VPDES General Permit for

Discharge of Stormwater from MS4s

General Permit No: VAR040039

Draft Local (Bacteria) TMDL Action Plan For Mill Creek and Powhatan Creek

Prepared For:

William & Mary

Prepared By:

TRC Engineers, Inc.

June 30, 2015

Updated May 11, 2020

Updated April 4, 2025

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APPENDICES

1.0 SIGNED CERTIFICATION (PART IV K-2):

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.

_____

Responsible Official Signature Date

Sean Hughes
Associate VP for Business Affairs

VAR040039 The College of William & Mary
Permit Number MS4 Name

2.0 UPDATES TO APPROVED LOCAL (BACTERIA) TMDL ACTION PLAN

The Phase 3 Municipal Separate Storm Sewer System (MS4) General Permit issued on November 1, 2023, requires the William & Mary (university) to update its local TMDL Action Plan. This section summarizes the updates to the previously approved Powhatan Creek and Mill Creek TMDL Action Plan to meet the conditions outlined in the current MS4 permit (General Permit VAR040039) of Part II B 3, B 4, B 5, B 6, B 7, and B 8, as applicable. This addendum/update to the existing approved plan will address changes to the plan since its last update/approval in 2020 as well as updates to reflect requirements in the current MS4 permit effective November 1, 2023.

The following language in *italic* typeface are the items listed in the current permit related to the required update to the previously approved local TMDL action plan, followed by responses in **bold** typeface:

Part II - TMDL Special Conditions

B. Local TMDL Special Condition.

1. *Permittees applying for initial coverage under this general permit shall develop a local TMDL action plan designed to reduce loadings for pollutants of concern if the permittee discharges the pollutants of concern to an impaired water for which a TMDL has been approved by the U.S. Environmental Protection Agency (EPA) prior to October 31, 2023, and in which an individual or aggregate wasteload has been allocated to the permittee. The permittee shall develop action plans to meet the conditions of Part II B 4, B 5, B 6, B 7, and B 8 as applicable. Each local TMDL action plan shall be provided to the department no later than October 31, 2028, unless the department grants a later date.*

   Response:

   N/A, William & Mary was previously covered under the General VPDES Permit for discharges of stormwater from MS4 effective November 1, 2018. See item 2 below.

2. *Permittees previously covered under the General VPDES Permit for Discharges of Stormwater from MS4 effective November 1, 2018, shall develop and maintain a local TMDL action plan designed to reduce loadings for pollutants of concern if the permittee discharges the pollutants of concern to an impaired water for which a TMDL has been approved by the U.S. Environmental Protection Agency (EPA) as described in Part II B 2 a and 2 b:*

   Response:

   William & Mary was previously covered under the General VPDES Permit for discharges of stormwater from its MS4 on November 1, 2018. As shown in Figure 1, some portions of the W&M MS4 area discharge into Powhatan Creek, which is impaired and has an EPA-approved Bacteria TMDL. No portions of the university's MS4 area discharge into Mill Creek.

   A TMDL Action Plan was originally developed in June 2015 as part of the Phase 1 permit cycle, updated in 2020 as part of the Phase 2 permit cycle, and is currently

being updated as part of the Phase 3 (current) permit cycle, which became effective on November 1, 2023.

a. For TMDLs approved by EPA prior to July 1, 2018, and in which an individual or aggregate wasteload has been allocated to the permittee, the permittee shall develop and initiate or update as applicable the local TMDL action plans to meet the conditions of Part II B 4, B 6, B 7, and B 8, as applicable, no later than 18 months after the permit effective date and continue implementation of the action plan. Updated action plans shall include:

1) An evaluation of the results achieved by the previous action plan; and

2) Any adaptive management strategies incorporated into updated action plans based on action plan evaluation.

Response:

Bacteria TMDLs for Mill Creek and Powhatan Creek were approved by the EPA prior to July 1, 2018, with an aggregate wasteload allocation assigned to William & Mary and City of Williamsburg. This action plan is an updated version of the 2020 action plan and has been developed to meet the requirements of Part II B 4, and B 5. Parts II B 6, B 7, and B 8 are not applicable.

b. For TMDLs approved by EPA on or after July 1, 2018, and prior to October 31, 2023, and in which an individual or aggregate wasteload has been allocated to the permittee, the permittee shall develop and initiate implementation of action plans to meet the conditions of Part II B 4, B 5, B 6, B 7, and B 8, as applicable no later than 30 months after the permit effective date.

Response:

No TMDLs were approved by the EPA for Mill Creek and Powhatan Creek on or after July 1, 2018, and prior to October 31, 2023; therefore, this section is not applicable.

3. *The permittee shall complete implementation of the TMDL action plans as determined by the schedule. TMDL action plans may be implemented in multiple phases over more than one permit cycle using the adaptive iterative approach provided adequate progress is achieved in the implementation of BMPs designed to reduce pollutant discharges in a manner that is consistent with the assumptions and requirements of the applicable TMDL.*

   Response: Acknowledged! This TMDL action plan is implemented in phases and permit cycles according to schedule in sections 5 and 6. Regular monitoring, assessment, and reporting will be conducted to track progress and make necessary adjustments to meet water quality improvement goals.

4. *Each local TMDL action plan developed by the permittee shall include the following:*

   a. *The TMDL project name;*

      Response:

      Bacteria Total Maximum Daily Load Development for Mill Creek and Powhatan Creek

   b. *The EPA approval date of the TMDL;*

      Response: April 28, 2009

   c. *The wasteload allocated to the permittee (individually or in aggregate), and the corresponding percent reduction, if applicable;*

      Response:

      This TMDL assigns bacteria (E. Coli and enterococci) WLA to the City of Williamsburg (MS4 permit #: VAR040027) and specifies that the load from the City of Williamsburg includes the College of William and Mary (MS4 permit #: VAR040039). The E. coli and enterococci loads for Powhatan Creek Watershed from the impervious land areas within the limits of the MS4 permits are included in the waste load allocation (WLA). The WLA assigned jointly to the City of

Williamsburg and the university for Powhatan Creek is shown in Table 1 below. The university's property is approximately 8.7% of the combined City and university drainage area to Powhatan Creek and less than 0.2% of the total drainage area to Powhatan Creek, which includes James City County. The university's MS4 limits are outside of Mill Creek drainage area, therefore, no action plan is required for the Mill Creek.

Table 1 - Powhatan Creek TMDL WLA Jointly Assigned to William & Mary and City of Williamsburg.

Waterbody	Segment	Impairment	WLA
Tidal Powhatan Creek	VAT-G10E-01	*Enterococci* Bacteria	0.2×10^{12} cfu/yr
Non-Tidal Powhatan Creek	VAT-G10R-02	*E. coli* Bacteria	0.4×10^{12} cfu/yr

d. Identification of the significant sources of the pollutants of concern discharging to the permittee's MS4 and that are not covered under a separate VPDES permit. For the purposes of this requirement, a significant source of pollutants means a discharge where the expected pollutant loading is greater than the average pollutant loading for the land use identified in the TMDL;

Response:

See Section 5.0, Source Analysis.

After the implementation of pet waste control measures, the expected pollutant loading is no greater than the average pollutant loading for the land use (recreational) identified in the TMDL.

The non-tidal segment (VAT-G10R-02) of Powhatan Creek was determined to be meeting water quality standards during the 2008 Water Quality Assessment and was not listed as impaired. James City County performed additional monitoring upstream of the non-tidal DEQ station 2-POW006.77 which showed it was fully supporting water quality standards. The non-tidal segment of Powhatan Creek has since remained delisted in the 305(b)/303(d) Water Quality Assessment Integrated Report.

e. The BMPs designed to reduce the pollutants of concern in accordance with Parts II B 5, B 6, B 7, and B 8;

Response:

See Section 5.0, Source Analysis as follows from Part B 5. Parts B 6, B7, and B 8 do not apply.

f. Any calculations required in accordance with Part II B 5, B 6, B 7, or B 8.

Response:

No calculations are required for actions listed in Section 5.0.

g. For action plans developed in accordance with Part II B 5, B 6, and B 8, an outreach strategy to enhance the public's education (including employees) on methods to eliminate and reduce discharges of the pollutants; and

Response:

The City of Williamsburg provides public education concerning pet waste to the larger City of Williamsburg community including university students, faculty, and staff.

h. A schedule of anticipated actions planned for implementation during this permit term:

Response:

Continue to restrict access to the Dillard Complex Athletic Fields and monitor pet waste outside the fields.

5. *Bacterial TMDLs*

a. Traditional permittees shall select and implement at least three of the strategies listed in Table 5 designed to reduce the load of bacteria to the MS4. Selection of the strategies shall correspond to sources identified in Part II B 4 d.

Not applicable

The College of William & Mary is not a Traditional MS4 permittee.

b. Nontraditional permittees shall select at least one strategy listed in Table 5 designed to reduce the load of bacteria to the MS4 relevant to sources of bacteria applicable within the MS4 regulated service area. Selection of the strategies shall correspond to sources identified in Part II B 4 d.

Response:

The university is implementing the following measures in accordance with Table 5, of the MS4 permit under the category "Domestic pets (dogs and cats)":

Enforce the existing policy of no pets on the athletic fields.

Continue to protect the riparian buffer along the north side of the Dillard Complex by not mowing or removing vegetation.

6. *Local sediment, phosphorus, and nitrogen TMDLs.*

Response:

Not applicable—no local sediment, phosphorus, or nitrogen TMDLs have been approved for Powhatan Creek, Mill Creek, College Creek, or any other water body to which the College's MS4 regulated service area discharges.

7. *Polychlorinated biphenyl (PCB) TMDLs.*

Response:

Not applicable—no PCB TMDLs have been approved for Powhatan Creek, Mill Creek, College Creek, or any other water body to which the College's MS4 regulated service area discharges.

8. *Chloride TMDLs.*

Response:

Not applicable—no Chloride TMDLs have been approved for Powhatan Creek, Mill Creek, College Creek, or any other water body to which the College's MS4 regulated service area discharges.

9. *Prior to submittal of the action plan required in Part II B 2, the permittee shall provide an opportunity for public comment for no fewer than 15 days on the proposal to meet the local TMDL action plan requirements.*

Response:

This draft local TMDL action plan will be posted on the following website from April 5 -22, 2025, for public comments/concerns.

Stormwater Management | Facilities Management | William & Mary

10. *The MS4 program plan as required by Part I B of this permit shall incorporate each local TMDL action plan. Local TMDL action plans may be incorporated by reference into the MS4 program plan provided that the program plan includes the date of the most recent local TMDL action plan and identification of the location where a copy of the local TMDL action plan may be obtained.*

Response:

This local TMDL action plan has been incorporated by reference into the College's MS4 Program Plan. Likewise, the MS4 Program Plan can be accessed at the following link:

https://www.wm.edu/offices/facilities/departments/opmaint/stormwater/ms4-programplan-2023.pdf

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

Response:

Annual reports include a summary of actions taken to implement this local TMDL action plan. They can be accessed at the following location:

Stormwater Management | Facilities Management | William & Mary

3.0 INTRODUCTION

The College of William and Mary (CWM) was originally issued an MS4 permit in 2003 by the Commonwealth of Virginia. This permit outlines minimum requirements for the operation of the university's storm sewer system, including storm water treatment systems (BMPs) in a way that reduces the potential for stormwater pollution. The College's current permit number is VAR040039, and the permit cycle duration is from November 1, 2023, to October 31, 2028. The permit is reissued every five years.

The MS4 general permit also requires compliance for systems discharging to an impaired waterbody with approved Total Maximum Daily Loads (TMDLs) that assign individual or aggregate Waste Load Allocations (WLAs) to permit holders. This requires the permit holders to develop and maintain local TMDL Action Plans that address all applicable pollutants of concerns (POCs) for which the permittee has been assigned a WLA under an approved TMDL, through the construction of structural and non-structural stormwater BMPs, operational measures, other management strategies, or a combination of them that the permittee will implement to meet the TMDL WLA and achieve compliance with the Special Condition of the permit.

Currently, there are two TMDLs that directly impose requirements on the university; the Chesapeake Bay TMDLs and bacteria TMDLs for Mill Creek and Powhatan Creek. Bacteria TMDL for Mill Creek and Powhatan Creek was developed by DEQ and submitted to EPA in 2008 and was reviewed and approved by EPA on April 28, 2009.

Compliance with the Chesapeake Bay TMDL is documented by the College of William & Mary Stormwater Management Plans. The TMDL for Mill Creek and Powhatan Creek, "Bacteria Maximum Daily Load for Mill Creek and Powhatan Creek" is attached at Appendix 1. According to the TMDL, there are four MS4 permit holders that are permitted to discharge stormwater and bacteria (fecal coliform) in the Mill and Powhattan Creek watersheds. These permittees are James

City County, City of Williamsburg, Eastern State Hospital, and College of William and Mary. This TMDL assigns bacteria WLA to the City of Williamsburg and specifies that the load from the City of Williamsburg includes William & Mary, and Eastern State Hospital MS4 was aggregated with James City County. See table 1 for aggregate WLAs for the City of Williamsburg and the College of Willaim and Mary MS4s.

Table 1 - City of Williamsburg & College of William and Mary Waste Load Allocation

Waterbody	Segment	Impairment	WLA
Tidal Powhatan Creek	VAT-G10E-01	*Enterococci* Bacteria	0.2×10^{12} cfu/yr
Non-Tidal Powhatan Creek	VAT-G10R-02	*E. coli* Bacteria	0.4×10^{12} cfu/yr
Mill Creek	VAT-G10E-03	*Enterococci* Bacteria	0.3×10^{11} cfu/yr

DEQ has issued a guidance document (GM-16-2006) for compliance with local TMDLs. "*TMDL Action Planning for Local TMDL Loads*" was issued November 21, 2016. This document provides a summary of permit requirements with guidance on developing and implementing local TMDL Action Plans. This document is included at Appendix 2.

The current permit requires the university to update the previously approved local TMDL action plan to meet the conditions in the permit no later than 18 months after the permit effective date (November 1, 2023) and continue implementation of the action plan. William and Mary originally developed a TMDL Action Plan in June 2015 as part of the Phase 1 permit cycle, updated in 2020 as part of the Phase 2 permit cycle, and is currently being updated as part of the Phase 3 (current) permit cycle.

4.0 WATERSHED ANALYSIS

Powhatan Creek and the adjacent Mill Creek, both tributaries of the James River, are listed as impaired water bodies in the Virginia's 303(d) report. Mill Creek is currently listed as not supporting the Recreational Use of Virginia's 2022 305(b)/303(d) Water Quality Assessment Integrated Report due to water quality violations of the enterococci bacteria standards. Tidal segment of Powhatan Creek does not support the Recreational Use due to water quality violations of the enterococci bacteria standards and non-tidal segment of Powhatan Creek due to water quality violations of the E. coli bacteria standards. The approved TMDL addresses the watershed for both Mill Creek and Powhatan Creek.

The watersheds are within James City County with a small portion in the city of Williamsburg. A small northern portion of the watershed for Powhatan Creek is located within the College's property, although the majority of the watersheds and the impaired sections themselves lie within James City County. The Mill Creek watershed is not located in the university property. The College's campus is located outside of Mill Creek watershed. The TMDL watershed and its relation to the university is shown in Figure 1 below:

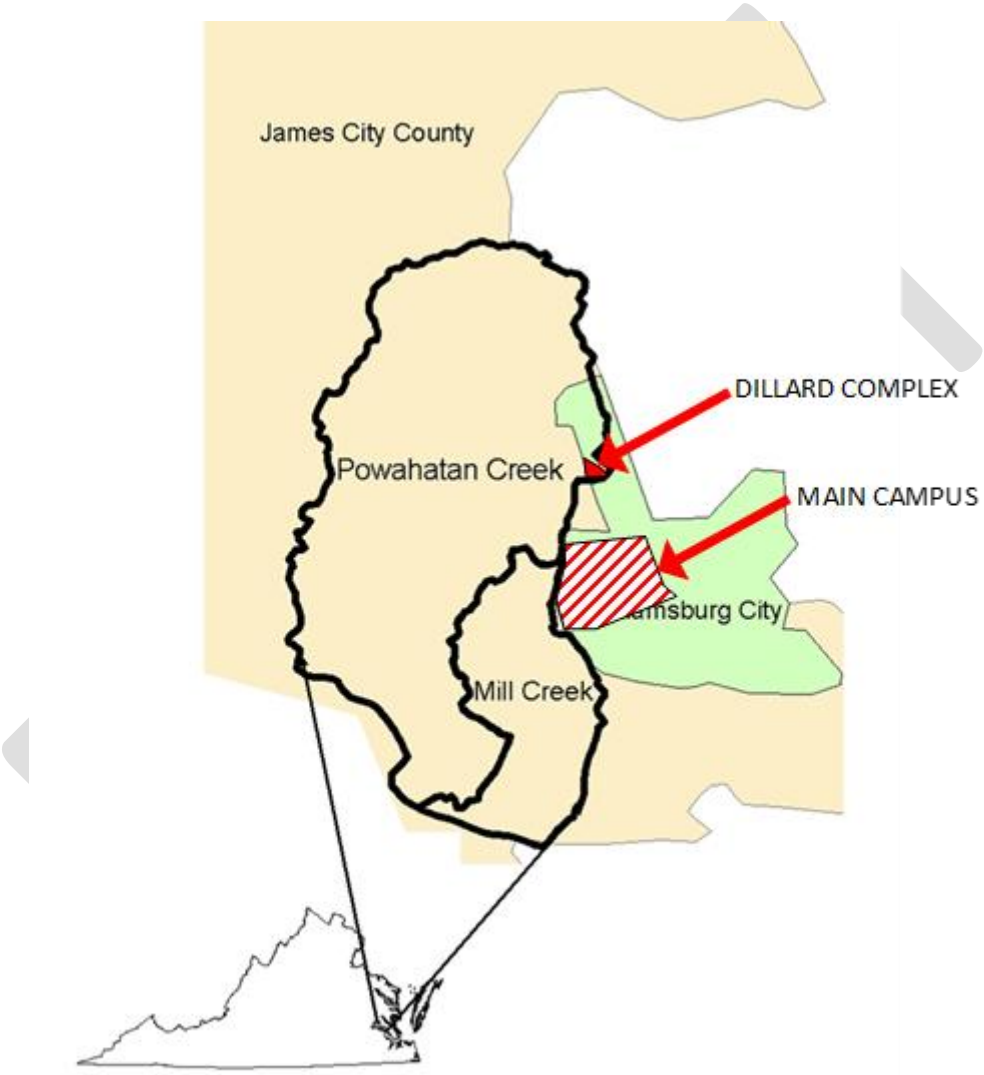

Figure 1 – Mill Creek and Powhatan Creek watershed location

A map of the university's property and MS4 service area within the TMDL watershed is attached at Appendix 3. The only area of university property located within the TMDL watershed is the

Dillard Complex which is approximately 33.1 acres of which 24.1 acres is in the university's MS4 service area. The Dillard Complex is located in the extreme upper reach of the non-tidal segment of Powhatan Creek watershed, sub-watershed number 13 of TMDL, and tributary Chisel Run (HUC JL31) to Powhatan Creek.

Per the TMDL, Powhatan Creek Watershed is 14,010 acres. The portion of the Dillard Complex that drains to Powhatan Creek is approximately 33.1 acres or 0.24% of the TMDL combined watershed. The College's MS4 represents only 0.17% (24.1 acres) of the total Powhatan Creek Watershed. The remaining 9 acres of Dillard Complex is unregulated area (not within MS4 area) that flows to the Powhatan Creek.

Drainage to Powhatan Creek is through a stream tributary to the north of the Dillard Complex which forms the northern property line. These tributary drains to Chisel Run. This stream tributary collects drainage from a portion of the Dillard Complex and a portion of Kiwanis Park, which is owned by the City of Williamsburg. Downstream of the Dillard Complex, the stream tributary crosses under Longhill Connector Road. The university has two storm sewer outfalls that define the MS4 service area and discharge to this stream tributary. The majority of the drainage area is conveyed by a 24" pipe which discharges to a channel connected to the stream tributary. The other discharge is through an infiltration type stormwater BMP (Library Storage BMP) which provides partial bacteria removal. Additional area drains by sheet flow and is not included in the MS4 service area.

The southern portion of the Dillard Complex discharges to a storm sewer in Ironbound Road which eventually discharges into Lake Matoaka and College Creek. College Creek is currently impaired according to Virginia's 2022 305(b)/303(d) Water Quality Assessment Integrated Report, however a TMDL has not been developed for it. Therefore, no local TMDL action plan is required for the College Creek.

5.0 SOURCE ANALYSIS

Bacterial Source Tracking (BST) was used in the TMDL study to determine the source of the impairments. These sources were categorized into four major categories: Human, Pets, Livestock, and Wildlife. All of the categories but Livestock could be found within the Dillard Complex area.

The TMDL included data from three sampling points (Section 2.6 and Figure 2.1 of TMDL study). Two sampling points are located at the extreme lower end of the Mill Creek and Powhatan Creek watersheds. The third point is located at approximately the mid-point of the Powhatan Creek watershed. None of these sampling points necessarily reflect conditions in the extreme upper reaches of the Powhatan Creek watershed where the Dillard Complex is located.

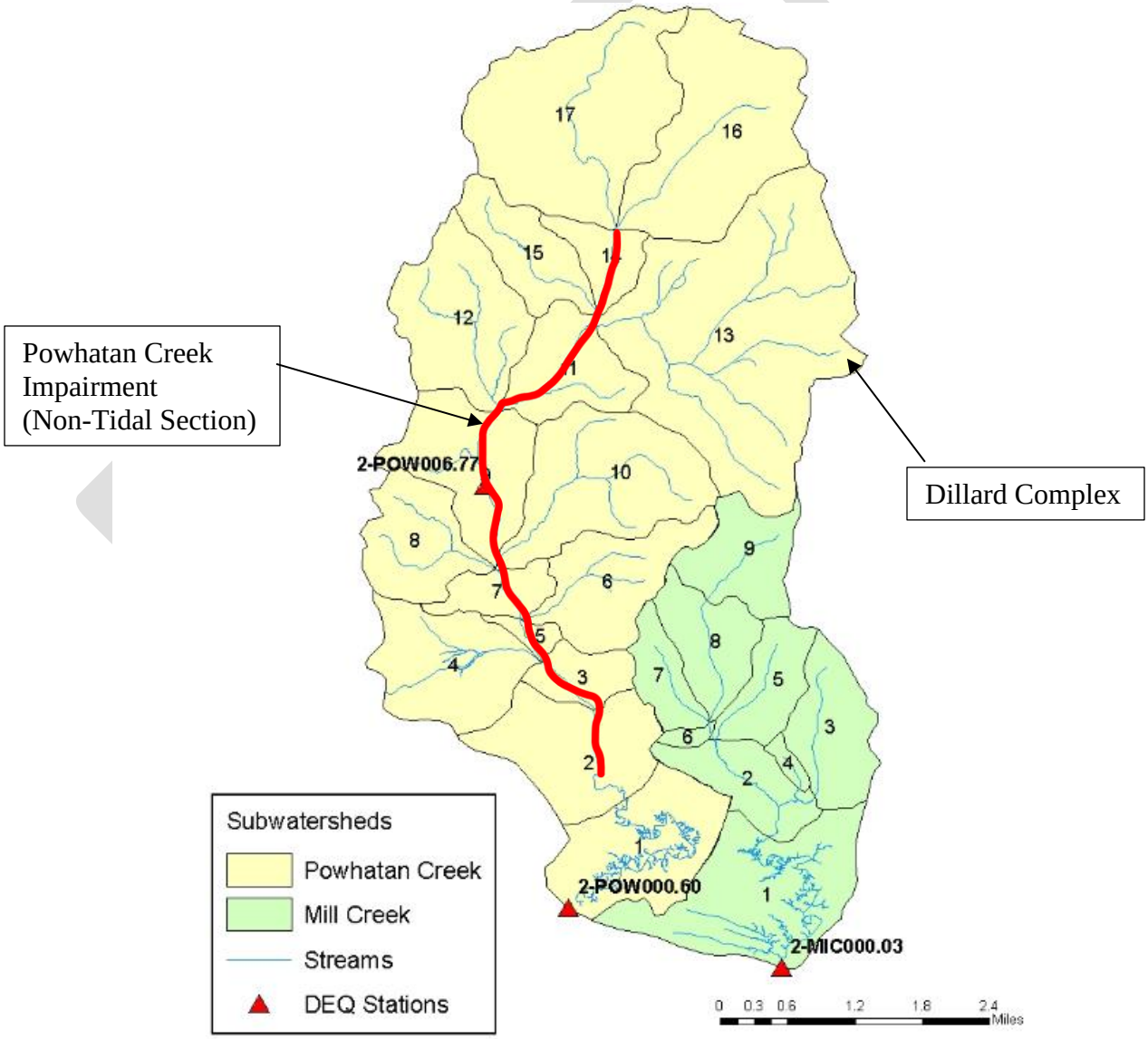

Figure 2.1. Sub-watersheds for Mill Creek and Powhatan Creek watersheds.

The TMDL (section 5.2.2) states that for the non-tidal section of Powhatan Creek, contributions from wildlife direct deposit and residential areas are the primary sources of bacteria (table 5.2). As indicated in Table 5.2 below, wildlife direct deposit and residential loadings are the largest contributors of bacteria in the non-tidal segment of Powhatan Creek.

Table 5.2. Relative contributions of different *E. coli* sources to the in-stream concentration for existing conditions in the non-tidal section of Powhatan Creek watershed.

Source	In-stream Mean Fecal Coliform Concentration (cfu/100 mL)	Percent of Total Loading (%)
Direct loading to streams		
Wildlife in stream	219	48
Loading to land surfaces		
Residential	224	49
Forest	16	3
Total	**459**	

The Dillard Complex includes the following:

- Two unoccupied dormitory buildings, Munford and Hughes Hall, were constructed in the 1940s as part of Eastern State Hospital. These buildings were demolished in 2021, and the areas were converted into open grass fields. This reduction in impervious surfaces, along with the removal of residential use, has contributed to a decrease in residential pollutant loading, which has been identified as one of the major sources of bacterial contamination in the non-tidal Powhatan Creek Watershed.

- Three former residences constructed in the 1940's as part of Eastern State Hospital. Two are unoccupied and one is partially occupied by an office that operates part time. These three buildings are planned to be demolished in the next 5-10 years.

- Martin Family Stadium, constructed in 2006, is the university's soccer venue with the capacity to seat approximately 1,000 spectators. The stadium is served by a sanitary pump station.

- Library Storage Building, constructed in the 1980's which is occupied by one full time employee. The sanitary flow from this building is collected by the pump station at the Martin Family Stadium.

- Dillard Storage Building (Scene Shop), constructed in 2019.
- A portion of the baseball field at the Plumari Baseball Stadium drains to this area, but sanitary sewers are not in the TMDL drainage area.
- Dillard soccer practice fields located adjacent to Ironbound Road.
- Roads and parking areas.

The following are possible bacteria sources and analyses of the potential for these sources at the portion of the Dillard Complex within the Powhatan Creek watershed:

5.1 Sewage

Leaky sewer lines, overflows at pump stations, sewage spills, failing septic systems, and illicit connections from sanitary sewers are potential sources of observed bacteria. There is no direct evidence that these conditions exist at the Dillard Complex.

The sanitary sewer system at the Dillard Complex is connected to the City of Williamsburg sanitary sewer in Ironbound Road. Building service lines for the original buildings are not in use, except for one former residence, which will be vacated in the next 12 months. All other building service lines are gasketed pipe with a lower potential for leaks. There are no on-site septic systems at the Dillard Complex facilities, nor at the entire campus facilities.

There is no sanitary sewer overflows recorded at the Dillard Complex. Minor backups may have occurred within buildings, but none have resulted in a discharge to the environment. There is a sanitary pump station at Martin Family Stadium which serves the stands at the stadium and the Library Storage Building. This pump station is approximately nine years old and is included in the university's maintenance and inspection program.

The university's sanitary sewer mapping is complete and there is no indication of either sanitary outfalls directly to the environment or sanitary connections to the storm sewer. Additionally, the outfall investigation and dry weather screening of storm sewer required by the university's MS4 permit has not shown any evidence of cross connection of sanitary pipes to the storm sewer.

5.2 Pet Waste

Improper disposal of pet waste can be a potential source of observed bacteria in the watershed. The Dillard Complex is occasionally used by the public to walk dogs.

The university has taken steps to restrict access to athletic fields in the Dillard Complex. The fields at the Plumeria Baseball Stadium, Martin Family Stadium, and soccer practice fields are fenced with controlled/limited access. Signage has been installed within the Dillard Complex to ask people to clean up pet waste.

5.3 Wildlife

The TMDL specifically cites wildlife as a potential source of observed bacteria in the watershed. The report also states that deer, raccoon, muskrat, beaver, wild turkey, goose, wood duck and seagull were found in the watershed.

Geese, muskrat, beaver, wood duck, and seagull are not present at the Dillard Complex due to the lack of ponds, lakes, and streams. The northern edge of the Dillard Complex is located within a forested area that is a potential habitat for a variety of other wildlife such as wild turkey, raccoon, and deer. This wooded area is an RPA stream buffer which is protected by Virginia regulations. Wildlife can be attracted to garbage disposal locations. The university collects waste in covered dumpsters to avoid attracting wildlife.

6.0 ACTION PLAN COMPONENTS

6.1 General

The following is a summary of the required local TMDL Action Plan components as provided in the latest DEQ guidance document (Guidance Memo No. GM-16-2006). Following each requirement is a summary of the means of compliance by the university.

The following language in *italic* typeface are the items listed in the guidance memo and followed by responses in **bold** typeface:

1. *The name(s) of the Final TMDL report(s)*

   Response:

   The TMDL document "Bacteria Maximum Daily Load for Mill Creek and Powhatan Creek" is attached at Appendix 1.

2. *The pollutant(s) causing the impairment(s)*

   Response:

   Bacteria (E. coli, and Enterococci) Due to Recreation Use Impairments

3. *The WLA(s) assigned to the MS4 as aggregate or individual WLAs*

   Response:

   The E. coli aggregate WLA in non-tidal Powhatan Creek is 0.4×10^{12} colony-forming units per year (CFU/yr). The university's WLA has been combined with that of the City of Williamsburg.

4. *Significant sources of POC(s) from facilities of concern owned or operated by the MS4 operator that are not covered under a separate VPDES permit. A significant source of pollutant(s) from a facility of concern means a discharge where the expected pollutant loading is greater than the average pollutant loading for the land use identified in the TMDL.*

- The land use identified in the TMDL study on Figure 2.5 (screenshot below) for the subject area is mostly low density residential with a few pockets of high density residential. Based on an analysis of the university property located within the TMDL watershed, there are no significant sources where the expected pollutant loading is greater than the average pollutant loading for the land use identified in the TMDL.

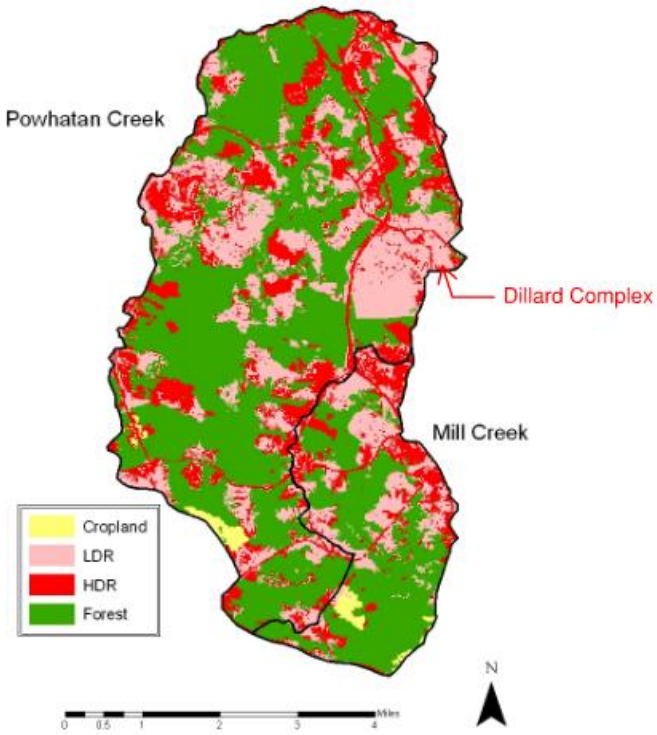

Figure 2.5. Land use in Mill Creek and Powhatan Creek watersheds.

5. Existing or new management practices, control techniques, and system design and engineering methods, that have been or will be implemented as part of the MS4 Program Plan that are applicable to reducing the pollutant identified in the WLA

- The university will continue existing maintenance and inspection programs for sanitary pump stations and sanitary sewers. The university will also continue to manage garbage collection to avoid attracting wildlife and efforts to prohibit dog walking at the Dillard Complex. The university collects waste in covered dumpsters to avoid attracting wildlife.

The university has conducted an analysis of pet waste at the Dillard Complex. Pet waste has been deposited when members of the public bring their dogs to the athletic fields to play. The university has implemented a program to fence off athletic fields to prevent public access. Fences have been installed around all athletic fields in the Dillard Complex, including Martin Family Stadium, Plumeri Baseball Park, and the soccer fields. Additionally, signage has been installed within the Dillard Complex to ask people to clean up after their dogs.

Additionally, dormitory buildings were demolished in 2021, reducing residential areas and impervious surfaces. As a result, pollutants of concern from impervious surfaces and human activity have decreased.

To date, there has been no evidence of pet waste in other areas on the Dillard Complex. The university will continue to monitor and take action, if required. Other measures have been evaluated but have been deemed as not effective in addressing this TMDL.

6. Legal authorities such as ordinances, state and other permits, orders, specific contract language, and interjurisdictional agreements applicable to reducing the POCs identified in each respective TMDL

- The university fully controls all the property it owns within the TMDL watershed. There is no need for any legal authorities. The university cooperates with the City of Williamsburg on a continuous basis for stormwater issues.

- Operations of this property are controlled by the university Athletics Department with assistance provided by university operations & Maintenance within the Facilities Management Department. The list of directives issued by the university affecting grounds maintenance at the Dillard Complex is maintained by the Associate Director of Grounds.

- The Dillard Complex is platted partially in James City County and partially in the City of Williamsburg. As such, the Dillard Complex is subject to stormwater ordinances issued by these two localities and the university can use these ordinances to assist in controlling actions by the general public that affect stormwater quality. The City of Williamsburg ordinance is contained in Section 7-14 of the Code of the City of Williamsburg. The James City County ordinance is contained in Section 18A-22 of the Code of James City County.

At this time, while neither locality has a specific "poop scoop" law, both James City County and the City of Williamsburg have regulations concerning the removal of pet waste. These regulations emphasize responsible pet ownership and the proper disposal of pet waste to protect public health and the environment.

- On January 13, 2016, the university held a coordination meeting with the City of Williamsburg to discuss MS4 coordination issues, including the Powhatan and Mill Creek TMDL. Efforts to coordinate public outreach will continue.

7. Enhancements to public education, outreach, and employee training programs to also promote methods to eliminate and reduce discharges of the POC(s) for which a WLA has been assigned

- The fence around all athletic fields is complete and the Athletics Department procedure is to lock the gates when not in use. Employees have been trained to lock the gates and any new employees are provided this training.

8. A schedule of interim milestones and implementation of the items in 5, 6, and 7

- Fencing of Soccer practice field: In December 2015, 1,734 linear feet of 6' high chain link fence was installed to prevent pet waste deposition on the field. Six signs stating "No Trespassing" will be installed at the gates and along the fence as part of this project.

- The manholes and ground area associated with approximately 400 feet of sanitary force main, 2400 feet of gravity drain sanitary, and a sanitary pump station are visually inspected weekly. Manhole lids are lifted to inspect for evidence of clogs or leakage. Proper operation of the pump station is verified. Any spills, indications of overflow or other problems identified during inspections are addressed promptly.

9. Methods to assess TMDL Action Plans for their effectiveness in reducing the pollutants identified in the WLAs

- The university will continue existing programs to limit bacteria sources and install signage as described in item 7.

- Regular visual inspections of the soccer field and other areas within the complex for excessive pet waste will be conducted and the findings evaluated. If excessive amounts are discovered, further action such as additional "No Trespassing" signs may be installed.

10. Measurable goals and the metrics that the permittee and Department will use to track those goals (and the milestones required by the permit). Evaluation metrics other than monitoring may be used to determine compliance with the TMDL(s).

The following items are provided as measurable goals of permit compliance:

- Fencing of Soccer practice field: In December 2015, 1,734 linear feet of 6' high chain link fence was installed to prevent pet waste deposition on the field. Six signs stating "No Trespassing" will be installed at the gates and along the fence as part of this project.

- Regular visual inspections of the soccer field and other areas within the complex for excessive pet waste will be conducted and the findings evaluated. If excessive amounts are discovered, further action such as additional "No Trespassing" signs may be installed.

- The manholes and ground area associated with approximately 400 feet of sanitary force main, 2400 feet of gravity drain sanitary, and a sanitary pump station are visually inspected weekly. Manhole lids are lifted to inspect for evidence of clogs or leakage. Proper operation of the pump station is verified. Any spills, indications of overflow or other problems identified during inspections are addressed promptly.