Albemarle County
2018- 2023
MS4 Program

- Year 1 Annual Report
- Chesapeake Bay TMDL Action Plan Update
- Local TMDL Action Plan Update

Coverage under VPDES General Permit for
Small Municipal Separate Storm Sewer Systems
VAR040074

Albemarle County
Division of Environmental Services
401 McIntire Road
Charlottesville, Virginia 22902
(434) 296-5816
www.albemarle.org/water

October 1, 2019
Albemarle County, Virginia is authorized to discharge stormwater into the State’s surface waters through a General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4s) under the Virginia Stormwater Management Program.

This document is submitted to the Virginia Department of Environmental Quality as fulfillment of its responsibility to annually report on activities and program updates.

CERTIFICATION STATEMENT

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,

[Signature]

Jeffrey B. Richardson, County Executive
Date 9/23/19
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**List of Abbreviations**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>BMP</td>
<td>Best Management Practice</td>
</tr>
<tr>
<td>DEQ</td>
<td>Department of Environmental Quality</td>
</tr>
<tr>
<td>EMS</td>
<td>Environmental Management System</td>
</tr>
<tr>
<td>IDDE</td>
<td>Illicit Discharge Detection and Elimination</td>
</tr>
<tr>
<td>IPM</td>
<td>Integrated Pest Management</td>
</tr>
<tr>
<td>MCM</td>
<td>Minimum Control Measure</td>
</tr>
<tr>
<td>MS4</td>
<td>Municipal Separate Stormwater Sewer System</td>
</tr>
<tr>
<td>MWEE</td>
<td>Meaningful Watershed Education Experience</td>
</tr>
<tr>
<td>POC</td>
<td>Pollutant of Concern</td>
</tr>
<tr>
<td>PVCC</td>
<td>Piedmont Virginia Community College</td>
</tr>
<tr>
<td>RCA</td>
<td>Rivanna Conservation Alliance</td>
</tr>
<tr>
<td>RSEP</td>
<td>Rivanna Stormwater Education Partnership</td>
</tr>
<tr>
<td>SMF</td>
<td>Stormwater Management Facility</td>
</tr>
<tr>
<td>SWPPP</td>
<td>Stormwater Pollution Prevention Program</td>
</tr>
<tr>
<td>TMDL</td>
<td>Total Maximum Daily Load</td>
</tr>
<tr>
<td>TJSWCD</td>
<td>Thomas Jefferson Soil and Water Conservation District</td>
</tr>
<tr>
<td>UVA</td>
<td>University of Virginia</td>
</tr>
<tr>
<td>VDOT</td>
<td>Virginia Department of Transportation</td>
</tr>
<tr>
<td>VEEP</td>
<td>Virginia Environmental Excellence Program</td>
</tr>
<tr>
<td>VPDES</td>
<td>Virginia Pollutant Discharge Elimination System</td>
</tr>
<tr>
<td>VSMP</td>
<td>Virginia Stormwater Management Program</td>
</tr>
</tbody>
</table>
Section 1 – MS4 Year 1 Program Plan Update

This report documents Albemarle County’s activities related to the six minimum control measures and other requirements for under its 2018 - 2023 general permit for small MS4s (VAR040074). In addition, this report includes the required annual updates of our Local TMDL Action Plan and Chesapeake Bay TMDL Action Plan.

Roles and Responsibilities

Most program activities are carried out by staff from both Albemarle County Local Government and Albemarle County Public Schools. Additional activities are performed per contractual arrangement by the Thomas Jefferson Soil and Water Conservation District (TJSWCD) and Rivanna Conservation Alliance (RCA). Key County staff associated with each Minimum Control Measure (MCM) are listed in the table below.

<table>
<thead>
<tr>
<th>Minimum Control Measure</th>
<th>Albemarle Staff Contacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Public education and outreach</td>
<td>Greg Harper, Chief of Environmental Services Department of Facilities and Environmental Services <a href="mailto:gharper@albemarle.org">gharper@albemarle.org</a> / 434-296-5816 x3410</td>
</tr>
<tr>
<td>2) Public involvement/participation</td>
<td>Frank Pohl, County Engineer Community Development Department <a href="mailto:fpohl@albemarle.org">fpohl@albemarle.org</a> / 434-296-5832 x7914</td>
</tr>
<tr>
<td>3) Illicit discharge detection and elimination</td>
<td>Greg Harper (see above)</td>
</tr>
<tr>
<td>4) Construction site stormwater runoff control</td>
<td>Andy Lowe, Environmental Compliance Manager (Local Gov’t.) Department of Facilities and Environmental Services <a href="mailto:alowe@albemarle.org">alowe@albemarle.org</a> / 434-296-5816 x3291 Lindsay Check Snoddy, Deputy Director of Building Services Albemarle County Public Schools <a href="mailto:lcsnoddy@k12albemarle.org">lcsnoddy@k12albemarle.org</a> / 434-975-9340</td>
</tr>
</tbody>
</table>

MCM1 – Public Education and Outreach

- Rivanna Stormwater Education Partnership - The County continues its fruitful collaboration with other local VPDES permit holders – the City of Charlottesville, the University of Virginia, and the Rivanna Water and Sewer Authority – in implementing education and involvement efforts through the Rivanna Stormwater Education Partnership (RSEP). The Thomas Jefferson Soil and
Water Conservation District (TJSWCD) serves as the partnership’s coordinating body. The partnership website is http://www.rivanna-stormwater.org/. RSEP met seven times during the reporting period to discuss and organize initiatives and share information pertaining to stormwater stewardship and permit compliance. Educational outreach and planning conducted by the partnership during Year 1 is listed in the table below. Each listed item is an educational or outreach activity creditable per MS4 permit requirements.

<table>
<thead>
<tr>
<th>RSEP Outreach Activities (07/01/08 – 06/30/19)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/9/2018 Education resource presentation to local teachers regarding stormwater-related educational resources (24 people)</td>
</tr>
<tr>
<td>9/18-ongoing RSEP website redesign and update</td>
</tr>
<tr>
<td>9/29/18 FLOW: Rivanna River Arts Festival (100+ people)</td>
</tr>
<tr>
<td>10/24/18 Quarter-page ad in C-ville Weekly describing autumn BMPs for homeowners</td>
</tr>
<tr>
<td>11/9/18 Autumn BMP posters on Charlottesville Area Transit buses</td>
</tr>
<tr>
<td>11/2018 Presentation about the pollution reduction effects of forested buffers to Charlottesville Tree Stewards (40 people)</td>
</tr>
<tr>
<td>4/2019 Utility bill inserts to natural gas customers in the City and County</td>
</tr>
</tbody>
</table>

- **Meaningful Watershed Experiences** – The County, through an ongoing contract with TJSWCD, continues to provide watershed education to County public school students, staff, and parents through the Meaningful Watershed Education Experience (MWEE). During the 2018 – 2019 school year, 1,137 Albemarle County Public School 4th graders and 264 adults took part in MWEEs at Camp Albemarle on the Mormons River. The experience included a demonstration of benthic stream sampling and a tutorial about watersheds using the Enviroscape watershed model.

- **Chris Greene Lake Harmful Algal Bloom Presentation** – In 2018, one of Albemarle’s recreational lakes (Chris Green Lake) experienced closures due to harmful algal blooms. County staff gave a presentation about potential causes and management responses at a meeting of residents in the lake watershed.

- **Presentation to 6th Grade Students** – In April 2019, staff from the County’s Environmental Services Division gave an on-site presentation about dam safety and erosion and sediment control to approximately 55 6th grade students at the Hollymead Dam during construction of improvements to the dam.

**Future MCM1 Activities** – During fiscal year 2020, we anticipate conducting educational activities like those described above. Additionally, we will be working through the RSEP partnership to complete and release an interactive story map illustrating and describing stormwater management challenges and practices.
MCM2 – Public Involvement and Participation

Albemarle’s efforts to promote public involvement and participation during the permit cycle were as follows:

- **RCA Funding and Leadership** – For sixteen years, the County has helped fund the Rivanna Conservation Alliance’s community-based stream monitoring program (formerly called StreamWatch). With the help of trained volunteers, RCA conducts extensive benthic monitoring throughout the Rivanna basin, as well as bacterial monitoring in the Charlottesville and Albemarle MS4 areas. In addition to offering funding, Albemarle County staff sits on the RCA’s Science Advisory Committee and actively provides water-quality monitoring and reporting guidance. During this reporting period, Albemarle staff helped with data analysis and science translation for the annual Stream Conditions Report.

- **Public Involvement in Review of Stream Buffer Rules** – Albemarle is considering revisions to its Water Protection Ordinance as it relates to stream buffer protection. The County actively cultivated public input to help shape potential revisions to the ordinance through an online survey, a dedicated webpage, feedback sessions with seven neighborhood organizations, a general meeting, meetings with local conservation professionals, and meetings with individual citizens.

- **Survey of Chris Greene Lake Watershed Residents** – In the wake of above-mentioned algal blooms at Chris Greene Lake, the County promoted citizen awareness and watershed stewardship through a mailed survey of all residents of the watershed. The survey response rate exceeded twenty percent. Information received from residents will help the County deliberate management options, including promoting further public engagement and stewardship.

- **Neighborhood Involvement in Stormwater Management** – County staff met with residents from several neighborhoods in the Town Branch watershed to discuss potential projects to enhance stormwater management.

- **Volunteer Participation in the Installation and Management of SMFs** – On a continuing basis, members of the Rivanna Chapter of the Master Naturalists maintain the vegetation at a rain garden at the County Office Building.

- **Volunteer Involvement in Public Education** – The Rivanna Master Naturalists provided over scores of volunteer hours to the Meaningful Watershed Educational Experience program for Albemarle County elementary school students.

- **Volunteer Maintenance of Streamside Trails** – Albemarle County Parks and Recreation involves the public in the maintenance of trails alongside streams and rivers. Streamside trails increase public interest and involvement in water stewardship.

Future MCM2 Activities

During FY 2020 the County will engage the public through the following efforts:
• **Small Watershed Restoration Project** – The County will continue its above-described pilot effort to engage property owners in a community-based watershed restoration project. Our work in FY 2020 will focus on assessing and promoting neighborhood participation as opportunities are presented.

• **Benthic and Bacteria Sampling by Community-based Stream Monitoring Program** – To satisfy data needs, and continue our engagement with the community, Albemarle will continue to support Rivanna Conservation Alliance’s volunteer-supported StreamWatch Program to perform benthic sampling throughout the Rivanna River basin. We will also continue contracting with RCA to perform both benthic and bacteria sampling at streams in and near our MS4 area.

• **Public Input on Stream Buffers** – Albemarle will continue to solicit community advice around the re-drafting of our stream buffer protection rules.

**MCM3 – Illicit Discharge Detection and Elimination**

**Interconnection Notifications** – Albemarle County has officially notified in the past all neighboring MS4 jurisdictions of potential physical interconnections among respective storm sewer systems. Because most stormwater conveyances in Albemarle are not owned or maintained by the County, Albemarle may have very few (or zero) interconnections between our MS4 system, *per se*, and neighboring systems. Nevertheless, we stand ready to share available information regarding stormwater conveyances, irrespective of ownership or regulatory mandates.

**Dry-weather Screening** – Per a continuing contractual arrangement with the TJSWCD, and over a period of more than a decade, the County has been conducting an IDDE survey of all perennial and intermittent streams in and around the County’s MS4 and other developed areas. The survey includes mapping storm sewer outfall locations and conducting a visual screening for signs of illicit discharges. Other details of the survey protocol are described in the Program Plan.

During the Year 1 reporting period, 55 outfalls were surveyed in the MS4 area (see map below). No indicators of potential discharges were observed.
Above: Outfalls surveyed in MS4 area during fiscal year 2019.

“At large” illicit discharges – The County annually responds to a few reports by the public of suspected illicit discharges through its web-based reporting form at the RSEP website. Additional reports or inquiries from the public are received through the County phone system or are forwarded by colleagues. A record of reported suspected illicit discharges and other types of inquiries and complaints is maintained in the Environmental Services Division’s files.

During this reporting period, the County responded to four reports of potential or actual IDDE events in the MS4 area. None were major; all were resolved satisfactorily.

Outfall Mapping – Albemarle has been surveying outfalls throughout the County for more than a decade, and compiling records of outfall locations and dry-weather screening results. Albemarle has mapped each of these outfalls along with their watersheds, has estimated the drainage area for each outfall, and has identified receiving waters for each outfall along with 303(d) listing and TMDL statuses for each receiving water.

During this reporting year, two new outfalls were added to the County’s outfall map and database.
Storm Sewer Mapping - Albemarle County does not own and maintain a traditional, interconnected storm sewer system, as is typically the case in cities. Public roadways in the County – and the drainage infrastructure within the rights-of-way (ROW) – are operated by Virginia Department of Transportation (VDOT). Most of the infrastructure outside of VDOT ROW is located on private property. The County is responsible for infrastructure on its properties – including school and park properties – and on private property but within public easements.

While most of the drainage infrastructure within the County’s MS4 jurisdictional area is not actually maintained by the County, the County has been locating and mapping all infrastructure to the extent that we can. As of the submittal date for this report, we have mapped approximately 90% of stormwater infrastructure within our MS4 area, irrespective of ownership. The figure below shows an example of our progress to date.

Above: Storm sewer infrastructure (red) in Albemarle MS4 area.
**MCM4 – Construction Site Stormwater Runoff Control**

Albemarle County has been authorized by DEQ as a local authority of the Virginia Stormwater Management Program (VSMP). Property owners preparing to engage in land disturbing activities must obtain a permit from the Community Development Department prior to the commencement of land disturbance. Land disturbing activities are also regulated by Albemarle’s Water Protection Ordinance. The standards and specifications for erosion and sediment control are no different than State regulations except the County is more stringent in at least 4 respects:

- the land disturbance threshold for small construction activities is 10,000 square feet, as opposed to one acre
- denuded areas must be stabilized with permanent vegetation within nine months after commencing land disturbing activity (with caveats and opportunities for extensions)
- the zoning ordinance limits the use of fill or waste areas to one year
- a 100-foot vegetated buffer on qualifying streams must be developed and maintained in perpetuity

The following table is a summary of enforcement of regulated land-disturbing activities for the reporting period.

<table>
<thead>
<tr>
<th>Albemarle County enforcement of state and local laws regulating land-disturbing activities. (07/01/08 – 06/30/19)</th>
<th>Number of new land-disturbing activities</th>
<th>Total disturbed area (acres)</th>
<th>Number of inspections conducted</th>
<th>Number of verbal warnings</th>
<th>Number of notices to comply</th>
<th>Number of stop work orders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulated under Virginia Stormwater Management Program (≥10,000 square feet)</td>
<td>50</td>
<td>507.9</td>
<td>1648</td>
<td>55</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Regulated under Albemarle County Water Protection Ordinance (single-family building permits)</td>
<td>1401</td>
<td>N/A for building permits</td>
<td>2220</td>
<td>178</td>
<td>52</td>
<td>6</td>
</tr>
</tbody>
</table>

**MCM5 – Post-Construction Stormwater Management in New Development and Redevelopment**

Per VSMP and County requirements, Albemarle periodically inspects permanent privately and publicly-owned stormwater management facilities (SMFs). There are approximately 1,180 SMFs in the County; approximately 700 are located within the MS4 area.

The locations of SMFs are maintained in a GIS and other data are maintained in a linked database. Our goal is to inspect each SMF at the rate specified in the Program Plan but at a minimum of once every permit cycle. The table below summarizes our inspection activity for this reporting year:
Albemarle County MS4 Program (2018 – 2023) Year 1 Annual Report

Inspection records for stormwater management facilities in Albemarle County MS4 area (07/01/08 – 06/30/19)

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;compliant&quot;</td>
<td>155</td>
</tr>
<tr>
<td>&quot;repairs needed&quot;</td>
<td>29</td>
</tr>
<tr>
<td>&quot;pending&quot;</td>
<td>21</td>
</tr>
</tbody>
</table>

Albemarle County electronically reported BMPs on September 30, 2019 using the DEQ BMP Warehouse in accordance with Part I.E.5.g of the General Permit.

MCM6 – Pollution Prevention & Good Housekeeping

Through our Environmental Management Policy, the County is committed to environmental compliance, pollution prevention, and continual environmental improvement both within and outside our MS4 area. Many of the efforts related to the County’s implementation of an Environmental Management System (EMS) satisfy requirements under this stormwater permit.

During the reporting period, Albemarle County Local Government was certified at the Platinum level and Albemarle County Public Schools was certified at the Gold Level in the Virginia Municipal League’s “Go Green Virginia” challenge which – a statewide competition for localities to showcase their various pollution prevention-related programs. Additionally, we maintain E3 level certification in the DEQ’s Virginia Environmental Excellence Program (VEEP) for the Department of Facilities and Environmental Services, Department of Parks and Recreation, and Public Schools fencelines.

The EMS program constitutes the written procedures for daily good housekeeping and pollution prevention activities. The EMS includes the following standard operating procedures (SOPs), which are included as attachments to the Program Plan:

- Safer Chemical Procedure
- Integrated Pest Management
- Underground Storage Tank Management
- Spill Prevention and Response
- Hazardous Conditions

Stormwater-related highlights of the EMS program include:

- All waste materials from our facilities are disposed of properly and contained in covered dumpsters. Dumpsters at local government and school locations are in good repair and are
required to be cleaned on a regular basis by waste haulers. Custodial staff is trained annually on good housekeeping, spill prevention, spill reporting, and outdoor storage of materials.

- A contractor agreement is in place for the majority of our maintenance, grounds, and custodial contracts that states that any contractor doing work in/on our facilities will not dump anything down a storm drain. All contractors, including painters, general construction contractors, and carpenters, must sign this document before any work is conducted.

- The County has a Safer Chemical Management Policy which mandates the use of green certified cleaning agents, sharply restricts the use of pesticides, and promotes the use of bio-based pesticides when there is no alternative to the use of pesticides.

- The County Public Schools and Local Government have developed an Integrated Pest Management program for indoor and outdoor pest/weed control. This minimizes the amount of pesticides and herbicides used on school properties and subsequently discharged in stormwater.

- Albemarle Public Schools has developed a program to save water and reduce unnecessary runoff by adjusting schedules and irrigation amounts based on monitored rainfall.

- Weekly inspections are performed at our permitted vehicle wash outfall. An interior automated wash bay reduces number of vehicles being washed at the exterior bay.

- Maintenance and custodial personnel at fuel site locations are trained on cleanup measures and emergency response.

### Training

The following summarizes relevant training sessions undertaken by employees during the reporting period.

<table>
<thead>
<tr>
<th>Training event</th>
<th>Date</th>
<th>Number of employees</th>
<th>Training objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous Material Operation/OSHA Level II</td>
<td>August 8-11, 2018</td>
<td>11 (FES) 6 (P&amp;R)</td>
<td>8-hour annual refresher.</td>
</tr>
<tr>
<td>Hazardous Communication and Environmental SOP refresher</td>
<td>May 15, 2019</td>
<td>14 (FES)</td>
<td>Environmental compliance programs and practices. Prevention of stormwater pollution during day-to-day operations.</td>
</tr>
<tr>
<td>Basic Good Housekeeping and Pollution Prevention</td>
<td>November 5, 2018</td>
<td>166 (Public Schools)</td>
<td>Prevention of stormwater pollution during day-to-day operations.</td>
</tr>
<tr>
<td>Pesticide application (various levels and certifications)</td>
<td>various dates throughout 2018/2019</td>
<td>6 (P&amp;R) 1 (Public Schools)</td>
<td>Safe and environmentally responsible pesticide and herbicide application.</td>
</tr>
</tbody>
</table>

### Nutrient Management Plans

The table below summarizes the Nutrient Management Plans (NMPs) for County properties within the MS4 jurisdictional area. Nutrient management plans have been developed for all subject facilities and have been reviewed by state regulators.
### Albemarle County facilities subject to NMP requirements

<table>
<thead>
<tr>
<th>Facility Name</th>
<th>Acres</th>
<th>Longitude/ Latitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agnor-Hurt Elementary</td>
<td>~1.0</td>
<td>-78.48/38.09</td>
</tr>
<tr>
<td>Baker-Butler Elementary</td>
<td>~1.0</td>
<td>-78.42/38.12</td>
</tr>
<tr>
<td>Cale Elementary</td>
<td>~1.0</td>
<td>-78.50/38.00</td>
</tr>
<tr>
<td>Hollymead Middle School little league baseball</td>
<td>0.7</td>
<td>-78.43/38.11</td>
</tr>
<tr>
<td>Hollymead Middle School Soccer field</td>
<td>1.5</td>
<td>-78.43/38.11</td>
</tr>
<tr>
<td>Monticello High School Baseball</td>
<td>2.4</td>
<td>-78.49/37.99</td>
</tr>
<tr>
<td>Monticello High School Softball</td>
<td>0.9</td>
<td>-78.49/38.00</td>
</tr>
<tr>
<td>Woodbrook Elementary</td>
<td>~1.0</td>
<td>-78.46/38.09</td>
</tr>
</tbody>
</table>

### No High-Priority Facilities

Albemarle County has no facilities identified as “high-priority facilities”, as defined in the General Permit.

### Assessment of Appropriateness of Identified BMPs

MS4 programs are designed to be adaptive to changes in requirements, local and regional conditions, available resources, and the state of best practices. As such, the professionals responsible for implementing this program have and will, as needed, make adjustments to policies, procedures, or activities to improve the effectiveness in meeting permit requirements and the more fundamental goal of improving the health of local and regional waters.

New TMDL pollutant reduction requirements for both the Chesapeake Bay and local impaired streams have provided an opportunity for a) in-depth pollution accounting and b) the exploration of additional strategies to improve water quality.

Albemarle has already effectively met mandated Chesapeake Bay TMDL 3rd cycle reduction targets for sediment and nitrogen and has already achieved 91.9% of 3rd cycle targets for phosphorus. While we are pleased that we are meeting Chesapeake Bay TMDL targets, we note that Local TMDL goals and general water resources stewardship will continue to present substantial challenges. All streams in our MS4 area are either confirmed or likely to be impaired, as are at least 60% of streams throughout the County. Restoring the health of large networks of long-impaired streams is a monumental challenge and far beyond the capacity of government acting alone. As such, we believe that some of our most compelling future opportunities will involve expanding our commitments towards the Public Education (MCM #1) and Public Involvement (MCM #2) components of the General Permit.

### Progress towards Achieving Measurable Goals for Each MCM

The preceding sections summarize Year 1 activities and progress associated with each minimum control measure.
Notice that County is Relying on Outside Party

As indicated in previous sections, Albemarle County continues to receive services related to implementation of its MS4 program plan from Rivanna Conservation Alliance and Thomas Jefferson Soil and Water Conservation District.

Section 2: Local TMDL Action Plan Update

This following section provides an update of Albemarle County’s “Combined Local TMDL Action Plan: Sediment TMDL for the Rivanna River and Bacteria TMDL for the Rivanna River Mainstem, North Fork Rivanna River, Preddy Creek and Tributaries, Meadow Creek, Mechums River, and Beaver Creek Watersheds”

Activities Conducted During Year 1 and Activities Planned for Next Reporting Period

Table 5.2.3 of Albemarle’s Combined Local TMDL Action Plan lists 19 activities pursued by the County to address sediment and/or bacteria problems in our MS4 area. We are committed to that suite of activities, and to the various efforts described throughout this report. Updates and other details about selected projects and activities are provided below.

Benthic sampling and tracking

Albemarle County supports and works closely with the Rivanna Conservation Alliance (RCA). RCA’s services include the StreamWatch benthic monitoring program. Albemarle’s involvement with StreamWatch affords the County a long-term and geographically widespread record of health in streams draining to and from our MS4 area. Apart from supporting long-term monitoring of streams throughout the County, Albemarle also contracts with StreamWatch to perform additional targeted sampling at sites within and near our MS4 area. Data from both the long-term and targeted sampling efforts help us contextualize and track sediment-related benthic health.
The above map gives locations of both long-term and targeted sampling sites.

**Bacteria sampling and tracking**

In addition to benthic monitoring, RCA conducts bacteria monitoring in the Charlottesville/Albemarle urban area and selected recreational sites in the Rivanna basin. During this reporting period, Albemarle began contracting RCA to perform additional bacteria sampling to meet needs specific to MS4 compliance and Local TMDL Action plan goals. RCA has upgraded its bacteria protocol to meet Level III data quality standards.

**Contemplated changes to legal authority**

As part of Albemarle’s ongoing commitment to stream stewardship, we have been contemplating changes to local regulations. In early 2017, the Board of Supervisors directed staff to engage the public in a review and assessment of the stream buffer regulations in the County’s Water Protection Ordinance. The objective of the process is to determine if changes are wanted or needed in the regulations. During the reporting year, the County actively cultivated public input to help shape potential revisions to the ordinance through an online survey, a dedicated webpage, feedback sessions
with seven neighborhood organizations, a general meeting, meetings with local conservation professionals, and meetings with individual citizens. This process will continue over the next several years.

During the reporting year, County staff also began to consider ways to address the added challenges to meeting local TMDLs caused by new and re-development purchasing offsite nutrient credits from distant banks. This effort will likely be concluded during the next reporting year.

Case-by-case agreements for joint capital projects

Albemarle County, the City of Charlottesville, and the University of Virginia recognize the benefits of collaborating on capital projects. Instead of developing a single MOU regarding joint responsibility for cleanup of TMDL-impaired waterbodies, as discussed in the local TMDL Action Plan, the County intend to develop agreements with our local partners on an as-needed basis to share credits and responsibilities for individual projects. While it was initially envisioned that credit and responsibility-sharing could be simplified with a single agreement, County staff have since recognized that individual agreements will be needed for each project and that a blanket MOU is not worthwhile.

The first of these agreements has been executed for the RiverRun stream restoration project, which traverses the City/County jurisdictional boundary.

Story map

Along with our RSEP partners, and as mentioned in Section 1 of this report, we have nearly completed designing a web-based story map to provide the public with thoughtfully organized information about stormwater stewardship. The RSEP partnership expects to launch the Story Map during Year 2.

Stormwater facility upgrade

Albemarle is planning to convert an older-generation, County-maintained detention basin within the MS4 area to a constructed wetlands facility. The facility, located at Rio Hill Shopping Center, currently provides minimal retention and minimal water quality benefit. Construction is expected in the winter of 2019/2020.

Section 3: Chesapeake Bay TMDL Action Plan Update

Per requirements of the MS4 General Permit, the County has prepared a Phase II Chesapeake Bay TMDL Action Plan. The DRAFT Plan was submitted to DEQ as part of our permit registration statement on May 31, 2019. The General Permit requires that Albemarle County annually report control measures implemented during the reporting period, the cumulative progress toward meeting the Chesapeake Bay TMDL compliance targets for nitrogen (TN), phosphorus (TP), and sediment (TSS), and control measures that are expected to be implemented during the next reporting period.

Chesapeake Bay TMDL - New Control measures implemented

A list of control measures implemented during the reporting period, but not reported via the BMP Warehouse, is provided in Attachment A as required by Section II.A.13.a of the MS4 permit. See tabs for Stream Restoration and New and GF Source Loads for new control measures. Because BMP installation...
occurs over time – sometimes spanning years – it is difficult to determine a single date that control measures are implemented. For privately-owned BMPs constructed as part of land disturbing activities, Albemarle County is reporting the date on which stormwater BMP bonds are released as the BMP implementation date.

**Chesapeake Bay TMDL - Grandfathered Projects Update**

The Chesapeake Bay TMDL Guidance Document (Guidance Memo No. 15-2005, released May 18, 2015) states that “permittees should address reductions for grandfathered projects that initiate construction after the initial Action Plan submission in the Chesapeake Bay TMDL Action Plan section of future annual reports submitted for the reporting period in which the grandfathered construction began.” County staff have identified three additional grandfathered projects which have initiated construction after the initial Action Plan submission and before July 1, 2019. Pollution reduction totals for grandfathered projects is included in Attachment A.

**Chesapeake Bay TMDL - POC Accounting Update**

Section II.A.13.a of the MS4 permit requires permittees to provide – as part of this Annual Report – progress made towards meeting the required cumulative reductions for TN, TP, and TSS using the final design efficiency of the BMPs. Table 1 is a summary of total pollutant of concern (POC) reduction requirements and credits accumulated through June 30, 2019.

TMDL credit calculation for these projects and control measures are calculated pursuant to the Chesapeake Bay TMDL Guidance Document, using methods discussed in Section 4.2 (New Sources) and Section 4.3 (Grandfathered Sources) of Albemarle County’s approved Chesapeake Bay TMDL Action Plan. Calculations for grandfathered projects and newly implemented control measures are included in Attachment A. A list of newly implemented control measures, formatted pursuant to requirements in DEQ Memo No. 15-2005, is provided in Attachment B.
### Table 1: Summary of Total POC Reduction Requirements and Credits

<table>
<thead>
<tr>
<th></th>
<th>Type</th>
<th>P (lbs/yr)</th>
<th>N (lbs/yr)</th>
<th>TSS (lbs/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reduction Requirements</strong></td>
<td>(1st cycle – 5%)</td>
<td>30.0</td>
<td>182.6</td>
<td>15,383.9</td>
</tr>
<tr>
<td></td>
<td>(2nd cycle – 40%)</td>
<td>289.6</td>
<td>1527.5</td>
<td>109,133.9</td>
</tr>
<tr>
<td></td>
<td>(3rd cycle – 100%)</td>
<td>757.9</td>
<td>3,845.5</td>
<td>311,791.6</td>
</tr>
<tr>
<td><strong>Reduction Credits</strong></td>
<td>New and Grandfathered Sources</td>
<td>121.1</td>
<td>471.9</td>
<td>55,702.3</td>
</tr>
<tr>
<td></td>
<td>Structural BMPs</td>
<td>70.4</td>
<td>268.7</td>
<td>33,558.0</td>
</tr>
<tr>
<td></td>
<td>Stream Restorations</td>
<td>246.3</td>
<td>244.4</td>
<td>354,349.9</td>
</tr>
<tr>
<td></td>
<td>BMPs installed between January 1, 2006 and July 1, 2009</td>
<td>253.3</td>
<td>2,601.4</td>
<td>228,654.0</td>
</tr>
<tr>
<td></td>
<td>Connection of septic systems to sanitary sewer</td>
<td>0</td>
<td>373.5</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Nutrient Management Plans</td>
<td>0.1</td>
<td>0.9</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total Reduction Credits</strong></td>
<td></td>
<td><strong>691.2</strong></td>
<td><strong>3,960.7</strong></td>
<td><strong>672,264.4</strong></td>
</tr>
</tbody>
</table>

| Total Reductions Remaining | 66.7       | N/A       | N/A       |
| Total % Reductions Achieved | 91.2%     | 103.0%    | 215.6%    |

### Chesapeake Bay TMDL - Future Projects Update

Section II.A.13.d of the MS4 permit requires the County to provide a list of control measures that are planned to be implemented during the next reporting period.

The County’s Phase II Chesapeake Bay TMDL Action Plan provides descriptions of stormwater retrofits and stream restoration projects that are being planned by the County. The projects planned for implementation in the current fiscal year are shown below in Table 2. As stated in County’s Chesapeake Bay TMDL Action Plan, the County reserves the right to modify the practices and projects described and to add, remove, and/or substitute practices and projects for the ones described.

### Table 2 - Overview of Dry Detention Retrofits

<table>
<thead>
<tr>
<th>Site Name</th>
<th>Retrofit Type</th>
<th>Drainage Area (ac)</th>
<th>Nutrient Removal (lb/yr)</th>
<th>Cost Estimate</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rio Hill</td>
<td>Constructed Wetlands</td>
<td>72.0</td>
<td>29.22</td>
<td>89.33</td>
<td>14,168</td>
</tr>
</tbody>
</table>
Section 4: List of Attachments

Attachment A – FY2019 Load Reduction Calculations and New Control Measures for Chesapeake Bay TMDL Action Plan.xlsx

Attachment B – FY2019 New Control Measures Formatted Pursuant to Chesapeake Bay TMDL Action Plan Guidance Document.xlsx