0.24	-102.89
601 Park Street	Bioretention	38.0348/-78.4762	-3.55	-0.50	-174.10
1327 Carlton Ave	Bioretention	38.0214/-78.4666	-0.74	-0.22	-100.86
Brookwood	Bioretention	38.0168/-78.4941	-2.36	-0.40	-149.72
Rives Park	Bioretention	38.0173/-78.4707	-1.12	-0.07	-103.50
Timberlake Place	Bioretention + Rain Garden	38.0231/-78.4625	-0.06	-0.01	-5.10
Meade Park Aquatic Center	2 Bioretention Areas	38.0279/-78.4654	-4.28	-0.30	-395.98
Whole Foods	Sand Filter	38.06/-78.4884	-0.10	-0.04	-16.98
CHS Stadium Improvements	Bioretention	38.052/-78.4712	-4.44	-0.44	-451.03
Hydraulic Road Substation	Filterra & Biopave	38.058/-78.4904	0.00	-1.54	0.00
Sunrise Park	Permeable Pavement	38.0208/-78.467	-11.25	-0.52	-1,141.25
Fontaine Fire Station	2 Bioretention Areas	38.0259/-78.5198	0.00	-0.16	0.00
	Cistern	38.0254/-78.5201			
	Dry Swale	38.0496/-78.5058			
Arlington & Millmont Apartments	4'x6' Roof Drain Filterra	38.04978/-78.50564	0.00	-0.65	0.00
	4'x6' Roof Drain Filterra	38.0504/-78.50507			
Wertland Street	2 BaySavers	38.0354/-78.4959 38.0352/-78.495	0.00	-0.56	0.00
Smith Aquatic Center	Biofilter-1	38.0276/-78.4975	-3.21	-0.45	-571.56
	Biofilter-2 + Rain Garden	38.0271/-78.4972			
Boys & Girls Club	Biofilter	38.0273/-78.4983	-2.17	-0.37	-220.06
250 Bypass@Mcintire Rd.	Enhanced Ext. Detention	38.04505/-78.47251	0.00	-1.77	0.00
	Bioretention #1	38.04328/-78.47466			
	Bioretention #2	38.04119/-78.47637			
	11 - Filterras	38.04254/-78.4746			
CTS OPERATIONS CENTER	SWM#1 Bioretention	38.0126/-78.4878	0.00	-0.39	0.00
	SWM#2 Bioretention	38.0122/-78.488			
	SWM#3 Bioretention	38.0119/-78.4875			
	SWM#4 Underground Storage	38.0114/-78.4872			
	SWM#5 Extended Detention	38.0118/-78.4861			
	SWM#6 Bioretention	38.0123/-78.4875			
	SWM#7 Bioretention	38.0129/-78.4873			
	SWM#8 Bioretention	38.0132/-78.4873			
	SWM#9 Rainwater Harvesting	38.0122/-78.4876			
Jefferson School	Enhanced Ext. Detention	38.0322/-78.4864	-6.77	-2.04	-1,559.86
Martha Jefferson	Bioswale	38.0322/-78.4718	-37.19	-2.18	-3,387.40
Pace Center	Water Quality Swale	38.0214/-78.4652	-6.66	-1.28	-538.75
	Bioretention	38.0213/-78.4649			
Retail at Barracks Road	4'x6' Filterra	38.0497/-78.5026	-0.14	-0.03	-12.51
600 Preston Place	Permeable Pavers	38.0411/-78.4982	-1.23	-0.21	-80.62
	Raintank Drywell	38.041/-78.4983			
	Bioretention	38.0296/-78.484			
Blue Moon Fund	Cistern to Vegetated Swale	38.0295/-78.4841	-1.57	-0.28	-105.86
	Infiltration	38.0296/-78.484			
CHS MLK	Bioretention	38.053/-78.4772	-23.31	-0.74	-1,364.53
Rugby Road	Permeable Pavers	38.05472/-78.49006	-1.60	-0.22	-76.02
Azalea Park	Constructed Wetland	38.0105/-78.5132	-93.78	-12.01	-6,719.67
City Yard Smart Sponge Inserts	Catch Basin Filters	38.0332/-78.4884	0.00	0.00	-1,408.04
CHS Parking Lot	Permeable Pavement + Vegetated Filter Strip	38.0512/-78.4751	-13.28	-0.39	-952.01
909 E. Market	Permeable Asphalt	38.0298/-78.4746	-0.34	-0.08	-31.61
Old Lynchburg Road	Bioretention	38.0171/-78.5147	-5.89	-0.96	-371.83
Forest Hills Park	Bioretention	38.0231/-78.4975	-52.31	-6.41	-2,040.34
Venable Bioretention	Bioretention	38.0381/-78.4959	-2.59	-0.53	-214.86
Plaza on West Main	MTD Vortex	38.0319/-78.4934	-1.14	-0.47	-92.60
Residence Inn	Sand Filter	38.0310/-78.4855	-5.01	-0.23	-786.24
Coca Cola Building	Permeable Pavers	38.0356/-78.4873	-3.97	-0.57	-825.38
Blue Ridge Commons	Bioretention	38.0234/-78.4944	-0.05	-0.02	-9.26
City Hall Green Roof	Green Roof	38.0299/-78.4773	-1.58	-0.31	-135.05
1012 Druid Ave	Bioretention	38.0167/-78.4772	-1.03	-0.14	-46.50
Pen Park	Bioretention	38.0548/-78.4536	-15.45	-2.24	-900.80

Summary Page Ledger:
Management Practices and Retrofit Programs to Achieve 5% and 35% Reductions Required For Existing Development

	Location (Lat/Long)	Nitrogen	Phosphorus	Total Suspended Solids	
1. Total 5% Reductions Required		150.52	34.70	15,398.65	
2. Total 35% Reductions Required		1,053.57	242.83	107,790.62	
3. Total Cumulative (40%) Reductions Required		1,204.09	277.53	123,189.27	
4. Reduction Practices Implemented / To be Implemented					
Site Name	BMP Type				
Willoughby	Bioretention	38.0158/-78.4994	-17.96	-3.02	-1,139.32
Woolen Mills Self Storage	Ext. Detention Pond	38.0229/-78.4625	-46.77	-10.74	-4,818.15
One Carlton LLC	Permeable Pavement	38.0220/-78.46827	0.00	-0.23	0.00
English Construction Company	Bioretention	38.04378/-78.51526	0.00	-0.78	0.00
McIntire Plaza	Filtering Devices - StormTech Isolator Row	38.0417/-78.4792	0.00	-1.81	0.00
CHS Track	Infiltration Practice	38.0521/-78.4761	-12.72	-1.93	0.00
Hillsdale Drive	Filtering Devices - Filterra Bioretention System	38.0647/-78.4864	0.00	-4.99	0.00
Baywood Hotels	Underground Detention - Vault and Isolator Row	38.02908/-78.48483	0.00	-1.12	0.00
Longwood PUD	Permeable Asphalt	38.01235/-78.50913	0.00	-2.40	0.00
Rock Creek	Stream Restoration	38.02317/-78.50182	-19.84	-17.99	-11,870.76
Meadowcreek Golf Course	Stream Restoration	38.05582/-78.44941	-12.75	-11.56	-7,629.60
Meadow Creek	Stream Restoration	38.06384/-78.47599	-541.40	-488.54	-320,496.92
River Run	Stream Restoration	38.05571/-78.45241	-295.33	0.00	0.00
Pen Park	Urban Nutrient Management	38.05494/-78.45036	-0.39	-0.01	0.00
Washington Park	Urban Nutrient Management	38.04138/-78.49126	-0.53	-0.02	0.00
Venable School	Urban Nutrient Management	38.03732/-78.49577	-0.59	-0.02	0.00
Azalea Park	Urban Nutrient Management	38.01057/-78.51649	-0.52	-0.02	0.00
Quarry Park	Urban Nutrient Management	38.01471/-78.4771	-0.22	-0.01	0.00
Quarry Park	Urban Nutrient Management	38.015/-78.4777	-0.45	-0.02	0.00
Quarry Park	Urban Nutrient Management	38.01497/-78.47657	-0.32	-0.01	0.00
Burnley Moran School	Urban Nutrient Management	38.03497/-78.46253	-0.36	-0.01	0.00
Charlottesville High School	Urban Nutrient Management	38.05279/-78.47378	-0.30	-0.01	0.00
Street Sweeping	Street Sweeping	City Wide	-970.67	-126.06	-204,848.48
5. Total Reductions Implemented / To be Implemented		-2,239.03	-712.73	-576,453.37	
6. Total Reductions In Excess of 40% Reductions Required		(1,034.95)	(435.21)	(453,264.09)	