Albemarle County
2013 - 2018
MS4 Program

- **Year 4 Program Plan 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, 2017

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.

The 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,

9/27/17

Douglas C. Walker — Date

Interim County Executive

Contents

List of Abbreviations

BMP	Best Management Practice
DEQ	Department of Environmental Quality
EMS	Environmental Management System
IDDE	Illicit Discharge Detection and Elimination
IPM	Integrated Pest Management
MCM	Minimum Control Measure
MS4	Municipal Separate Stormwater Sewer System
MWEE	Meaningful Watershed Education Experience
POC	Pollutant of Concern
PVCC	Piedmont Virginia Community College
RCA	Rivanna Conservation Alliance
RSEP	Rivanna Stormwater Education Partnership
SMF	Stormwater Management Facility
SWPPP	Stormwater Pollution Prevention Program
TMDL	Total Maximum Daily Load
TJSWCD	Thomas Jefferson Soil and Water Conservation District
UVA	University of Virginia
VDOT	Virginia Department of Transportation
VEEP	Virginia Environmental Excellence Program
VPDES	Virginia Pollutant Discharge Elimination System
VSMP	Virginia Stormwater Management Program
WRFAC	Water Resources Funding Advisory Committee

Section 1 – MS4 Year 4 Program Plan Update

This report documents Albemarle County's activities related to the six minimum control measures and other requirements for under its 2013– 2018 general permit for small MS4s (VAR040074). In addition, this report gives the required annual update of our Chesapeake Bay TMDL Action Plan.

Inspection of Albemarle MS4 Program

On May 30th, 2017, Virginia Department of Environmental Quality (DEQ) performed an on-site inspection of the County's MS4 Program. The inspection included inquiries and examinations into County records and procedures, and site visits to active construction sites and stormwater management facilities (SMFs). DEQ summarized the inspection and findings in a report delivered to the County on June 28th, 2017. In addition to several recommendations, the inspection resulted in two required corrective actions. These corrective actions were completed between June 28 and August 9, 2017, fulfilling all requirements stemming from the inspection.

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 staff of the Thomas Jefferson Soil and Water Conservation District (TJSWCD). Key County staff associated with each Minimum Control Measure are listed in the table below.

Minimum Control Measure	Albemarle Staff Contacts
Public education and outreach	John Murphy, Watershed Stewardship Manager Department of Facilities and Environmental Services jmurphy@albemarle.org / 434-296-5815 x3411
Public involvement/participation	
Illicit discharge detection and elimination	
Construction site stormwater runoff control	Frank Pohl, County Engineer Community Development Department fpohl@albemarle.org / 434-296-5832 x7914
Post-construction stormwater management	John Murphy (see above)
Pollution prevention/good housekeeping	Andy Lowe, Environmental Compliance Manager (Local Gov't.) Department of Facilities and Environmental Services alowe@albemarle.org / 434-296-5816 x3291 Lindsay Check Snoddy, Environmental Compliance Manager Albemarle County Public Schools lcsnoddy@k12albemarle.org / 434-975-9340

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, the Rivanna Water and Sewer Authority – in implementing education and involvement efforts through the Rivanna Stormwater Education Partnership (RSEP). TJSWCD serves as the partnership's coordinating body. The partnership website is http://www.rivanna-stormwater.org/.

RSEP met 10 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 4 is described in the table below.

Date	Task
October 2016 to June 2017	Designed kids' water quality restaurant placemat. Placemat contains mazes and other activities.
Dec 16-31 2016	Aired animated video ad on water pollution issues (sediment, nutrients, bacteria) before every movie at 14 Stonefield Regal Theaters for two weeks (~25,000 people)
April 2017	Placed quarter-page public service announcement about springtime best management practices in C-ville Weekly newspaper.
April 2017	25,000 flyers mailed with local utility bills.
April 23 2017	Displayed water stewardship educational information at Charlottesville Eco-Fair.
May 2017	Posted ad for springtime best management practices on 25 Charlottesville Area Transit buses for 2-3 months (~647,000 individual rides).
May and June 2017	Developed design and content for water stewardship web-maps to be featured on RSEP website.

Meaningful Watershed Experiences - In addition to the above RSEP activities, 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 2016-2017 school year, 1,122 Albemarle County Public School 4th graders and 240 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.

Future MCM1 Activities – During fiscal year 2018, we anticipate conducting educational activities similar to those described above. Additionally, we will be working through the RSEP partnership to upgrade our educational presence on the Internet through 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/StreamWatch Funding and Leadership – For more than a decade, the County has helped fund the Rivanna Conservation Alliance's StreamWatch community-based stream monitoring program. With the help of trained volunteers, StreamWatch 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 Rivanna Conservation Alliance's Science Advisory Committee and actively provides water-quality monitoring guidance. Our application of StreamWatch data is discussed in Section 2 of this report (Local TMDL Action Plan Update).

- Public Involvement in Planning the Establishment of Stormwater Utility – Albemarle is preparing to adopt a stormwater utility to fund regulatory and other water stewardship responsibilities. We consider public involvement to be vital to this process. During the reporting period, Albemarle hosted two stakeholder meetings to solicit community advice about the implementation of the facility. The stakeholders represented diverse sectors of the community (farmers, homeowners and large property owners, environmentalists, etc.), and convened for the exclusive purpose of developing recommendations about the utility to County staff and the Board of Supervisors. In addition to stakeholders, the meetings were also attended by members of the Albemarle County Board of Supervisors and Planning Commission.

- Public Involvement in Planning Revisions of Stream Buffer Regulations – Albemarle County is revisiting the stream buffer sections of its Water Protection Ordinance, with an eye to drafting rules that will more effectively protect stream buffer zones throughout the County, including the MS4 area. The County convened three separate meetings during the reporting year to solicit input about current and prospective future stream buffer rules from each of three stakeholder groups: developers, farmers and foresters, and conservationists.

- Volunteer Participation in the Installation and Management of SMFs – On a continuing basis, members of the Master Gardeners maintain the vegetation at a rain garden at the County Office Building. During this reporting year, students from the University of Virginia planted trees and removed trash at a County-owned stormwater wetlands.

- Involving Students in Public Outreach and Education – Albemarle County Public Schools proactively involved students in water stewardship education by facilitating the installation of a storm drain mural by students from Monticello High School.

- Volunteer Maintenance of Streamside Trails – Albemarle County Parks and Recreation involves the public in the maintenance of trails alongside streams and rivers. The County facilitated hundreds of hours of volunteer trail maintenance during the reporting year. Streamside trails increase public interest and involvement in water stewardship.

- Public Involvement in Watershed Restoration Planning – As reported in our Year 3 Annual Report, Albemarle County is exploring the prospect of restoring a small, moderately impaired watershed in the MS4 area by engaging residents and applying multiple and varied best management practices. This ambitious project obviously will require extensive resources and the involvement of diverse stakeholders. During the reporting year, Albemarle solicited community input during the exploratory phase of this project by convening two meetings with representatives of aligned agencies and conservation organizations.

Future MCM2 Activities

During FY 2018 the County will engage the public through the following efforts:

- Stormwater Utility Advisory Panel – As described above, a stakeholder group will continue to provide input as the County develops its stormwater utility.

- Small Watershed Restoration Project – The County will test the feasibility of the above-described community-based watershed restoration project. Our concept is to select a small, moderately impaired stream in or adjacent to the MS4 area and to engage a range of stakeholders to undertake the extensive watershed-wide measures required to restore the stream to supporting status. Our work in FY 2018 will include the final selection of candidate watersheds and an assessment of neighborhood buy-in in those watersheds.

- Benthic Sampling by Community-based Stream Monitoring Program – To satisfy data needs, and also to increase our engagement with the community, Albemarle will continue to contract with RCA's volunteer-rich StreamWatch Program to perform benthic sampling at streams in and near the MS4 area.

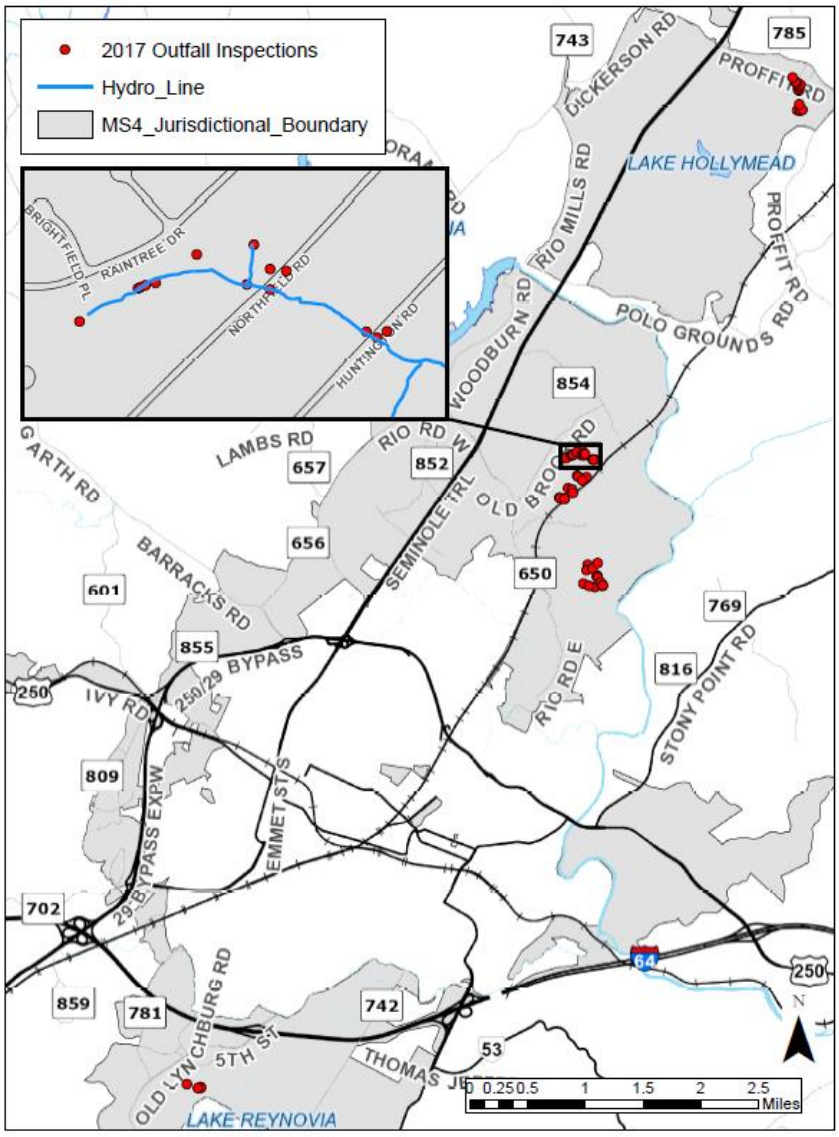
- Public Input on Stream Buffers – Albemarle will continue to solicit community advice around the re-drafting of our stream buffer protection rules.

MCM3 – Illicit Discharge Detection and Elimination

Interconnection Notifications - As of June 30, 2017, Albemarle County has officially notified 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.

Since 2006, over 900 outfalls have been surveyed. During the Year 4 reporting period, ***58*** outfalls were surveyed in the MS4 area (see map below). Excessive algae or other indicators of potential discharges were noted at five locations, but follow-up investigations revealed no illicit discharges. In one case, the local sewer authority was contacted to investigate a suspected discharge from a failing septic system, but, again, no line break or other discernible problem was discovered.

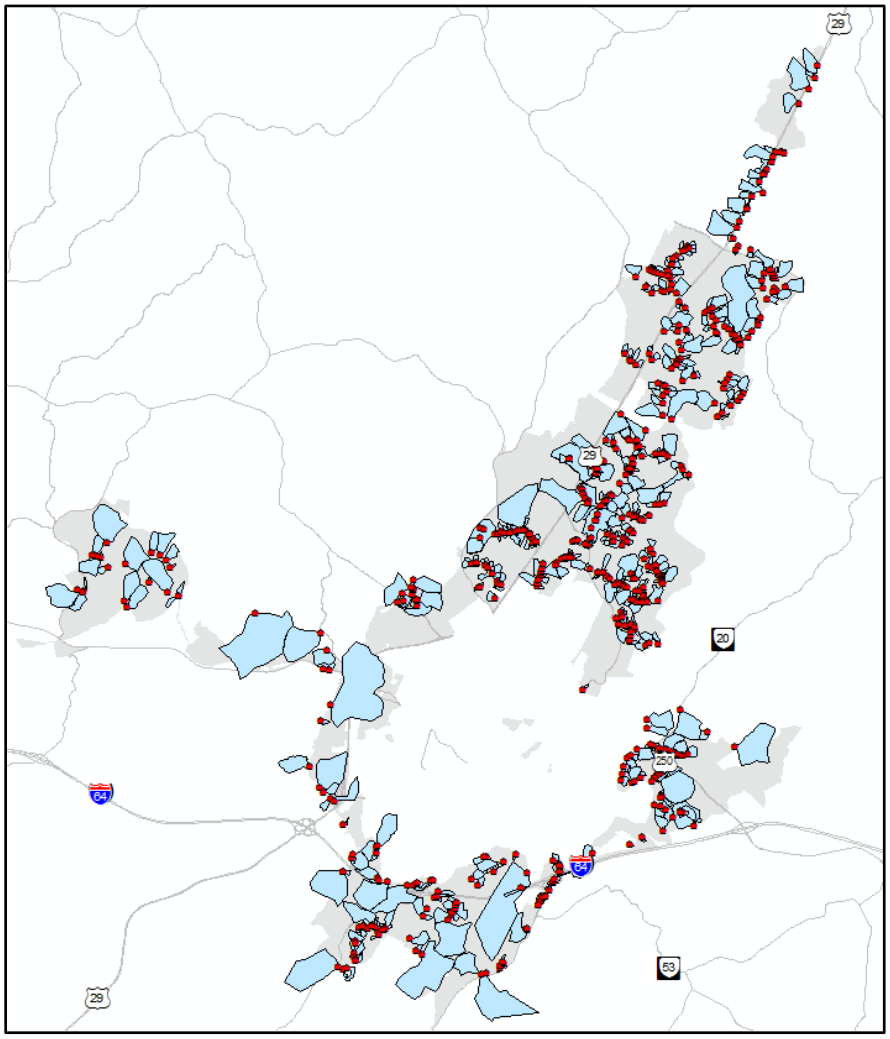


Above: Outfalls surveyed in MS4 area during fiscal year 2017.

<u>"At large" illicit discharges</u> - 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, six complaints were investigated. Two locations were businesses, and, following communications and guidance from the County, the problems were resolved. One location was a trailer park with an aging septic system. The County did not have the authority to regulate at this site, but reached out to the Virginia Department of Health and Virginia Department of Environmental Quality. Neither agency was able to address the problem. The other three sites were single-family residences, and investigations revealed no apparent problems.

<u>Outfall Mapping</u> –

Albemarle has been surveying outfalls throughout the County for more than a decade, and compiling records of outfall locations and dry-weather screening results. During DEQ's May 30th inspection of Albemarle's MS4 program, the County reported that we had identified 518 outfalls *within* the MS4 area. However, with subsequent scrutiny of our records and additional GIS analysis we have found a total of 587 outfalls *within and/or draining* the MS4 area. 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. Mapped outfalls and their watersheds are shown below.



Above: Albemarle County outfalls subject to MS4 regulations. Blue shapes are watersheds associated with each outfall.

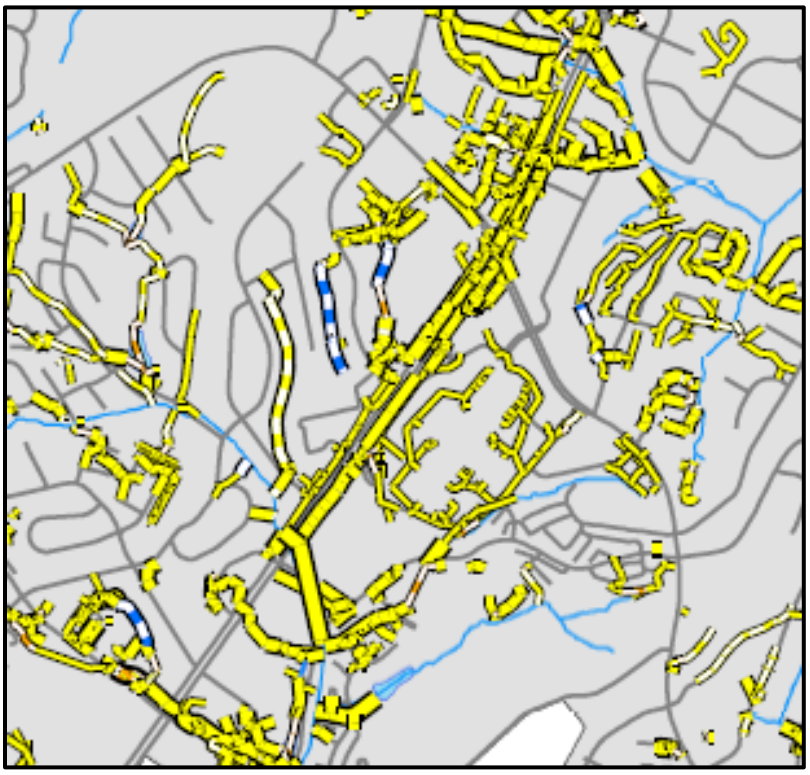
New outfalls resulting from private or public construction are reported in the MCM5 section of this report.

Storm Sewer Mapping - As reported during the May 30th inspection of Albemarle's MS4 Program by the Department of Environmental Quality, the 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 – are operated by Virginia Department of Transportation (VDOT). In addition, the County does not maintain water or sanitary sewer systems. As such, the County presently does not operate a traditional public works department.

Nonetheless, the County is responsible for infrastructure on its properties – including school properties – and a large amount of conveyance infrastructure located on private property but within public easements. The infrastructure located on private property has typically been constructed by private developers. During the development permitting process, the County requires that certain portions of this infrastructure be dedicated to the County by way of drainage easements. This infrastructure becomes part of the County's MS4.

Much of the County's MS4 is integrated with VDOT's MS4. In order to create a complete and comprehensive representation of the drainage network, the County has been attempting to acquire drainage infrastructure data from VDOT. Although the County has been unsuccessful to date, we will continue our efforts to work with VDOT to share drainage data.

Our infrastructure mapping efforts were described in our Year 2 Annual report. The figure below shows an example of our progress through July, 2017.



Above: Storm sewer infrastructure (yellow) in the Route 29 corridor.

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 1 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 select 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.

Albemarle County enforcement of state and local laws regulating land-disturbing activities. July 1 2016 through June 30, 2017.						
	Number of new land-disturbing activities	**Total disturbed area (acres)**	**Number of inspections conducted**	**Number of *verbal warnings***	**Number of *notices to comply***	**Number of *stop work orders***
Regulated under Virginia Stormwater Management Program (≥10,000 square feet)	43	254.4	2,154	78	41	13
Regulated under Albemarle County Water Protection Ordinance (single-family building permits)	472	N/A for building permits	1,082	59	18	0

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 more than 1,000 SMFs in the County; 540 are located in 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:

Inspection records for stormwater management facilities in Albemarle County MS4 area. July 1, 2016 through June 30, 2017.	
Number of facilities in MS4 area	540
Number of inspections in MS4 area during FY17	239
Outcome = "compliant"	171
Outcome = "repairs needed"	52
Outcome = "pending"	15

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.

Albemarle County Local Government and Schools were both 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 have achieved E3 level certification in the Department of Environmental Quality's Virginia Environmental Excellence Program (VEEP) for the Department of Facilities and Environmental Services, Department of Parks and Recreation, and 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 has developed an IPM 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.

Training event	Date	Number of employees	Training objective
Hazardous Material Operation/OSHA Level II	August 9-11, 2016	11-Facilities and Environmental Services, 6-Parks and Recreation	8-hour annual refresher.
Hazardous Communication and Environmental SOP refresher	November 16, 2015	14 Facilities and Environmental Services	Environmental compliance programs and practices. Prevention of stormwater pollution during day-to-day operations.
Basic Good Housekeeping and Pollution Prevention	July 19, 2016	~ 139 various Public Schools staff	Prevention of stormwater pollution during day-to-day operations.
Pesticide application (various levels and certifications)	various dates throughout 2016/2017	8 Parks and Recreation, 1 Public Schools	Safe and environmentally responsible pesticide and herbicide application.

Program Plan Amendment: Nutrient Management Plans

Albemarle's 2013-2018 Program Plan erroneously posited that facilities outside our MS4 area were subject to review/regulation under the MS4 General Permit. We have since recognized this error, and have changed our Program Plan accordingly. The table below outlines our corrected plan, and includes

specific references to facilities that were previously included and have now been excluded from the plan.

Nutrient management plans have been developed for all subject facilities. In the case of elementary school facilities, plans have been developed but have not yet been reviewed by state regulators.

Albemarle County facilities subject to nutrient management plan requirements under MS4 permit (facility lies within MS4 area) and exempt from nutrient management plan requirements (facility lies outside MS4 area).		
	Acres	**Longitude/ Latitude**
In MS4 area; subject to MS4 permit		
Agnor-Hurt Elementary	~1.0	-78.48/38.09
Baker-Butler Elementary	~1.0	-78.42/38.12
Cale Elementary	~1.0	-78.50/38.00
Hollymead Middle School little league baseball	0.7	-78.43/38.11
Hollymead Middle School Soccer field	1.5	-78.43/38.11
Monticello High School Baseball	2.4	-78.49/37.99
Monticello High School Softball	0.9	-78.49/38.00
Woodbrook Elementary	~1.0	-78.46/38.09
Not in MS4 area; not subject to MS4 permit		
Albemarle High School baseball	2.1	-78.50/38.08
Albemarle High School soccer field (across from high school)	1.4	-78.50/38.08
Crozet Park Little League Baseball, turf infield	0.9	-78.69/38.06
Crozet Park baseball, turf infield	1.6	-78.69/38.06
Crozet Park soccer Field	1.4	-78.69/38.06
Darden Towe large soccer field	4.0	-78.45/38.04
Darden Towe Park standard soccer field	1.8	-78.45/38.04
Darden Towe Park large cool season grass soccer field	4.6	-78.45/38.04
Darden Towe Park junior soccer (closest to tennis courts)	0.7	-78.45/38.04
Darden Towe Park Softball 1	2.0	-78.45/38.04
Darden Towe Park Softball 2	2.0	-78.45/38.04
Darden Towe Park Softball 3	2.0	-78.45/38.04
Henley School baseball field	2.0	-78.70/38.05
Jack Jouett Middle School	7.5	-78.51/38.08
Western Albemarle High School practice field	1.6	-78.71/38.05

Program Plan Amendment: No High-Priority Facilities

We are hereby amending our 2013-2018 MS4 Program Plan to exclude all facilities originally identified as “high-priority facilities”. Most of the facilities lie outside our MS4 area, and though we apply high environmental standards for County operations at these facilities, they are not subject to MS4 rules and

reporting. One facility—the equipment shed at 401 McIntire Road--lies within our MS4 area, but all maintenance activities and storage occurs under roof and the facility presents no risk of stormwater pollution.

Per this amendment, Albemarle County has determined it possesses no municipal high-priority facilities with a high potential for chemicals or other materials to be inadvertently discharged to stormwater. All facilities excluded from our Program Plan are listed in the table below, along with reasons for their exclusion.

Albemarle facilities determined not to meet the definition of a "high-priority facility" under the MS4 General Permit			
Facility Name	**Facility Location**	**Facility Type**	**Reason for exclusion from Program Plan**
Equipment Shed	401 McIntire Road	Maintenance and storage shed	All maintenance activities and storage occur under roof
Vehicle Maintenance Facility	110 Lambs Lane, Charlottesville, VA 22901	Vehicle storage and maintenance yard	Facility is not in MS4 area
Building Services Yard	2751 Hydraulic Road, Charlottesville, VA 22901	Public works yard	Facility is not in MS4 area
Equipment and Maintenance Shed	Mint Springs Valley Park	Maintenance shop	Facility is not in MS4 area
Equipment and Maintenance Shed	Darden Towe Park	Maintenance shop	Facility is not in MS4 area
Equipment and Maintenance Shed	Walnut Creek Park	Maintenance shop	Facility is not in MS4 area
Equipment and Maintenance Shed	Chris Greene Lake Park	Maintenance shop	Facility is not in MS4 area

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 69.2% 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 4 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 staff of the TJSWCD.

Section 2: Local TMDL Action Plan Update

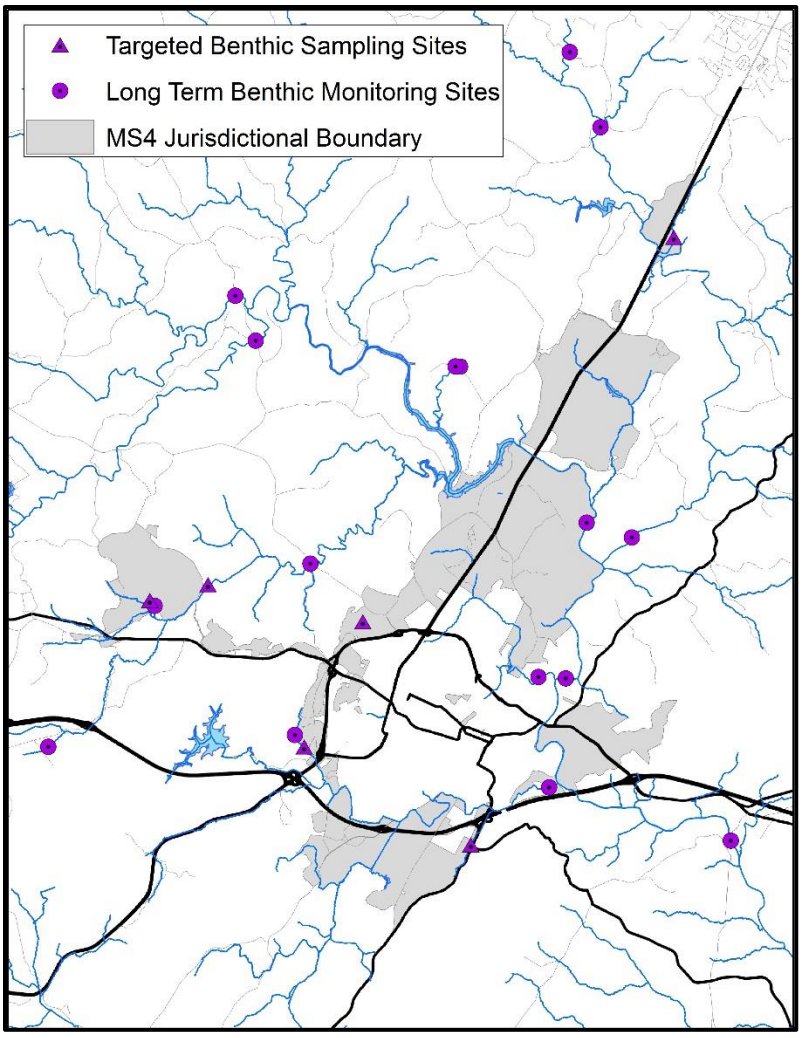
This following section provides an update of Albemarle County's "Combined Local TMDL Action Plan: Sediment TMDL for the Rivanna River and Bacteria TMDL for the Rivanna River Mainstem, North Fork Rivanna River, Preddy Creek and Tributaries, Meadow Creek, Mechums River, and Beaver Creek Watersheds"

Activities Conducted During Year 4 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 in Sections 1 and 3 of this report. Updates and other details about selected projects and activities are provided below.

Benthic sampling and tracking

As noted in our Program Plan Update, Albemarle County supports and works closely with the Rivanna Conservation Alliance (RCA). RCA's services include the StreamWatch benthic monitoring program, and 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 selected long-term and all recently established targeted sampling sites. The table below gives benthic scores at recently established targeted sampling sites.

Biological condition scores at newly established targeted benthic sampling sites			
Site Name	**Fall 2016**	**Spring 2017**	**Tentative assessment**
Herring Branch downstream from Boulders Road	63.0		Supporting
Cow Branch @ Rt 20	50.2		Non-supporting
Morey Creek Trib #1	53.9		Non-supporting
Little Ivy Creek Trib #2 downstream of Holkham Drive	81.4	73.8	Supporting
Ivy Creek trib #2 upstream of Ivy confluence		56.7	Non-supporting
Meadow Creek downstream of STAB High School		63.0	Supporting

Bacteria sampling and tracking

In addition to benthic monitoring, RCA conducts bacteria monitoring in and near the Albemarle MS4 area. As stated in our Local TMDL Action Plan, Albemarle intends to contract with RCA to perform additional bacteria sampling to meet needs specific to MS4 compliance and Local TMDL Action plan goals. RCA's is upgrading its bacteria protocol to meet Level III data quality standards. Though we originally intended to initiate additional sampling during FY 2017, we elected to wait until RCA attained Level III certification. RCA has now achieved that certification, and our contract additional sampling will begin during FY 2018.

Contemplated changes to legal authority

As part of Albemarle's ongoing commitment to stream stewardship, we are 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. Staff has conducted an informal online survey and four public meetings to date. A final public meeting will be held in October 2017. Staff is currently analyzing comments from the public and discussing potential options and recommendations to present to the Board in December 2017.

Formalization of procedures and roles

During the reporting year we clarified written escalation procedures to be applied in enforcement of stormwater facility maintenance regulations. We also clarified stormwater-related roles and responsibilities of various departments through memoranda of agreement.

Stormwater utility

As described in Section 1 of this report, Albemarle is working actively towards the establishment of a utility fee to fund stormwater management. During the FY 2018 reporting period the planning focus will shift towards implementation details such as assessment method and fee structure. The Board of Supervisors decision on whether or not to establish the utility is expected in spring 2018.

Case-by-case agreements for joint projects

Instead of developing a single MOU regarding joint responsibility for cleanup of TMDL-impaired waterbodies, as discussed in the local TMDL Action Plan, Albemarle County, the City of Charlottesville, and the University of Virginia will develop agreements on an as-needed basis to share credits and responsibilities for individual projects. The first of these agreements is anticipated for the RiverRun stream restoration project, which is currently in design and will traverse City/County jurisdictional boundaries. 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.

Story map

As mentioned in Section 1 of this report, working through the RSEP partnership, we are designing a web-based story map to provide the public with thoughtfully organized information about stormwater stewardship. Multiple meetings devoted to content and design were held during spring and summer of 2017, and we expect to publish the map before the end of the reporting period.

Stormwater facility upgrade

Albemarle aspires to upgrade an older-generation County-maintained stormwater detention facility within the MS4 area. The facility, located at Rio Hill Shopping Center, currently provides minimal retention and minimal water quality benefit. Design options have been developed with assistance from a consultant. Pending clarification of easement issues and landowner permission, we hope to initiate retrofit work during this reporting period.

Section 3: Chesapeake Bay TMDL Action Plan Update

Per requirements in Section I.C. of the General Permit, the County has prepared an Action Plan for the Chesapeake Bay TMDL. The Action Plan was submitted to DEQ in September 2015 and was subsequently approved. Section I.C.4 of the MS4 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 is provided in Attachment B as required by Section I.C.4.b of the MS4 permit. Because BMP installation occurs over a period of time – sometime 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 bonds for stormwater BMPs for are released as the BMP implementation date. Note that one facility included has a construction date listed prior to the 2016-

2017 reporting period; this facility was included because County Staff were not aware of its existence until the current reporting period.

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." To the best of County Staff's knowledge, Table 1 provides a comprehensive list of grandfathered projects (as defined by 9VAC 25-870-48) which have initiated construction between July 1, 2016 and June 30, 2017.

Table 1. List of grandfathered projects which initiated construction during the reporting period

Project Name	Disturbed Acres
Collins Medical Center	0.55
Out of Bounds	9.48

Chesapeake Bay TMDL - POC Accounting Update

Section I.C.4.b and I.C.4.c of the MS4 permit requires permittees to provide as part of this Annual Report the estimated POC reductions associated with newly implemented stormwater control measures and the cumulative progress toward meeting the compliance targets for nitrogen, phosphorus, and total suspended solids for the Chesapeake Bay TMDL. Albemarle County's progress toward meeting the Chesapeake Bay TMDL goals has increased during the reporting period by 8.4 pounds of nitrogen, 2.2 pounds of phosphorus, and 2,089 pounds of total suspended solids as a result of the implementation of new control measures associated with grandfathered projects. Table 2 presents a summary of total pollutant of concern (POC) Reduction Requirements and Credits obtained through June 30, 2017.

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. An updated spreadsheet containing calculations for grandfathered projects and newly implemented control measures is included as Attachment C.

Table 2: Summary of Total POC Reduction Requirements and Credits				
	Type	Phosphorus (lbs/yr)	Nitrogen (lbs/yr)	Total Suspended Solids (lbs/yr)
Reduction Requirements (1st cycle – 5 %)		30.0	182.6	15,383.9
(3rd cycle – 100%)		757.9	3,845.5	311,791.6
Reduction Credits	New and Grandfathered Sources	119.3	469.4	55,639.9
	Structural BMPs	70.4	268.7	33,558
	Stream Restorations	81.7	172.4	114,892
	BMPs installed between January 1, 2006 and July 1, 2009	253.3	2,601.4	228,654
	Connection of septic systems to sanitary sewer	0	373.5	0
	Nutrient Management Plans	0.1	0.9	0
	Total Reduction Credits	**524.8**	**3,866.3**	**432,744**
Total Reductions Remaining		233.1	N/A	N/A
Total % Reductions Achieved		69.2%	101.1%	138.8%

Chesapeake Bay TMDL - Future Projects Update

Section I.C.4.d of the MS4 permit requires the County to provide a list of control measures that are expected to be implemented during the next reporting period and the expected progress toward meeting the compliance targets for nitrogen, phosphorus, and total suspended solids.

The County's Chesapeake Bay TMDL Action Plan (approved December 30, 2015) provides descriptions of stormwater retrofits and stream restoration projects that were being considered by the County at the time of Action Plan submission for construction during the current permit cycle (Tables 5.5 and 5.6 in Albemarle County's Approved Chesapeake Bay TMDL Action Plan). As stated in the 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. Since the initial submission of the Chesapeake Bay TMDL Action Plan, newly available information and grant funding has led the County to reprioritize future stormwater / stream restoration projects for construction during the current reporting period. These projects are summarized below in Tables 3 and 4. Estimates for cost and nutrient removal are still preliminary and are expected to change before the projects are implemented. The total nutrient removal for stream restoration projects is especially likely to change, as the estimate currently provided is based on the interim rate found in the Expert Panel Guidance, whereas the Protocols from the Expert Panel Guidance will likely ultimately be used to calculate TMDL credit. While the County has engineering

firms under contract and has begun design on the projects, these projects are still early in the design stage, and the County explicitly cannot guarantee when or if these projects will ultimately be implemented. However, completion of construction for these projects is currently anticipated in 2018 or 2019. TMDL Credit for these projects will be claimed for the reporting period in which they are implemented.

Table 3 – Overview of Potential Stream Restoration Projects						
	Planning-level estimates					
Site Name	**Length (ft)**	**TP Removal* (lb/yr)**	**TN Removal* (lb/yr)**	**TSS Removal* (lb/yr)**	**Cost Estimate**	**Location**
Chapel Hills Restoration (formerly called Church of the Incarnation)	1,260	85.7	94.5	56,549	$376,200	78°28'29.62"W 38°4'19.09"N
RiverRun Restoration	560	38.1	42.0	25,132	$245,992	78°27'10.54"W 38°3'26.24"N

*Nutrient removal estimates are based on default rate specified in Recommendations of the Expert Panel to Define Removal Rates for Individual Stream Restoration Projects and are expected to increase.

Table 4 – REVISED Overview of Potential Dry Detention Retrofits							
	Planning-level estimates						
Site Name	**Retrofit Type**	**Drainage Area (ac)**	**TP Reduction (lb/yr)**	**TN Reduction (lb/yr)**	**TSS Reduction (lb/yr)**	**Cost Estimate**	**Location**
Minor Hill Townhouses	Bioretention	6.38	3.68	29.62	1,326.3	$138,000	78°29'13.1"W 38°04'38.3"N

Section 4: List of Attachments

Attachment A) New Albemarle Stormwater Facilities_GP Year 4_submitted 10_1_2017.xlsx
Attachment B) FY2017 New Stormwater Facilities for Chesapeake Bay TMDL Action Plan Update.xlsx
Attachment C) FY2017 Load Reduction Calculations for Chesapeake Bay TMDL Action Plan Update.xlsx