City of Manassas Park Action Plan for Bull Run Watershed Bacteria TMDL

Permit Number
VAR040070

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Prepared by:
Bowman CONSULTING

INTRODUCTION

This document addresses the Special Condition for approved local Total Maximum Daily Loads (TMDLs) other than the Chesapeake Bay TMDL (Section I B) of the General Virginia Pollution Discharge Elimination System (VPDES) Permit for Discharges of Stormwater From Small Municipal Storm Sewer Systems (MS4), henceforth referred to as "General Permit". The City of Manassas Park is authorized to discharge stormwater under the General Permit. In order to maintain permit compliance and meet water quality standards, the City of Manassas Park is required to meet a certain reduction of pollutant of concern identified in approved TMDL waste load allocations (WLA). A WLA determines the reduction percentage in order to meet the water quality standards set in place for a specific waterway. The City of Manassas Park is required to develop specific TMDL Action Plans where the MS4 has been allocated a wasteload in an approved TMDL.

The submitted Action Plan becomes effective and enforceable 90 days after the date received by the Virginia Department of Environmental Quality (DEQ) unless specifically denied in writing by DEQ in accordance with Section I B.1.c of the General Permit.

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BACTERIA IMPAIRMENT OF BULL RUN

This document serves as a specific Total Maximum Daily Load (TMDL) Action Plan to identify the best management practices (BMPs) and other interim operations to be implemented to address the bacteria waste load allocation (WLA) assigned to the regulated MS4 area of City of Manassas Park in "Bacteria TMDLs for Popes Head Creek, Broad Run, Kettle Run, South Run, Little Bull Run, Bull Run and the Occoquan River, Virginia," dated August 2006. The water quality standard is expressed in the Bacteria TMDL in terms of E. Coli.

The Bacteria TMDL was developed for the Potomac River Basin, which includes the Bull Run watershed. The impaired segment of Bull Run begins at the confluence of Cub Run to Bull Run to its confluence with Popes Head Creek. The locations of bacteria impaired segments within the associated watersheds are shown in Figure 1 below. The City of Manassas Park accounts for less than 1% of the drainage basin. Table 1 shows the WLA associated with the bacteria TMDL for the City of Manassas Park and internal VDOT urban areas. The existing E. Coli loading to Bull Run from City of Manassas Park's MS4 area was calculated to be 3.16E+10 cfu/year and the allocated loading was set at 3.55E+09 cfu/year. The difference between the existing load and the allocated load is the target reduction which equates to 2.805E+10 cfu/year.

Table 1: Bacteria (E. coli) Wasteload Allocation

Table 5-27: Bull Run (Segment VAN-A23R-01) MS4s Waste load Allocation for *E. coli*					
Permit Number	**MS4 Permit Holder**	**MS4 Location**	**Existing Load (cfu/yr)**	**Allocated Load (cfu/yr)**	**Reduction (%)**
VA0088587	Fairfax County	Fairfax County	6.81E+11	7.61E+10	89%
VAR040104	Fairfax County Public Schools				
VAR044062	VDOT Urban Area				
VAR040067	Loudon County	Loudon County	1.18E+11	1.32E+10	89%
VAR040062	VDOT Urban Area				
VAR040063	City of Manassas	City of Manassas	6.09E+10	6.82E+09	89%
VAR040095	Nova Manassas Campus				
VAR040062	VDOT Urban Area				
VAR040070	City of Manassas Park	City of Manassas Park	3.16E+10	3.55E+09	89%
VAR040062	VDOT Urban Area				
VA0088595	Prince William County	Prince William County	1.43E+11	1.60E+10	89%
VAR040100	Prince William County Schools				
VAR040062	VDOT Urban Area				
Total			**1.03E+12**	**1.16E+11**	89%

Source: "Bacteria TMDLs for Popes Head Creek, Broad Run, Kettle Run, South Run, Little Bull Run, Bull Run and the Occoquan River, Virginia," August 2006

Figure 1: Bacteria Impaired Segments and Delineated Watershed

Source: "Bacteria TMDLs for Popes Head Creek, Broad Run, Kettle Run, South Run, Little Bull Run, Bull Run and the Occoquan River, Virginia," August 2006

1. LEGAL AUTHORITY

Pursuant to General Permit Section I B.2.a, develop and maintain a list of legal authorities such as ordinances, state and other permits, orders, specific contract language, and interjurisdictional agreements applicable to reducing the pollutant identified in each applicable WLA.

City of Manassas Park currently operates under the Virginia MS4 General Permit (#VAR040070) to address stormwater discharges from its regulated area. Below is a list of the City's relevant legal authorities.

- City of Manassas Park MS4 Program Plan
- Chapter 8 of the City Code – Erosion and Sediment Control; Stormwater Management and Control
- Chapter 13 of the City Code – Garbage and Trash
- Chapter 25 of the City Code – Water, Sewers, and Sewage Disposal
- City of Manassas Park Public Facilities Manual

2. ADDITIONAL WASTE LOAD ALLOCATION (WLA) REDUCTION PRACTICES

General Permit Section I B.2.b: Identify and maintain an updated list of all additional management practices, control techniques and system design and engineering methods, beyond those identified in Section II B, that have been implemented as part of the MS4 Program Plan that are applicable to reducing the pollutant identified in the WLA.

The City has existing legal authorities and education programs in place to improve the water quality of the nearby waterbodies. Outlined in this document are the City's additional practices as they relate to reducing the E. Coli load. Means and methods being implemented are as follows:

- Pet Waste Control
  Proper pet waste disposal and its impacts are emphasized in the City's Public Education and Outreach Program. The City is looking into setting a policy for proper pet waste disposal.
- Street Sweeping
  The City maintains and operates 52.88 lane-miles and will be conducting street sweeping annually.
- Outfall Inspections
  The City will do an outfall reconnaissance each year. This reconnaissance includes visual inspection with a corresponding photo and report.

3. ENHANCED EDUCATION AND OUTREACH

General Permit Section I B.2.c: Enhance public education and outreach and employee training programs to also promote methods to eliminate and reduce discharges of the pollutants identified in the WLA.

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The City of Manassas Park has approximately 302 registered dog owners, and intends to focus on this target audience as part of the City's Public Education and Outreach Program. The City of Manassas Park is developing a program to send knowledgeable staff members to City events to hand out brochures and discuss the impacts pet waste has a source of bacteria.

The City will enhance employee training by adding information about the Bacteria TMDL to the biennial employee illicit discharge detection and elimination (IDDE) training for employees. This is an in-person, group training session.

4. POLLUTANT OF CONCERN SOURCE ASSESSMENT

General Permit Section I B.2.d: 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 permit and identify all municipal facilities that may be a significant source of the identified pollutant.

The TMDL considered four categories of fecal bacteria sources: wildlife, human, livestock, and pet. These four categories were explored within the City of Manassas Park. Any potential significant sources of E. Coli within the City of Manassas Park are listed below:

- Pet Waste
  Manassas Park Dog Park – Located at Costello Park
- Livestock
  There is no livestock in the City of Manassas Park
- Human
  - Sanitary Sewer overflows
  - Septic System Failures
  - There is a relatively low homeless population in City of Manassas Park, and therefore it is unlikely that this is a major contributor to E. Coli levels.
- Wildlife
  There are no known programs or strategies through DEQ or EPA to eliminate E. coli from wildlife sources.

5. LOCAL TMDL ACTION PLAN EFFECTIVENESS ASSESSMENT METHODOLOGY

General Permit Section I B.2.e: 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 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 operator may conduct monitoring, utilize existing data, establish partnerships, or collaborate with other MS4 operators or third parties, as appropriate. This evaluation shall include assessment of the identified in subdivision 2 d of this subsection. The methodology used for assessment shall be described in the TMDL Action Plan.

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- The City will track the number of brochures distributed at each event as a method to determine effectiveness of public outreach efforts. The brochures will be counted before and after each event, and the number of brochures distributed will be recorded.
- Analyze in-stream water quality monitoring data for E. Coli. In-stream samples are to be collected and recorded on a quarterly basis. The following outlines the procedure at which these samples will be taken and analyzed:
  1. Test the water in the Bull Run watershed at the locations specified on the map in Appendix A.
  2. Tests are recommended to be completed quarterly**.** All locations should be tested on the same day.
  3. Record the data from each test. Observe trends and note any discernable variations in the presence of E. Coli.
  4. If any of the samples in a given year exceed 1173 CFU/100 ml of E. Coli (See 9VAC25-260-170) at a particular testing location, repeat the test at the upstream MS4 outfall to determine the location of discharge. Gradually move upstream until the POC source is located.
  5. Once a source is identified, prepare a Plan of Action to resolve and remediate the problem.

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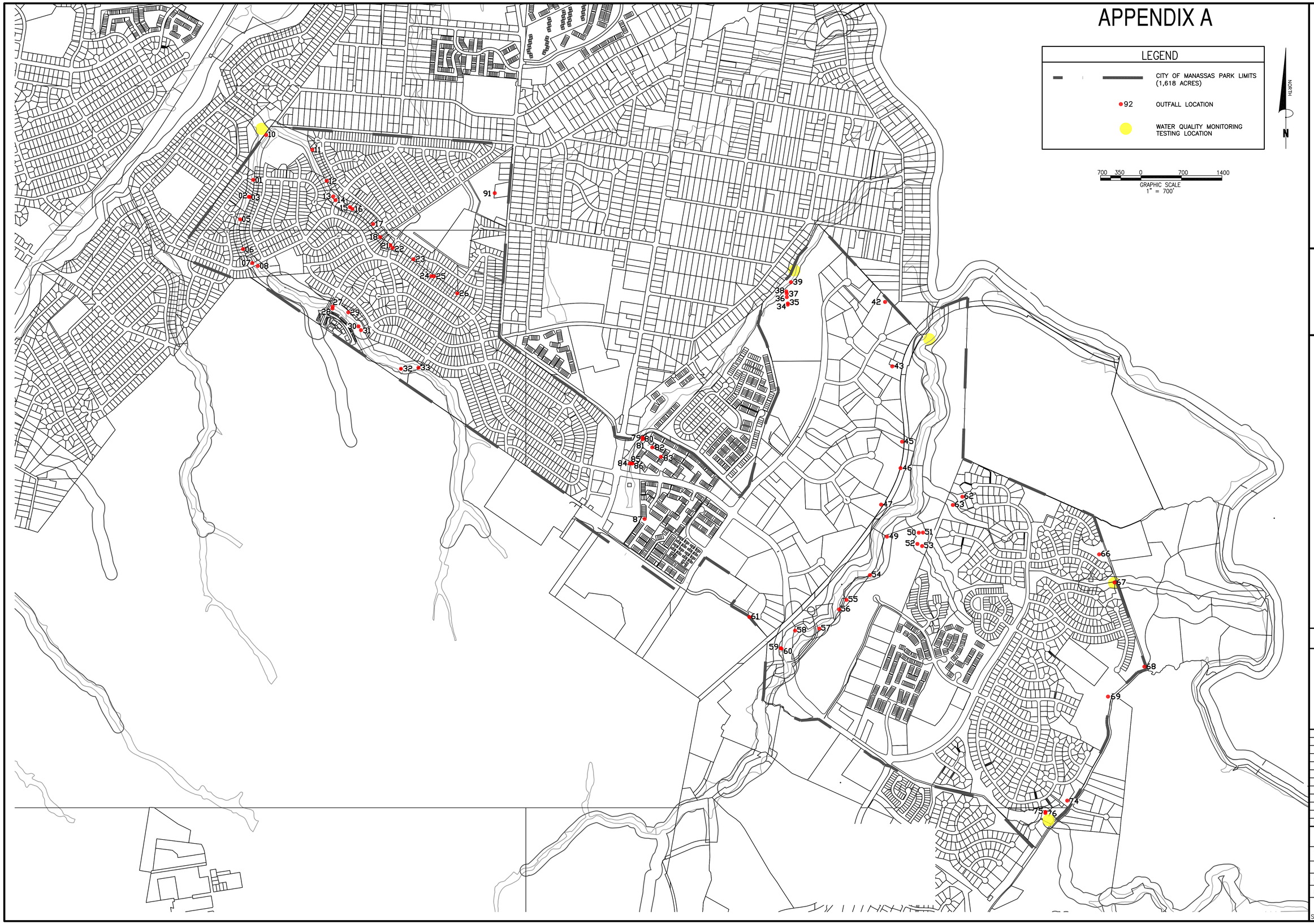
APPENDIX A



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APPENDIX A
IN-STREAM WATER QUALITY MONITORING
CITY OF MANASSAS PARK
VIRGINIA

PROJECT NUMBER

PLAN STATUS

DATE	DESCRIPTION

SH	MD	BG
DESIGN	DRAWN	CHKD

SCALE H: 1" = 700' V: N/A

JOB No. 8291-01-016

DATE : JUNE 2016

FILE No. 8291-01-016

SHEET 1 OF 1