

**Albemarle County
2013 – 2018
MS4 Program**

**Annual Report
– Year 3 –**

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

**Albemarle County
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October 2016

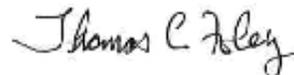
Albemarle County, Virginia is authorized to discharge stormwater into the State's surface waters through a General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4s) under the Virginia Stormwater Management Program.

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,



Thomas C. Foley
County Executive

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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
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

This report documents Albemarle County’s activities related to the six minimum control measures and other requirements for Year 3 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.

Roles and Responsibilities

Most program activities are carried out by staff from both Albemarle County Local Government (including the Departments of Facilities and Environmental Services and Community Development) and Albemarle County Public Schools. Additional activities are performed per contractual arrangement by staff of the Thomas Jefferson Soil and Water Conservation District. Key County staff associated with each Minimum Control Measure are listed in the table below.

Minimum Control Measure	Albemarle Staff Contacts
1) Public education and outreach	John Murphy, MS4 Program Manager Department of Facilities and Environmental Services jmurphy@albemarle.org / 434-296-5815 x3411
2) Public involvement/participation	Greg Harper, Chief of Environmental Services Department of Facilities and Environmental Services gharper@albemarle.org / 434-296-5816 x3410
3) Illicit discharge detection and elimination	
4) Construction site stormwater runoff control	Frank Pohl, County Engineer Community Development Department fpohl@albemarle.org / 434-296-5832
5) Post-construction stormwater management	John Murphy (see above) Greg Harper (see above)
6) Pollution prevention/good housekeeping	Andy Lowe, Environmental Compliance Manager (Local Gov’t.) Department of Facilities and Environmental Services alowe@albemarle.org / 434-296-5816 Lindsay Check Snoddy, Environmental Compliance Manager Albemarle County Public Schools lcsnoddy@k12albemarle.org / 434-975-9340

During the reporting year, the County reorganized its departments, resulting in the newly formed Department of Facilities and Environmental Services (FES). The former Water Resources Division was incorporated with other programs into the Division of Environmental Services and is now housed in FES. At the end of the reporting year the County created a new position—MS4 Program Manager—in the Environmental Services Division. The addition of the new position will facilitate improved consolidation and efficiency in the areas of MS4 compliance, reporting, and general water resources stewardship.

New MS4 Outfalls / Mapping

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 doesn't 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. Efforts continue and we plan to complete the infrastructure mapping project to coincide with the July 1, 2017 deadline to map MS4 outfalls per the General Permit requirement.

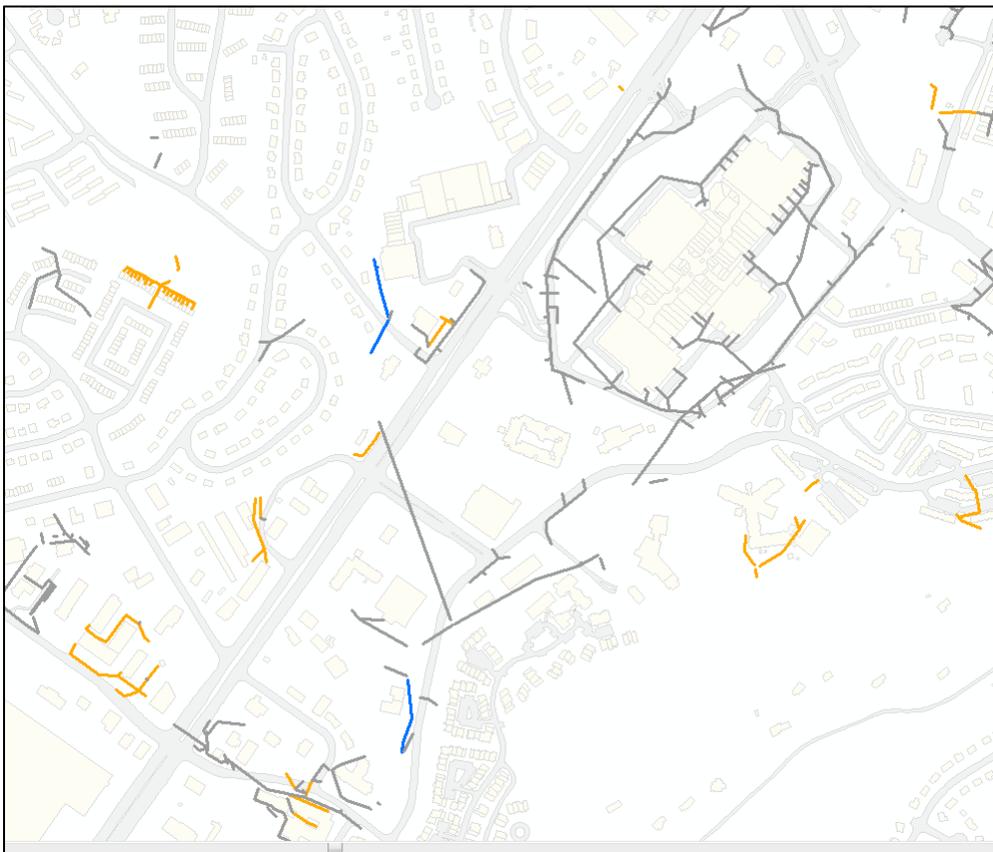


Figure 1. Storm sewer infrastructure in the Route 29 corridor. Blue=County-owned; orange=privately owned; grey=ownership not yet determined.

Any new outfalls resulting from private or public construction are reported as discussed in the MCM#5 – Permanent Stormwater Management Facilities section of this report.

MCM1 – Public Education and Outreach

Year 3 MCM1 Activities

The County (both Local Government and Schools) has continued 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). 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/>. A summary of yearly *unique visitors* to the RSEP site is presented in the table below.

Rivanna Stormwater Education Partnership web traffic	
reporting year	total unique visitors
2011/2012	7,418
2012/2013	11,047
2013/2014	10,600
2015/2016	8,415

RSEP meets at least six times per year to discuss and organize initiatives and share information pertaining to meeting stormwater permit requirements. Specific activities that the partnership undertook this past year include:

Date	Task	Approximate audience	estimated % of audience reached	High-priority water quality issues addressed (Sediment, Bacteria, Nitrogen)
July, November, December 2015	Animated video ad on water pollution issues (sediment, nutrients, bacteria) aired before every movie at 14 Stonefield Regal Theaters for two weeks	50,000 movie attendees	~40% ¹	S, B, N
September 2015	Ad for fall and spring BMPs posted on 25 CAT buses each season	647,000 individual rides	~12% ²	S, B, N
April 2016	Ad for fall and spring BMPs posted on 25 CAT buses each season	647,000 individual rides	~12% ²	S, B, N
October 1, 2015	Quarter-page ad for fall BMPs placed in <i>C-ville Weekly</i>	20,000 copies	~20% ³	S, B, N
April 24, 2016	Display at Charlottesville Eco-Fair for 6 hours	100 visitors	N/A	S, B, N
June 22, 2016	RSEP workshop on Maintenance of Stormwater Management Facilities attended by 38 local government and university MS4 operators, property managers, landscapers, homeowner association members, commercial and private facility owners	38 attendees	N/A	S, B, N
June 25, 2016	Pollocks Branch Walkable Watershed Community Festival	TV and print media audience	unknown	S, B, N

¹ based on average monthly theater attendance of 50,000 with some repeat attendees

² based on ridership of 6,000 per day and assuming number of unique riders equals 2x daily ridership

³ based on weekly distribution rates and combined MS4 population of 100,000

In addition to the above RSEP activities, the TJSWCD, under an ongoing contract with the County, continues to provide watershed education to County public school students, staff, and parents through the Meaningful Watershed Education Experience (MWEE). During the 2015-2016 school year, approximately 1,350 Albemarle County Public School 4th graders and 200 adults took part in MWEEs at Camp Albemarle on the Mormons River. The experience included a demonstration of benthic stream sampling and a tutorial on watersheds using the Enviroscope watershed model.

Future MCM1 Activities

We anticipate conducting educational activities similar to those described above during Year 4 of the current permit cycle.

Additionally, in partnership with local environmental organizations, we are commencing discussions aimed at building a web-based watershed map to provide the public with both current and trend information about the health of waterways throughout the County.

MCM2 – Public Involvement and Participation

Year 3 MCM2 Activities

Albemarle's efforts to promote public involvement and participation during year 3 of the permit cycle were as follows:

- Funding for RCA/StreamWatch – For more than a decade, the County has helped fund the StreamWatch stream monitoring program. Engaging a corps of over 100 volunteers, StreamWatch conducts extensive benthic monitoring throughout the Rivanna basin, as well as bacterial monitoring in the Charlottesville and Albemarle MS4 areas. In January 2016 StreamWatch merged with Rivanna Conservation Society to form the Rivanna Conservation Alliance (RCA). Albemarle plans to continue funding what is now identified as the StreamWatch program of RCA.
- Exploration of stormwater utility – Albemarle is exploring adopting a stormwater utility to fund regulatory and other water stewardship responsibilities. We consider public involvement to be vital to this process. During year 3, Albemarle hosted two meetings of the Water Resources Funding Advisory Committee (WRFAC). The WRFAC is a citizen advisory group composed of stakeholders from diverse sectors of the community (farmers, developers, environmentalists, etc.) for the exclusive purpose of developing recommendations about the utility to County staff and the Board of Supervisors.

In addition to the WRFAC meetings, the County hosted six community meetings in dispersed locations to inform and solicit input about the consideration of the utility:

- July 21 - community meeting at Northside Library
 - July 27 - Pantops Community Advisory Committee
 - July 27 - Village of Rivanna Community Advisory Committee
 - August 10 - First Baptist Church
 - August 4 - White Hall Ruritan
 - August 11 - Farm Bureau (at Western Albemarle High School)
- Volunteer participation in the installation and management of BMPs – The County has actively promoted public involvement in the installation and maintenance of biofilters on government properties. In April 2016, volunteers helped plant new biofilters at the Lewis and Clark Exploratory Center. On a continuing basis, Master Gardeners maintain the vegetation within a rain garden at the County Office Building.

Future MCM2 Activities

During FY 2017 the County will engage the public through the following actions.

- The Water Resources Funding Advisory Committee's recommendations will be brought to the Board of Supervisors as part of the County's ongoing effort to determine the most appropriate means for funding our stewardship and regulatory responsibilities.
- The County will explore the potential for a 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. The effort would require the cooperation of property owners, the involvement of multiple agencies and organizations, and grant funding. Most of the work in FY 2017 will focus of feasibility, partnership development, and evaluation of candidate watersheds.
- To satisfy data needs, and also to increase our engagement with the community, Albemarle will contract with RCA's StreamWatch Program to perform benthic sampling at streams in and near the MS4 area.

MCM3 – Illicit Discharge Detection and Elimination

Albemarle County has not officially notified any other local MS4 of physical interconnections. Since the County's regulated area abuts those of Charlottesville, UVA, PVCC, and VDOT, it is likely that there are many existing storm sewer connections between neighboring MS4s. These interconnections will be illuminated as each entity completes the mapping of respective storm sewer systems. However, the County has not engaged in any activity which resulted in the creation of new interconnections during this reporting period.

Per a continuing contractual arrangement with the Thomas Jefferson Soil and Water Conservation District (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, culvert, and tributary channel outfall locations and conducting a visual screening for signs of illicit discharges. Other details of the survey protocol are described in the Program Plan.

In previous Annual Reports we submitted data about all outfall inspections. Beginning with this report and per guidance from DEQ, we are limiting our reporting to outfalls in streams and watersheds within and adjacent to the MS4 area. Since 2006, over 900 outfalls have been surveyed. During the Year 3 reporting period, 65 outfalls were surveyed in the Route 29 corridor north of Charlottesville (see Figure 2 below). One potential illicit discharge was found and will be further investigated this fall.

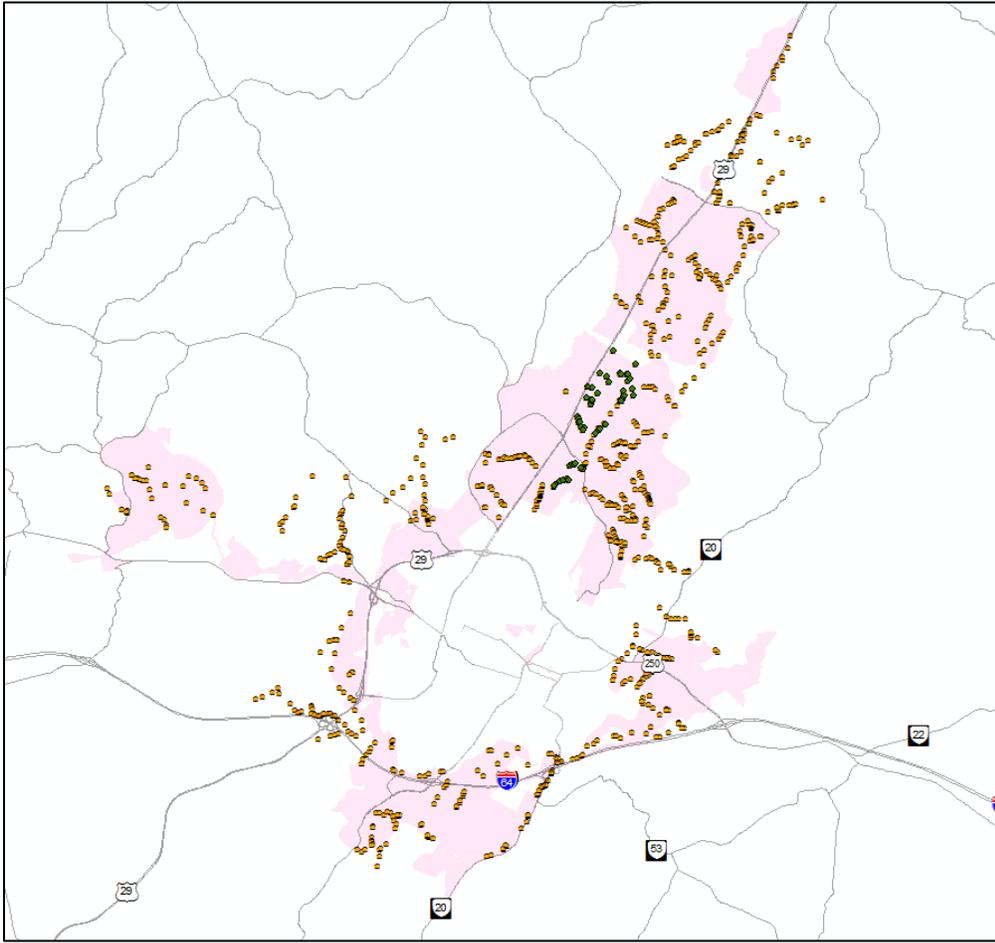


Figure 2. Outfalls surveyed in and near MS4 area since 2006. Dark icons were surveyed in FY 2016.

The County annually responds to a few communications by the public of suspected illicit discharges through its web-based reporting form at the RSEP website. Additional reports or inquiries from the public come through the normal 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 a database.

MCM4 – Construction Site Stormwater Runoff Control

Albemarle County has been authorized by DEQ as a local authority of the Virginia Stormwater Management Program (VSMP). The DEQ authorization letter is included as an attachment to the Program Plan. 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. The standards and specifications for erosion and sediment control are no different than State regulations except the County has more stringent standards 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 must be developed and maintained in perpetuity

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

total number of regulated new land-disturbing activities	43
total disturbed area (acres)	259.02
total number of inspections conducted	1430
summary of enforcement actions:	
• verbal warnings	109
• notice to comply	74
• stop work orders	5

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

Albemarle County has been authorized by DEQ as a local authority of the Virginia Stormwater Management Program (VSMP). Per VSMP and County requirements, Albemarle periodically inspects permanent privately and publicly-owned stormwater BMPs. The number of BMPs within the County has grown to about 980. Our goal is to inspect each BMP at the rate specified in the program plan but at a minimum of once every permit cycle. The locations of the BMPs are maintained in a GIS and other data are maintained in a linked database.

In past Annual Reports we submitted inspection data for BMPs throughout the County. Commencing with this report, and per guidance provided by DEQ, we are submitting data exclusively for BMPs within our MS4 area. The table below summarizes our inspection activity:

number of facilities in MS4 area		525
number of inspections during FY2016		159
compliant	78	
pending	7	
repairs completed	9	
repairs needed	65	

Information regarding stormwater facilities brought online during the reporting period is provided in Attachment A.

MCM6 – Pollution Prevention & Good Housekeeping

Through our Environmental Management Policy, the County is committed to environmental compliance, pollution prevention, and continual environmental improvement. Many of the efforts related to the County’s implementation of an Environmental Management System (EMS) satisfy requirements under this stormwater permit. Local Government and Public Schools have separate programs administered by different staff.

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

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.
- We have implemented our Safer Chemical Management Policy, which mandates that Green-certified cleaners be used and that the majority of herbicides be bio-based.
- We have implemented an Integrated Pest Management (IPM) program for the safer treatment of indoor pests as part of the Safer Chemical Management Policy.
- The County Public Schools has 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.
- The County Public Schools also developed a program to save potable water and reduce unnecessary runoff by adjusting schedules and irrigation amounts based on monitored rainfall.
- Weekly inspections are done at a permitted vehicle wash outfall. Interior automated wash bay reduces number of vehicles being washed at exterior bay.
- Maintenance and custodial personnel at fuel site locations are trained on cleanup measures and emergency response.

Albemarle County was certified at the Gold Level in the Virginia Municipal League's "Go Green Virginia" challenge which is a statewide competition for localities to showcase their various pollution prevention-related programs; Albemarle County Public Schools was also certified at the Gold Level. We've 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.

While we have identified locations requiring Storm Water Pollution Prevention Plans (SWPPPs) (see Program Plan), we have not yet completed the SWPPPs, which are due in 2017.

We have established nutrient management plans (NMPs) for 59% of identified acreage and are thus well ahead of the General Permit's 36-month benchmark of 40%.

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

training event	training date	number of employees attending	training objective
Hazardous Material Operation/OSHA Level II	August 11-13, 2015	10 FES 6 Parks and Recreation	8-hour annual refresher
Hazardous Communication and environmental SOP refresher	November 18, 2015	19 FES	environmental compliance programs and preventing stormwater pollution during day-to-day activities and operations
Basic Good Housekeeping and Pollution Prevention	various dates throughout 2015/2016 winter/spring	~ 150 various Public Schools staff	preventing stormwater pollution during day-to-day activities and operations

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 been 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. As noted in our Chesapeake Bay TMDL Action Plan, submitted and approved in 2015, Albemarle has already effectively met the mandated 3rd cycle reduction targets for sediment and nitrogen, and has already achieved 68% 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 in non-rural areas 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 activities the County has completed during the reporting year for 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.

TMDL Action Planning

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. Our Chesapeake Bay TMDL Action Plan Update is included in this report.

Under separate cover, and concurrently with the submittal of this Annual Report, the County is submitting its “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 Planned for Next Reporting Period

In addition to continuing the implementation of core programs and initiatives, the County will focus on the following activities during the 2016–2017 reporting period.

- Board of Supervisor review of Water Resources Funding Advisory Committee recommendations regarding dedicated funding mechanism for water resources programs.
- Establish benthic sampling stations at margins of MS4 area to better document and understand conditions of streams draining into and out of the area.
- Explore potential for partnering with community organizations to develop web-based watershed map and data portal (see Section MCM2).
- Explore potential for community-based watershed restoration project (see Section MCM3).
- Where needed, formalize MS4 compliance roles of County departments with memoranda of agreement.
- Continue to formalize progressive compliance and enforcement procedures.
- Continue to improve information management for stormwater facilities, outfall screenings, and illicit discharge responses.

Chesapeake Bay TMDL Action Plan Update

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

Section I.C.4.b of the MS4 permit dictates that the operator must provide a list of control measures implemented during the reporting period. This data is provided in Attachment B. 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.

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, 2015 and June 30, 2016.

Project Name	Permit Number	Permit Date	Disturbed Acres	Development Acres
5th Street Station	VAR10E976	9/26/2014	62.0	86.9
Albemarle Health and Rehabilitation Center	VAR10D888	10/24/2014	6.26	8.41
Chick fil A	VAR10F774	10/3/2014	2.79	2.79
Church of Our Saviour	VAR10G284	10/15/2014	1.8	6.16
CMA Colonial Auto Center	VAR10C895	7/25/2014	9.0	14.37
Goodwill Mill Creek Dr	VAR10E125	9/5/2014	0.8	0.8
Jim Price Chevrolet	VAR10F231	9/19/2014	1.2	10.0
Northside Library	VAR10D711	9/5/2014	3.11	3.11
Pantops Corner	VAR10E170	9/12/2014	7.01	7.01
Rolkin Road Retail Center	VAR10G008	10/10/2014	1.3	1.7
The Lofts at Meadowcreek	VAR10E747	9/5/2014	2.6	2.8
Wetsel Property Surplus Soil Disposal Area	VAR107249	11/21/2014	3.06	3.06

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 61.7 pounds of nitrogen, 7.7 pounds of phosphorus, and 2,362 pounds of total suspended solids as a result of the initiation of construction of the grandfathered projects and the implementation of new control measures. Table 2 presents a summary of total pollutant of concern (POC) Reduction Requirements and Credits obtained through June 30, 2016.

Some grandfathered projects resulted in deductions of TMDL credit obtained to date, and other grandfathered projects resulted in accumulation of additional TMDL credits. In addition to grandfathered projects, TMDL credit has been claimed for some control measures which were implemented during the reporting period for previous land disturbing activities. 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	117.1	461.1	53,550.4
	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		522.6	3,877.9
Total Reductions Remaining		235.3	-32.4	-118,863
Total % Reductions Achieved		69.0%	100.8%	138.1%

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. While the County is currently expecting to begin implementation of the projects described in Tables 3 and 4 in the next reporting period, these projects are relatively early in planning stages, and the County explicitly does not guarantee when or if these projects will occur. 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	4.43	2.5	20.2	883.8	\$138,000	78°29'13.1"W 38°04'38.3"N

List of Attachments

- Attachment A) New Albemarle Stormwater Facilities_GP Year 3_submitted 10_1_2016.xlsx
- Attachment B) New Stormwater Facilities for Chesapeake Bay TMDL Action Plan Update.xlsx
- Attachment C) Load Reduction Calculations for Chesapeake Bay TMDL Action Plan Update.xlsx