

HENRICO COUNTY
ESCHERICHIA COLI TMDL ACTION PLAN

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SECTION 1. OVERVIEW

Henrico County's Escherichia coli TMDL Action Plan addresses the wasteload allocations (WLAs) for Escherichia coli that are associated with approved TMDLs for applicable watersheds in the County (see Section 3). The Plan has been developed in accordance with the requirements of the County's MS4 Permit and applicable recommendations contained in the *Local TMDL MS4 Guidance* (Guidance), distributed by the Virginia Department of Environmental Quality in April 2015.

As stated in the Guidance,

This document is provided as guidance and, as such, sets forth standard operating procedures for the agency. However, it does not mandate any particular method nor does it prohibit any particular method for the analysis of data, establishment of a wasteload allocation, or establishment of a permit limit. If alternative proposals are made, such proposals should be reviewed and accepted or denied based on their technical adequacy and compliance with appropriate laws and regulations.

The Guidance also states

Beyond illicit discharges, existing programmatic practices, ordinances, and outreach currently in place under the MS4 program may be sufficient to address anthropogenic sources of bacteria. For these TMDLs, permittees are encouraged to consider practices such as public outreach and education to influence behaviors. This may include signage and supplies to encourage the collection and removal of pet waste at areas of high concentration, such as dog parks; residential outreach through fliers or pamphlets included with utility bills; and other education programs.

As such, the Plan reflects the requirements of the County's MS4 Permit and any recommendations described in the Guidance that are appropriate.

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SECTION 2. MS4 PERMIT LANGUAGE

PART I.D. TMDL ACTION PLAN AND IMPLEMENTATION

2. TMDL Action Plans other than the Chesapeake Bay TMDL

a) TMDL Action Plan Development

The permittee shall maintain an updated MS4 Program Plan that includes TMDL Action Plans for pollutants in which wasteloads have been allocated to the MS4 in approved TMDLs. Approved TMDLs as of the effective date of this state permit are included in Attachment A of this state permit. TMDL Action Plans may be implemented in multiple phases over more than one permit cycle using the adaptive iterative approach provided adequate progress is made to reduce pollutant discharges in a manner that is consistent with the assumptions and requirements of the applicable TMDL. Progress shall be demonstrated by representative and adequate monitoring or other methods (e.g. modeling) as described in Part I.D.2.b)5) below. These TMDL Actions Plans shall identify the best management practices and other interim milestone activities to be implemented during the remaining term of this state permit. The plan shall include an estimated end date for achieving the applicable wasteload allocations and, for planning purposes, a projection of BMPs and other implementation steps expected to address the WLA, outside of the permit term, as applicable.

- 1) No later than 24 months after the effective date of this state permit, the permittee shall submit to the Department TMDL Action Plans to address any new or modified requirements established under this Special Condition for pollutants identified in TMDL wasteload allocations approved prior to the effective date of this state permit.
- 2) The TMDL Action Plans shall become effective and enforceable upon written notification from the Department.
- 3) The TMDL Action Plans shall be incorporated by reference into this state permit.

b) TMDL Action Plan content

The permittee shall:

- 1) Develop and maintain a list of its legal authorities such as ordinances, permits, order, specific contract language, and inter-jurisdictional agreements applicable to reducing the pollutant identified in a WLA;
- 2) Identify and maintain an updated list of all additional management practices, control techniques and system design and engineering methods, beyond those identified in Part I.B of this state permit, that have been implemented as

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- part of the MS4 Program Plan that are applicable to reducing the pollutant identified in the WLA;
- 3) Enhance the public education and outreach and employee training programs to also promote methods to eliminate and reduce discharges of the pollutants identified in the WLA;
 - 4) Assess all significant sources of pollutant(s) from facilities of concern owned or operated by the MS4 operator that are not covered under a separate VPDES industrial stormwater permit and identify all municipal facilities that may be a significant source of the identified pollutant. For the purpose of this assessment, 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. (For example, a significant source of pollutant from a facility of concern for a bacterial TMDL would be expected to be greater at a dog park than at other recreational facilities where dogs are prohibited);
 - 5) Develop and implement a method to assess TMDL Action Plans for their effectiveness in reducing the pollutants identified in the WLAs. The evaluation shall use any newly available information, representative and adequate water quality monitoring results, or modeling tools to estimate pollutant reductions for the pollutant(s) of concern from implementation of the MS4 Program Plan. Monitoring may include BMP, outfall, or instream monitoring, as appropriate, to estimate pollutant reductions. The permittee may conduct monitoring, utilize existing data, establish partnerships, or collaborate with other MS4 permittees or other third parties, as appropriate. This evaluation shall include assessment of the facilities identified in Part I.D.2.b)4) above. The methodology used for assessment shall be described in the TMDL Action Plan.
 - 6) Solicit public input on the draft TMDL Action Plan and consider public comments in development of the final TMDL Action Plan that is submitted to the Department for review and approval.
- c) This state permit shall be modified or alternatively revoked and reissued if any approved wasteload allocation procedure, pursuant to Section 303(d) of the Clean Water Act, imposes wasteload allocations, limits or conditions on the treatment works that are not consistent with the permit requirements.
 - d) Analytical methods for any monitoring shall be conducted according to procedures approved under 40 CFR Part 136 or alternative methods approved by the Environmental Protection Agency (EPA). Where an approved 40 CFR Part 136 method does not exist, the permittee shall use a method consistent with the TMDL.

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- e) The permittee is encouraged to participate as a stakeholder in the development of any TMDL implementation plans applicable to their discharge. The permittee may incorporate applicable best management practices identified in the TMDL implementation plan in the MS4 Program Plan.
- f) Annual Reporting Requirements.
 - 1) The permittee shall submit the required TMDL Action Plans to the Department for review and acceptance with the annual report due March 31, 2017.
 - 2) Beginning with the annual report due March 31, 2018, the permittee shall report on the implementation of the TMDL Action Plans and associated evaluation including the results of any monitoring conducted as part of the evaluation.
- g) The permittee shall identify the best management practices and other steps that will be implemented during the next permit term as part of the permittee's reapplication for coverage as required under Part II.M. The permittee shall also evaluate and modify the estimated end date for achieving the applicable wasteload based on information acquired during the permit cycle.

SECTION 3. APPLICABLE ESCHERICHIA COLI WASTELOAD ALLOCATIONS

Wasteload Allocation (cfu / year)	Watershed(s)	TMDL Report	EPA Approval Date	SWCB Approval Date
1.04E+11	Chickahominy River and Tributaries	E. coli TMDL Development for Chickahominy River and Tributaries, VA (A Nested TMDL Approach)	9/19/2012	3/25/2013
3.99E+10	Bailey Creek portion of Fourmile Creek Watershed	Bacteria TMDL for Fourmile Creek, Henrico County, Virginia	9/20/2004	7/31/2008
1.05E+13	Tuckahoe Creek and Tributaries	Bacteria TMDL for Tuckahoe Creek, Little Tuckahoe Creek, Anderson, Broad, Georges and Readers Branches, and Deep Run, Henrico, Goochland and Hanover Counties, Virginia	9/20/2004	7/31/2008
1.58E+12	White Oak Swamp	Bacteria TMDL for White Oak Swamp, Henrico County, Virginia	9/20/2004	7/31/2008
1.18E+12	Almond Creek	Bacterial Total Maximum Daily Load Development for the James River and Tributaries - City of Richmond	11/4/2010	6/29/2012
5.78E+11	Gillies Creek			
3.50E+13	James River (lower) Impaired			

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1.36E+12	James River (tidal)			
5.69E+12	James River (upper) delisted			
4.74E+13	James River (lower) delisted			

From **Attachment A: Applicable TMDL Wasteload Allocations** in the County's MS4 Permit

SECTION 4. ESCHERICHIA COLI TMDL PLANNING

Henrico County's Escherichia coli TMDL Action Plan addresses the following:

SECTION 4.1 LEGAL AUTHORITY

Develop and maintain a list of its legal authorities such as ordinances, permits, order, specific contract language, and inter-jurisdictional agreements applicable to reducing the pollutant identified in a WLA.

Henrico has reviewed its current MS4 Program Plan and has determined that the legal authorities as stated in the current MS4 Program Plan are sufficient for compliance with this special condition. Please refer to Part I.A.3 of the MS4 Program Plan for a listing of the legal authorities.

SECTION 4.2 MANAGEMENT PRACTICES, CONTROL TECHNIQUES, AND METHODS

Identify and maintain an updated list of all additional management practices, control techniques and system design and engineering methods, beyond those identified in Part I.B of this state permit, that have been implemented as part of the MS4 Program Plan that are applicable to reducing the pollutant identified in the WLA.

The additional management practices, control techniques and system design and engineering methods, beyond those identified in Part I.B of this state permit, that have been implemented as part of the MS4 Program Plan that are applicable to reducing the pollutant identified in the WLA are listed in the following sections of this TMDL Action Plan.

The County's illicit discharge detection and elimination program is described in Part I.B.2.e of the MS4 Program Plan and annual implementation details are provided in the Part I.B.2.e Annual Report Supplement.

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SECTION 4.3 PUBLIC EDUCATION, PUBLIC OUTREACH, AND EMPLOYEE TRAINING

Enhance the public education and outreach and employee training programs to also promote methods to eliminate and reduce discharges of the pollutants identified in the WLA.

Henrico County conducts various public education and outreach and employee training programs that promote elimination and/or reduction of Escherichia coli. These efforts include programs such as:

Septic Pumpout Program

As part of the Chesapeake Bay Program, Henrico County is required to implement a program that ensures septic systems within CBPAs are pumped out at least once every 5 years. The Department of Public Works administers this program.

Sewer Connection

Generally, all proposed residential structures must be connected to public sewer if public sewer is within 300 feet of the development and unless otherwise approved by the Planning Commission, all other development must provide public sewer connections, including any necessary extensions.

Septic System Installation, Repair, and Replacement

The Environmental Health section of the Henrico County Health Department currently coordinates the septic system program in the County. Responses to a septic system malfunction include:

- a. A property owner with a malfunctioning septic system with the potential for health and environmental contamination is required to apply for an application to contract repairs through the Health Department. Citizen complaints are investigated by the Health Department who then advises property owners of actions which need to be taken:
 - i. The applicant may be required to pump the system if it is imposing an immediate threat; or
 - ii. The applicant may be required to hook up to the sanitary sewer system, or,

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- iii. The applicant may be required to repair the septic system through contracting with a private company after obtaining a permit from the County Health Department.
- b. In situations where a property owner refuses to warrant the request for action for repair, the Health Department may initiate legal proceedings that may lead to requiring the property owner to vacate until requested repairs have been completed.

All proposed development that relies on septic systems must also provide reserve drain fields. The Health Department strongly recommends that septic systems (existing and proposed) be pumped out every five years. A brochure is available to residents that educate them on how to maintain a septic system (see attachments).

Pet Waste Pick-Up Program

The pet waste pick-up program includes distributing pet bag dispensers and installation of pet waste stations installed on certain Henrico County properties.

Fats, Oil, and Grease (FOG) Program

The Department of Building Construction and Inspections performs routine maintenance inspections of food preparation businesses to minimize FOG discharges into building and sanitary sewers overflows as a result of FOG buildup. A FOG brochure for businesses is distributed in response to complaints. The Department of Public Utilities assesses a strong waste surcharge on the monthly water and sewer utility bills of food preparation businesses that discharge FOG into the sanitary sewer system. DPU annually distributes educational information on FOG in their “The Water Source” newsletter.

Residential Education Program

The residential education program includes items such as FOG Information in DPU’s “The Water Source”, mailings concerning the Septic Pumpout Program, the Curb Your Dog Brochure – Pet Waste Disposal Education, the Pick up the Poop Pet Waste Game administered by Henricopolis SWCD, and the KHB Round Up video. Signage concerning proper pet waste disposal are also placed at various public properties throughout the County.

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SECTION 4.4 ASSESS SIGNIFICANT SOURCES OF POLLUTANTS

Assess all significant sources of pollutant(s) from facilities of concern owned or operated by the MS4 operator that are not covered under a separate VPDES industrial stormwater permit and identify all municipal facilities that may be a significant source of the identified pollutant. For the purpose of this assessment, 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. (For example, a significant source of pollutant from a facility of concern for a bacterial TMDL would be expected to be greater at a dog park than at other recreational facilities where dogs are prohibited)

All Henrico County properties were assessed in the MS4 Municipal Management Area (MMA) System described in Part I.B.2.i of the MS4 Program Plan. These assessments did not reveal any significant sources of E. coli from facilities of concern owned or operated by the County of Henrico that are not covered under a separate VPDES permit.

SECTION 4.5 MEANS AND METHODS TO ASSESS TMDL ACTION PLAN

Develop and implement a method to assess TMDL Action Plans for their effectiveness in reducing the pollutants identified in the WLAs. The evaluation shall use any newly available information, representative and adequate water quality monitoring results, or modeling tools to estimate pollutant reductions for the pollutant(s) of concern from implementation of the MS4 Program Plan. Monitoring may include BMP, outfall, or in-stream monitoring, as appropriate, to estimate pollutant reductions. The permittee may conduct monitoring, utilize existing data, establish partnerships, or collaborate with other MS4 permittees or other third parties, as appropriate. This evaluation shall include assessment of the facilities identified in Part I.D.2.b)4) above. The methodology used for assessment shall be described in the TMDL Action Plan.

An evaluation of the activities conducted during the permit year will be included in the annual report and will consider the estimated number of individuals reached through the activities and other implementation details. The results of the In Stream Monitoring program required by Part I.C.2 of the MS4 Permit will be considered in developing the evaluations.

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SECTION 4.6 SOLICIT PUBLIC COMMENTS

Solicit public input on the draft TMDL Action Plan and consider public comments in development of the final TMDL Action Plan that is submitted to the Department for review and approval.

A draft of this TMDL Action Plan was posted on the County's website for two weeks and an opportunity for public comment was provided.

No comments were received.

SECTION 4.7 ANNUAL REPORTING REQUIREMENTS

Annual Reporting Requirements

- 1) The permittee shall submit the required TMDL Action Plans to the Department for review and acceptance with the annual report due March 31, 2017.**

Noted.

- 2) Beginning with the annual report due on March 31, 2018, the permittee shall report on the implementation of the TMDL Action Plans and associated evaluation including the results of any monitoring conducted as part of the evaluation.**

In addition to the individual program evaluations mentioned in Section 4.5, implementation details will be included in the MS4 Annual Reports beginning with the annual report due March 31, 2018. The details will be provided in the following format.

BMPs and/or Programs Implemented during the MS4 Permit Year	Implementation Details (number, location, etc.)

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SECTION 4.8 PLANS FOR THE NEXT PERMIT CYCLE

The permittee shall identify the best management practices and other steps that will be implemented during the next permit term as part of the permittee's reapplication for coverage as required under Part II.M. The permittee shall also evaluate and modify the estimated end date for achieving the applicable wasteload based on information acquired during the permit cycle.

Noted.