



The City of Manassas

Municipal Separate Storm Sewer System (MS4) 2020 Permit Program Plan

Permit #VAR040063
(Effective date of the permit November 6, 2018)

The City of Manassas Department of Utilities
8500 Public Works Drive
Manassas, Virginia 20110

Signed March 23, 2020

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Introduction

The City of Manassas MS4 Program Plan describes all programs and actions taken by the City to ensure compliance with Virginia Stormwater Management Program (VSMP) MS4 Permit # VAR040063. The City of Manassas was issued its latest permit on November 6, 2018 by the Environmental Protection Agency (EPA) and Virginia Department of Environmental Quality (DEQ). This plan is a single document outlining policies, ordinances, strategies, checklists, and other documents detailing the various programs the City establishes to meet permit requirements and is considered an enforceable document under the state permit. This program has been designed to reduce the discharge of pollutants to the “maximum extent practicable”.

Small MS4 Operator

Name: City of Manassas; Type: Municipality Location: City of Manassas, Virginia

Legal Authority

The City of Manassas will maintain and utilize its legal authority authorized by the Commonwealth of Virginia to control discharges to and from the MS4 in the manner established by the specific requirements of this state permit. The legal authority shall enable the permittee to control the contribution of pollutants to its MS4; prohibit illicit discharges; control the discharge of spills and the dumping or disposal of materials other than stormwater; require compliance with conditions in ordinances, permits, and contracts; and carry out all inspections necessary to determine compliance and noncompliance with permit conditions.

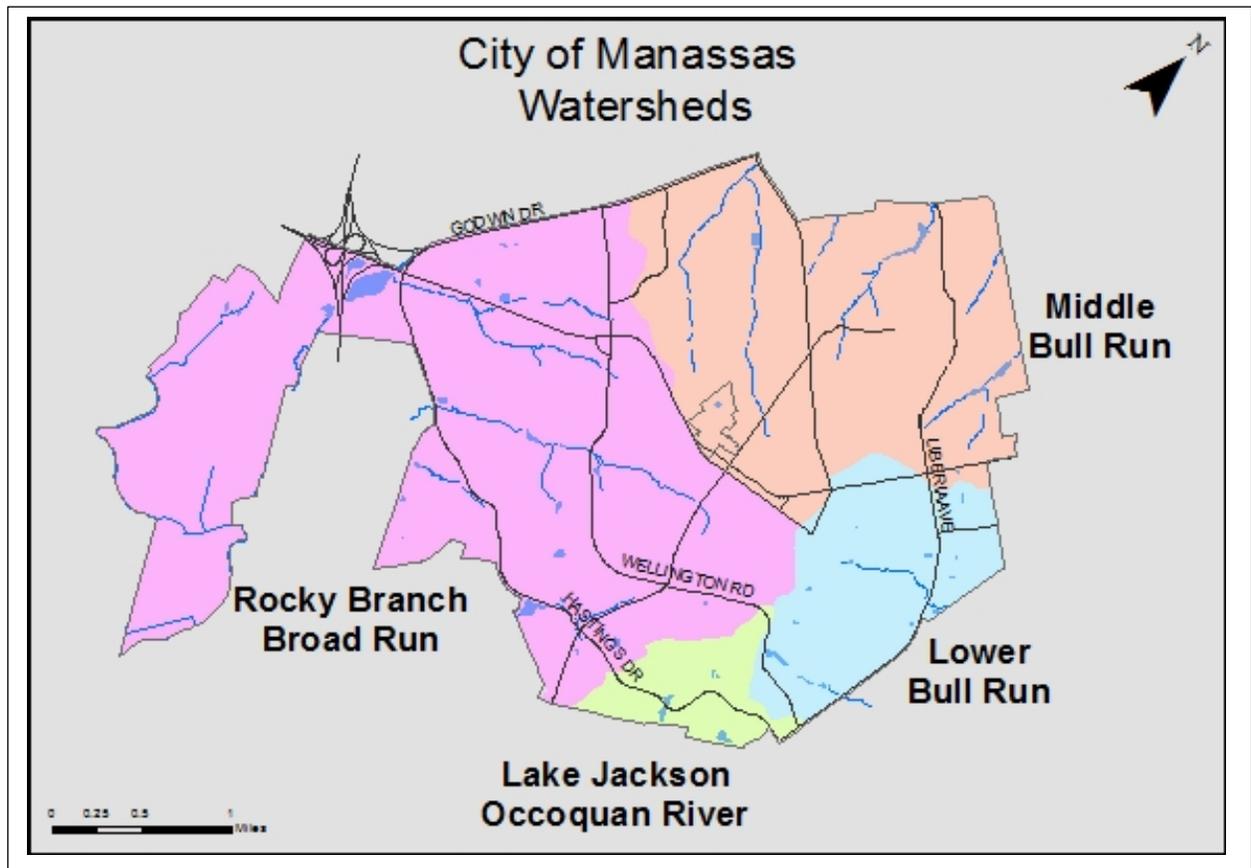
Description of the Watersheds

The City of Manassas (City) consists of approximately ten (10) square miles draining to the Occoquan River. It is composed of primarily urban mixed-use land development and surrounded by Prince William County. The City lies along the crest of several hydrological divides, there are no “upstream” neighbors, only downstream ones.

Hydrologic Unit Codes

We have MS4 infrastructure lying in four hydrologic units. These units are as follows:

- Lake Jackson-Occoquan River
- Lower Bull Run
- Middle Bull Run
- Rocky Branch-Broad Run



Operators under the 2018 General Permit

N/A

Roles and Responsibilities (listed alphabetically)

Development Services

The Department of Community Development oversees different branches, including Development Services. Development Services has the responsibilities to administer construction plan review and permitting processes.

Department of Engineering

While the program elements of the pre and post-construction stormwater programs are managed by the Department of Community Development, through its Development Services staff, the Engineering Department provides technical and professional services, including inspections (both erosion and sediment control, as well as post-construction stormwater management), design, and plan review.

Department of Fire Marshal

The Department of the Fire Marshal is responsible for emergency response and coordination of large and hazardous spills, and enforcement, if such is required. Therefore, they have a role to play in the MS4 program, especially related to illicit discharge, detection, and elimination, and the implementation of best management practices in and near the various fire stations.

Parks, Culture, and Recreation

The Department of Parks, Culture, and Recreation manages various park and recreations facilities throughout the City. This includes everything from fertilized playfields, chlorinated swimming pools, to parks containing high visitor and pet-use.

Department of Public Works

The Department of Public Works is responsible for the overall operation and maintenance of the City's stormwater system. They perform routine maintenance and inspections of all City owned ponds to ensure proper performance. They provide year round inspections and maintenance to all stormwater inlets and underground pipe systems. Public Works is the initial contact for all stormwater related issues and is the first response to any illicit discharges or hazardous spills.

The Department of Public Works also manages the Refuse and Recycling programs. Refuse and Recycling works to reduce the volume of street litter and hazardous household materials left at curbside through contracted curbside solid waste collection and through the Keep Manassas Beautiful litter prevention program, and regularly scheduled household hazardous waste and electronics drop off days.

Manassas City Public Schools

The Department of Schools manages various school facilities throughout the City. As such, they manage and maintain a series of elementary, middle-school, and high-school sites and building complexes, including large buildings, storage areas, parking lots, bus parking, fertilized turf, chemical storage, ballfields, and the educational lives of thousands of children.

Department of Utilities

The Utilities Department oversees administration of the City MS4 program, coordinates program implementation, and prepares annual reports submitted to DEQ detailing program accomplishments and compliance with the MS4 permit. Duties include enhancing public education and outreach related to the MS4 program, encouraging and sustaining public involvement in implementation of the MS4 program, performing dry weather screening to detect and eliminate illicit discharges to the City MS4, maintaining non-spatial databases for tracking implementation and inspection of stormwater best management practices (BMPs), performing recurring routine inspections of stormwater BMPs, and implementing a City-wide training program to ensure all staff have been trained on, and adopt procedures that ensure good housekeeping for City operations.

Approved TMDL Waste Load(s) Allocations

The City currently has four (4) local wasteload allocations (WLAs) assigned for local waters.

Table 1 Summary of the City's WLSs

Watershed	Pollutant	WLA	Est. Watershed Discharge (ft ³)	Est. Pollutant Discharge
Bull Run	Sediment	210 tons	~129,499	< 210 tons
Bull Run	E. coli	6.82 E+09 cfu	~129,499	< 6.82 E+09 cfu
Broad Run	E. coli	1.15 E+10 cfu	~129,499	< 1.15 E+10 cfu
Occoquan River	E. coli	2.95 E+10 cfu	~129,499	< 2.95 E+10 cfu

Regulated Physical Interconnected MS4s to which the Small MS4 Discharges

- 1) Prince William County
- 2) Virginia Department of Transportation
- 3) City of Manassas Park

There have been no new interconnections during this last permit cycle.

MS4 Program Plan Implementation

This is the City of Manassas' first Program Plan under this new five-year MS4 permit. The effective date of this MS4 permit is November 6, 2018.

Minimum Control Measure 1: Public Education and Outreach

Section I.E.1 of the MS4 permit requires the city to implement a public education and outreach program designed to:

- (1) Increase the public's knowledge of how to reduce stormwater pollution, placing priority on reducing impacts to impaired waters [currently *E. coli* and sediment] and other local water pollution concerns;
- (2) Increase the public's knowledge of hazards associated with illegal discharges and improper disposal of waste, including pertinent legal implications;
- (3) Implement a diverse program with strategies that are targeted towards individuals or groups most likely to have significant stormwater impacts.

Demographics

Table 1: Background Community Demographics Pertinent to this Topic

Demographics: City of Manassas (US Census Bureau Data)	
Population Estimate (7/1/2018)	41,641
Population (2010)	87,821
Population (2010), under 5 years old (%)	8.5%
Population (2010), under 18 years old (%)	27.0%
Population (2010), over 65 years old (%)	10.4%
Median Age (2010)	33.3
Medium Household Income, 2014-18 (in 2018 \$)	\$78,462
Language Spoken at Home (2017)	
English Only	60.2%
Spanish	31.4%
Indo-European	3.4%
Asian and Pacific Islands	3.0%
Other	1.9%
Race (2010)	
African American	15.3%
American Indian	1.4%
Asian	6.3%
Native Hawaiian	0.2%
Hispanic ¹	37.8%
White	73.3%
Two or More	3.5%
Education (2010)	
High School or Higher	92.9%
Bachelor's Degree of Higher	29.7%

Table 2: Additional Background Information Relative to Topic

Public Schools in Manassas		
Elementary Schools	Intermediate/Middle Schools	High Schools
Baldwin Elementary School	Baldwin Intermediate School	Osborn High School
Jeannie Dean Elementary School	Mayfield Intermediate School	
Richard C. Haydon Elementary School	Grace E. Metz Middle School	
George C. Round Elementary		
Weems Elementary School ^[51]		

¹ Hispanics may be of any race, so also are included in applicable race categories [therefore, this section does not add up to 100%].

High Priority Sites

This same section requires the city to identify no less than three high-priority stormwater issues to meet the goal of educating the public in accordance with the previous section. The City has identified the following high-priority water quality issues that contribute to the discharge of stormwater:

- 1) Illicit Discharges and Illegal Dumping from Residents
- 2) Pet Wastes and Bacteria TMDL
- 3) Sediment

The following rationale provides the basis for selecting the high-priority water quality issues:

1. Illicit Discharges and Illegal Dumping from Residents

The City has identified litter and hazardous waste as problem pollutants through field observations and citizen complaints. Improper discharges and dumping can result in the release of toxic chemicals and bacteria to the waters of Virginia. This can be mitigated by increasing outreach to students, residents, and businesses on how to prevent pollution and the legal consequences of noncompliance.

2. Pet Wastes and Bacteria TMDL

The City has identified bacteria (i.e., *E. coli*) from pet waste as a high priority water quality issue. City watersheds including Broad Run, Occoquan River, and Bull Run have been designated as impaired for *E. coli* by DEQ. Public education can play an important role in reducing bacteria by educating pet owners about the human health and legal consequences of not picking up pet waste.

3. Sediment

Previously, the City identified Chesapeake Bay Nutrients as one of its high-priority water quality issues; however, beginning in 2019, this has been changed in order to be more focused and potentially more effectively implemented (phosphorus and nitrogen are no longer listed as separate concerns—outside the other parts of this General Permit coverage). Common sources of sediment include stormwater runoff from urban and suburban lawns, roadways, and other developed areas. Public education and outreach efforts emphasize reductions of controllable sediment; which would in turn, reduce the quantities of sediment reaching the Chesapeake Bay.

This Program Plan discusses each of these priority issues separately:

Illicit Discharges and Illegal Dumping from Residents

The target audience is all people that work or live in the city.

The city's stormwater website contains a variety of stormwater information, ranging from better home and garden practices, pet care, swimming pool maintenance, taking care of dumpsters, preventing work-related leaks and spills, and the disposal of grease and oil [Responsible party: Stormwater staff in the Utilities Department].

All city parks contain signs that state illegal dumping is prohibited. All city parks contain trash receptacles for park users to dispose of their trash and pet waste. The city maintains its servicing of the trash receptacles and pet waste stations through the Didlake, Inc. contract administered through the Refuse & Recycling Coordinator [Responsible party: Parks, Culture, & Recreation].

Signs have been erected in the common areas where the dumping has occurred [Responsible party: Solid Waste and Recycling Coordinator].

Modes of communication of these messages will target civic groups, non-profits, faith-based organizations, and schools, by using the following communication tools:

- Social Media (Facebook)
- City website
- Flyer (distributed to City Hall, Boys & Girls Club, Schools and Manassas Museum).

Pet Wastes and Bacteria TMDL

City residents tend to walk their pets on both the streets and in one or more of the 17 city parks. Therefore, the focus of the city's outreach on this topic will be in the city-owned and managed parks.

In each of the 17 city parks, city staff will post the standardized park rules and prohibitions sign. This sign displays rules governing issues ranging from pet waste to illegal dumping. [Responsible party: *City Parks Department*.]

Currently, 5 of these 17 parks contain stations where pet owners may obtain free of charge pet waste disposal bags. It is a goal for this reporting year to increase that to 8 parks that contain these pet waste disposal bag stations. [Responsible party: *City Parks Department*.]

Sediment

- The City will (by June 30, 2020) develop interpretive and educational material on sediment impacts, with the specifically targeted audience being developers and contractors working for new construction projects within the City limits. The material will be handed out to persons and firms applying for construction and ground disturbing permits.
- By June 30, 2020, the City will post sediment educational website links on the City's MS4 stormwater website. These links will include the Prince William County Soil and

Water Conservation District website, The Best Lawn Program website, Master Gardeners of Prince William County website, and Clean Waters Partnership's website.

Best Lawn Program

The Best Lawn Program is administered by the Virginia Cooperative Extension Office-Prince William County. Virginia Cooperative Extension is a cooperation of local, state and federal governments in partnership with tens of thousands of citizens. Program content is based on the research conducted at the state's two land-grant universities: Virginia Tech and Virginia State University. Using feedback from the community, local extension offices design, implement and evaluate Cooperative Extension's programs.

The Building Environmentally Sustainable Turf (BEST) Lawn Program recognizes that to grow grass well you have to understand its needs. Healthy grass is the best defense against weeds, pests and diseases in your lawn. The BEST Lawn Program will help participants learn turf fertilization maintenance practices and timing to prevent problems. Depending upon the current condition of a person's lawn, converting to a BEST Lawn will take some time and planning.

- The City recently joined the Clean Waters Partnership. This year, the Partnership is greatly expanding its social media outreach. Partly due to our recent membership, the Partnership will expand some of their outreach messaging to include a large percentage of sediment-related pollutants.

Northern Virginia Clean Water Partners

The Northern Virginia Regional Commission, of which the city of Manassas is a member jurisdiction, oversees and manages the Northern Virginia Clean Water Partners program. The City of Manassas has recently become a paid member of this partnership. This membership provides the City with the diverse educational and outreach material available to membership organizations. This material is then distributed among the residents of the City's residents. The Partnership has long recognized that polluted and uncontrolled stormwater is the number one cause of poor stream and river quality in Northern Virginia, including within Manassas. The Only Rain Down the Drain! program is one example of the educational work that the Partnership performs for the interest of its membership. Some facts about the *Only Rain Down the Drain!* Regional Stormwater Education Initiative:

- The Northern Virginia Clean Water Partners *Only Rain Down the Drain* regional stormwater education initiative is crafted by and for Northern Virginia jurisdictions and managed by NVRC
- The campaign uses cable television ads, website ads, and a website, onlyrain.org, to encourage the public to keep pollutants such as excess fertilizer and used motor oil from flowing into storm drains which lead to the Potomac River and Occoquan Reservoir, our sources of drinking water, and eventually the Chesapeake Bay

- The City of Manassas has an unprecedented opportunity to pool local outreach dollars to collectively target pollution-causing behaviors using a multi-media approach for greater impact at less cost and effort
- The strategy provides for community engagement and the production of outreach materials that can be customized and used by each locality.

Table 2: Clean Water Partners

Existing Clean Water Partners as of 2020	
<ul style="list-style-type: none"> • Fairfax County • Loudoun County • Arlington County • Stafford County • City of Alexandria • Fairfax Water • Loudoun Water • George Mason University • City of Falls Church • Town of Herndon • City of Manassas 	<ul style="list-style-type: none"> • City of Fairfax • Town of Vienna • Town of Leesburg • Town of Dumfries • Doody Calls • Northern Virginia Regional Commission • Virginia Coastal Zone Management Program • Prince William County Public Schools • Alexandria Sanitation Authority

Table 3: Action Items Implemented to Address the MS4 Public Education and Outreach MCM

Department	Description	Goal	Metric
Utilities	Pursue other outlets to distribute existing stormwater (e.g. pet waste management animal shelters and to City parks).	Expand audience from existing outlet locations	Number of outlet locations, and number of hand-outs distributed
Utilities	Initiate a comprehensive (Citywide) GIS data layer depicting the extent of existing streamside vegetative buffers.	Analyze and document the health and condition of the City's riparian conditions	Percent of streams assessed and placed in City's GIS.
Schools	Create a working group of educators to advise and assist the Utilities Department in the development of curriculum-based stormwater educational material for City schoolchildren.	Incorporate stormwater into the school's curriculum.	Number of curriculum-base material created and implemented.
Development Services	Expand and update the City's Erosion and Sediment Control website(s).	Make it easier for the public to understand and navigate the construction stormwater process.	Presence of updated website.
Schools	Provide in-house stormwater training for the schools custodial staff.	Increase City staff's awareness of stormwater and the MS4 permit.	Number of employees attending training.
Utilities	Post electronic versions of informational brochures on the City's website or create a web page with a stormwater focus.	Posting of information on the website.	Number of hits to the website.
Utilities	Place a link to the informational brochure/web page on the City Employee Intranet.	Public awareness.	

Table 3 (continued): Action Items to Address: MS4 Public Education and Outreach MCM

Department	Description	Goal	Metric
Schools	Provide in-house stormwater training for the schools custodial staff.	Increase City staff's awareness of stormwater and the MS4 permit.	Number of employees attending training.
Utilities	Post electronic versions of informational brochures on the City's website or create a web page with a stormwater focus.	Posting of information on the website.	Number of hits to the website.
Utilities	Place a link to the informational brochure/web page on the City Employee Intranet.	Public awareness.	
Public Works	Continue distributing recycling and hazardous waste educational material to the public.	Public awareness and water quality improvement.	Create link. Numbr. educational material distributed.
Utilities	Develop an educational initiative focused on nutrients in the Sumner Lake region.	Increase Sumner Lake resident's awareness of stormwater and water quality issues in their neighborhood	The development of a strategic plan.
Utilities	Develop and disseminate educational handout material focused on stream sediment.	Increase the public understands of sediment impacts. What are options to reduce impacts?	Number and diversity of educational material created.
Utilities	Update the City's stormwater page, including developing a Spanish version.	Reach a different audience than the current website reaches	Percent of website provided in Spanish.
Public Works	Continue disseminating informational and educational material on yard waste management, recycling, and hazard waste collection	Relay information to City-wide public	Number of hand-outs distributed
Parks and Recreation	Provide in-house stormwater training for the parks and recreation staff.	Increase City staff's awareness of stormwater and the MS4 permit.	Number of employees attending training.
Utilities	With input and involvement from other departments, draft a Citywide communications plan.	Provide a strategic vision for the City's stormwater-related communications.	Development of the plan.
Utilities	Hold at least two stormwater/MS4 permit-focused sessions during the routine Water and Sewer Friday training schedules.	Increase stormwater awareness among City staff.	Number of employees attended.

Minimum Control Measure 2: Public Involvement and Participation

Table 3 Action Items Implemented by City Departments to Address the MS4 Public Involvement and Participation Minimum Control Measure

Department	Description	Goal	Metric
Public Works	Coordinate with the existing Citizens Advisory Committee (CAC) to evaluate trash, recycling, and litter control activity and explore opportunities for improving refuse and recycling services and community outreach.	Hold CAC meetings monthly.	# meetings with CAC. # attendees to the meeting.
Public Works	Monitor the existing storm inlet placards and replace where needed.	Increase the public's awareness of the interconnectedness of the stormwater system and the Chesapeake Bay.	Number of sites assessed.
Public Works	Participate through promotion, sponsorship, or other involvement; in a minimum of three local activities annually, e.g. stream clean-ups, hazardous waste clean-up days, Earth Day and Utility Day.	Increase the public's stormwater awareness.	Number of activities, and number of attendees.
Utilities	Participate through promotion, sponsorship, or other involvement; in a minimum of one local activity annually, e.g. stream clean-ups, Earth Day and Utility Day.	Increase the public's stormwater awareness.	Number of activities, and number of attendees.
Utilities	Develop a comment box/feature for the City's website for the public to comment on and provide input on the Program Plan.	Better facilitate the public's participation on Program Plan updates.	Website feature added, and the number of public use.
Utilities	Evaluate the effectiveness and feasibility of developing the City's own Adopt-A-Stream program.	Improve the condition of the City's streams and riparian resources.	Assessment completed.

Table 4 List of Proposed Public-participation Events (July 1, 2018 – June 30, 2019)

Proposed Public Event	Target Audience	Proposed Time	Responsible Division
Household HazWaste Drop-off Event	City Residents	July 2018	Public Works
Household HazWaste Drop-off Event	City Residents	August 2018	Public Works
Household HazWaste Drop-off Event	City Residents	September 2018	Public Works
Household HazWaste Drop-off Event	City Residents	October 2018	Public Works
Household HazWaste Drop-off Event	City Residents	November 2018	Public Works
Household HazWaste Drop-off Event	City Residents	March 2019	Public Works
Household HazWaste Drop-off Event	City Residents	April 2019	Public Works
Household HazWaste Drop-off Event	City Residents	May 2019	Public Works
Household HazWaste Drop-off Event	City Residents	June 2019	Public Works
Utility Day	City Residents	October 2018	Utilities
Weems El. School	Fourth Graders	March 2019	Schools/Utilities
Recycle Fest	City Residents	May 2019	Public Works

Minimum Control Measure 3: Illicit Discharge Detection and Elimination

The Illicit Discharge Detection and Elimination Program is managed and coordinated by the City’s Utilities Department.

A significant revision and overhaul of the City’s stormwater Geographic Information System (GIS) spatial database will occur within this upcoming reporting year. Once complete, the system will be used within all City departments, will be actively managed and updated, and a copy will be provided to the Virginia Department of Environmental Quality (DEQ).

List of Relevant SOPs and Related Documents) [see the appendix for the actual document]²

- SOP: Draft Illicit Discharge Detection & Elimination Procedures [Utilities, 2019, 6 p.]
- Plan: Emergency Response Plan for Hazardous Material [Fire Marshal, nd, 8 p.]
- Letter Template: Cease and Desist Yard Waste Dumping [Public Works, 2017, 1 p.]
- Letter Template: Grass Clipping Yard Dumping [Public Works, 2019, 1 p.]

Table 5 Action Items Implemented by City Departments to Address the MS4 Illicit Discharge Detection and Elimination Minimum Control Measure

Department	Description	Goal	Metric
Engineering	Update and keep current storm sewer GIS map and corresponding database.	Increase accuracy, efficiencies and analytical function of a spatial database capability.	GIS maintenance program established.
Utilities	Characterize the typical chemical signature of stormwater, groundwater, and public water.	Better assess and investigate illicit discharges.	Characterization study initiated.
Fire Marshal	Continue hazardous spill response program.	Maintain this program throughout permit period	Number incidents addressed.
Public Works	Continue offering household hazardous waste drop-off opportunities.	Maintain this service throughout permit period	Number of events.
Utilities	Continue to identify priority areas in the City for potential pollution problems and monitor those locations to ensure compliance with existing regulations.	Update a GIS layer of priority areas Regularly monitor throughout permit cycle	Number locations identified.
Fire Marshal	Continue enforcement of stormwater illicit discharge incidents.	Reduce the number of illicit discharges.	Number of enforcement actions.
Utilities	Stormwater hotline and online comment form (See-Click-Fix) established for citizens to report spills,	Stormwater hotline and See-Click-Fix established	Number of calls to hotline.

² These are the most current SOPs for these functions; however, some are out-of-date, especially related to functions and responsible department. For instance, long-term stormwater management have been changed from Public Works to Utilities. Aside from the responsible department, most of the elements in these SOPs are still valid.

	illegal dumping, BMP problems, and construction site complaints.		
Utilities	Evaluate the need to update the City's stormwater ordinance.	Provide greater efficiency in stormwater program management	Ordinance reviewed.

Minimum Control Measure 4: Construction Site Stormwater Runoff Control

Construction site runoff control in the City is implemented through its Erosion and Sediment (E&S) Control Program. The Virginia Erosion and Sediment Control Management Program was adopted by the City Council on June 16th, 2014 and became effective as of July 1, 2014. This program is managed consistent with Virginia Erosion and Sediment Control Law §62.1-44.15:51 of the Code of Virginia and Virginia Erosion and Sediment Control Regulations 9VAC25-840 et seq.

For the implementation of this program, the City uses Articles 4 and 8 of the City of Manassas' Design Construction Standards Manual, City Code (Environmental Chapter 58, Article 3 and 4), and Virginia's Erosion and Sediment Control Handbook.

List of SOPs or related documents [see the appendix for the actual document]

- Ordinance: VSMP (Div. 1, Article IV, § 58-7) [City, 2018, 11 p.]
- Ordinance: Long-term Maintenance, Permanent Stormwater (Div. 2, § 58-108) [City, 2018, 3 p.]
- Ordinance: Hearings and Appeals (Div. 3, § 58-110) [City, 2018, 2 p.]
- Ordinance: Enforcement (Div. 4, § 58-112) [City, 2018, 3 p.]
- Ordinance: Fees (Div. 5 § 58-113) [City, 2018, 2 p.]
- Ordinance: Floodplain Management (Article II, § 66-31)
- Ordinance: Stormwater Management Utility (Article VI, § 118-683) [City, 2018, 4 p.]
- Ordinance: Stormwater Pollution (Subdiv. IIA, § 118-369) [City, 2018, 4 p.]
- SOP: Stormwater Record Keeping [Development Services, 2014, 1 p.]
- SOP: Engineering (Stormwater) Inspections [Engineering, 2018, 31 p.]
- SOP: Stormwater Bond [Development Services, 2014, 4 p.]
- SOP: Stormwater Enforcement [Development Services, 2014, 3 p.]
- SOP: Stormwater Monitoring and Inspections [Development Services, 2014, 2 p.]
- SOP: Review of Stormwater Management Plan and E&S Plan [Dev. Services, 2014, 5 p.]
- SOP: Draft Site Plan Plats and Deeds [Development Services, 2019, 6 p.]
- SOP: Draft Site Development Permit and Bonding [Development Services, 2019, 3 p.]
- SOP: Draft Project Closeout [Development Services, 2019, 5 p.]

Table 6 Roles and Responsibilities Regarding Construction Site Stormwater Management

Department	Roles and Responsibilities
Development Services	Coordinates Plan Review and Permit Issuance.
Engineering	Site Inspections, Site Enforcement, Plan Review, GIS Upkeep
Utilities	Non-spatial Data Repository, Annual Accomplishment Data

Table 7 Action Items Implemented by City Departments to Address the MS4 Construction Site Stormwater Runoff Control Minimum Control Measure

Department	Description	Goal	Metric
Development Services	Continue managing the City’s Construction Site Stormwater Runoff Control program.	Coordinate plan review and permit issuance for better quality stormwater.	All regulated disturbance activities receive appropriate permits.
Development Services	Create and update Erosion and Sediment Control SOPs	Provide more consistent permit processing.	Consistent process is being followed.
Engineering	Maintain DEQ ESC and VSMP plan review, inspection and administration certification for a minimum of two City employees.	Maintain two certifications throughout the permit period.	Number certificates.
Development Services	Maintain DEQ ESC and VSMP plan review, inspection and administration certification for a minimum of two City employees.	Maintain two certifications throughout the permit period.	Number certificates.
Engineering	Ensure contractors comply with the erosion and sediment control regulations and VSMP permit regulations and implement applicable E&S controls. Review stormwater management plans prior to land disturbance.	Permit compliance.	Number of inspections conducted. Summary of enforcement actions taken.
Development Services	Ensure contractors comply with the erosion and sediment control regulations and VSMP permit regulations and implement applicable E&S controls. Review stormwater management plans prior to land disturbance.	Coordinate plan review and permit tracking.	Number of regulated land disturbing activities; Track number of total disturbed acres.

Minimum Control Measure 5: Post-construction Stormwater Management for New Development and Development on Prior Developed Lands.

Construction site runoff control in the City is implemented through its Erosion and Sediment (E&S) Control Program. The Virginia Stormwater Management (VSMP) Program was adopted by the City Council on June 16th, 2014 and became effective as of July 1, 2014. This program is managed consistent with the Virginia Stormwater Management Act §62.1-44.15:24 of the Code of Virginia and Virginia Stormwater Management Program Regulations 9VAC25-870 et seq. The SWM requirements for Development on Prior Developed Lands are consistent with the State regulations.

Currently, there are written procedures for erosion and sediment control inspections and inspections of construction stormwater management; however, there are no specific written procedures for post-construction stormwater inspections. In this coming reporting year, the City will develop a standardized inspection form and develop written inspection procedures.

Periodic routine inspections are conducted for both City-maintained and privately-maintained permanent structural and non-structural stormwater facilities.

The City maintains a database of all SWM facilities and related inspection activities.

List of Relevant SOPs or Related Documents [see the appendix for the actual document]³

SOP: Privately Maintained BMP Facilities Inspection & Mtnce. [P. Works, 2014, 2 p.]

SOP: Publicly Maintained BMP Facilities Inspection & Mtnce. [P. Works, 2014, 3 p.]

List of Stormwater BMPs.

Table 8 Roles and Responsibilities Regarding Post-Construction Stormwater Management

Department	Roles and Responsibilities
Development Services	Administer construction plan review and permitting processes
Engineering	Site Inspections, Site Enforcement, Plan Review, GIS Upkeep
Utilities	Program Management and Coordination; Non-spatial Data Repository; Annual Accomplishment Data; Site Inspections, Site Enforcement

³ These are the most current SOPs for these functions; however, some are out-of-date, especially related to functions and responsible department. For instance, long-term stormwater management have been changed from Public Works to Utilities. Aside from the responsible department, most of the elements in these SOPs are still valid.

Table 9 Action Items Implemented by City Departments to Address the MS4 Post-Construction Stormwater Management Minimum Control Measure

Department	Description	Goal	Metric
Utilities	Continue to inspect and maintain all public BMPs annually to ensure structural stormwater management facilities are maintained and operating properly.	Inspect all public BMPs annually.	Number BMPs inspected.
Utilities	City-wide database of stormwater facilities developed and maintained.	Increase efficiency of stormwater program, and permit compliance.	Database maintained.
Utilities	Maintain an updated list of private BMPs, and contact information, and those property owners responsible for maintaining stormwater management facilities.	Maintain dialogue between the City and stormwater facility owners.	Number of contacts made.
Utilities	Inspect all privately owned stormwater management facilities at least once every five years	Permit compliance.	Number BMPs inspected each year.
Utilities	Track and update the City's database of permanent stormwater management facilities.	Permit compliance.	Database maintained.
Engineering	Evaluate, and update as necessary, the Stormwater Management Ordinance to be consistent with the requirements of the VSMP, as amended.	Permit compliance.	Percent completion of ordinance review.
Public Works	Inspect public BMPs after rain events and clean up BMPs as needed.	Maintain the BMPs in proper working order, and communicate any structural deficiencies identified to Engineering and Utilities.	Number of rain events needing response, and number of rain events responded.
Utilities	Transition into new number BMP Facility ID scheme for the database.	Avoid confusion and increase efficiencies of database use.	Database updated.
Engineering	Transition into new number BMP Facility ID scheme for the GIS.	Avoid confusion and increase efficiencies of database use.	GIS updated.
Engineering	Maintain DEQ post construction inspection and administration certification (combined E&S and Stormwater) for a minimum of two City employees.	Maintain two certifications throughout the permit period.	Number certificates.
Development Services	Maintain DEQ stormwater administration certification for a minimum of one City employee.	Maintain certification throughout the permit period.	Number certificates.
Engineering	Maintain DEQ plan review and inspections certification for a minimum of one City employee.	Maintain certification throughout the permit period.	Number certificates.
Utilities	Maintain DEQ post construction inspection certification for a minimum of one City employee.	Maintain certification throughout the permit period.	Number certificates.

Changes to Stormwater BMP Inventory

Since the last Program Plan, City staff have made several changes to the number of stormwater BMPs within the city, although the total number has not dramatically changed, since there have been both additions and subtractions. Some of these changes include:

- BMP #6 (UOSA- Godwin Drive) had been previously listed as a private stormwater BMP; however, it is a constructed basin designed and used as an emergency catch basin for sewer overflows, so therefore, should not be listed as a stormwater BMP. It has since been deleted from the City's inventory.
- BMP #19 (Wellington Subdivision (Pond 1C)) had been listed as a private stormwater pond; however, the City gave the landowner permission in the 1990s to remove the pond's riser, so ever since it has not been retaining/detaining water. Absence of this facility serves no treatment function, so it was removed from the inventory. Note: in the 1990s, when permission was granted to dismantle the riser, the stormwater treatment for this area was transferred to, and served by, the recently constructed Winter Branch Regional Stormwater Pond.
- BMP #40 (Cannon Industrial Park) had been previously listed as a private stormwater BMP; however, while it drains a private industrial complex, the pond and the parcel it is located on, is owned and managed by the City of Manassas. Therefore, the inventory switched it from a Private pond to a Public pond.
- BMP #42 (VDOT-234 Bypass). Although even the name of this BMP ("VDOT") implies VDOT ownership, but for whatever reason, this stormwater facility had been listed on the City's inventory as a City-owned and managed pond. The City verified that while the pond is within the City's boundaries, it is on a parcel owned and maintained by VDOT. Therefore, this facility was removed from the inventory as a City-owned BMP and placed as a VDOT-owned and maintained BMP.
- BMP #44 (Point of Woods). Similarly to BMP #40, this was previously listed as a private pond, but it has since been established that the pond is owned and maintained by the City of Manassas. Therefore, the inventory switched it from a Private pond to a Public pond.
- BMP #56 (Prince William County Judicial Center) is a stormwater BMP, but it is owned and maintained by an isolated "in-holding" parcel owned and maintained by Prince William County. The City has no jurisdiction on this parcel, so this BMP was removed from the City's inventory.
- BMP #65 (Wal-Mart) is a stormwater pond constructed in or about 1992. It has in the past been inspected, but for unknown reasons it has never been added to the City's official inventory. It has recently been added to the inventory.
- BMP #66 (Shemin Nursery) is a stormwater pond constructed between 1990 and 2001. For unknown reasons it has never been added to the City's official inventory. The

landowner has even recently re-dredged the pond. It has recently been added to the inventory.

- BMP #67 (Water Treatment Pond). There has been a stormwater pond located on the City’s water treatment plant property (owned and maintained by the City, but not within the jurisdictional limits of the City). The City owns and manages this pond, but since this parcel is not in the City’s limits, and it is a part of the water treatment plant’s individual industrial permit, this pond is noted in the City’s stormwater facilities inventory, but does not count towards being a MS-4 stormwater BMP.
- BMP #68 (Manassas Station Redevelopment) is a Bayfilter stormwater facility that went on-line June 30, 2018. Therefore, it has been added to the City’s inventory.
- BMP #69 (Liberia Plantation Redevelopment) is a Sheet Flow to Open Space BMP that is currently under development. Although it has not been formally completed yet, it has been added to the City’s inventory.

Therefore, last year the City reported a total of 57 stormwater facilities (35 private and 22 public); this year, we are listing a total of 59 stormwater facilities (35 private, 23 public, and 1 VDOT).

Minimum Control Measure 6: Pollution Prevention and Good Housekeeping for Facilities Owned or Operated by the Permittee within the MS4 Service Area

High Priority Facilities Owned and Operated by the City

Previously, the City identified the airport, public works facility, and the water treatment plant as being the three identified high-priority facilities with a high potential of discharging pollutants. While this list still stands and is still valid, this Program Plan removes them from this list and has replaced them with the four listed in the table below. These previous three were removed from this list because they each have their own separate VPDES permit; and one of the main points of the MS4 program is to focus on all the “other” not already permitted areas.

Table 10 High Priority Facilities Owned and Operated by the City

Facility Name	Facility Address	Potential Concern	Responsible Party
City Storage/Boneyard	9911 Godwin Drive	Sediment & Nutrients	Public Works/Utilities
Sumner Lake	9306 Sumner Lake Blvd.	Nutrients	Utilities
Euclid Industrial Park	9090 Jerrys Circle	Trash	Public Works
City sidewalks and adjacent areas	City-wide	Pet Waste	Utilities

Table 11 Fertilized Turf on City of Manassas Properties:

Location of Fertilized Turf	Acres Fertilized	Date Nutrient Mgmt. Plan	Responsible Dept.
IBM Ball Fields	12.58	9/9/18 – 9/9/21	Public Works
Manassas Museum	2.63	9/9/18 – 9/9/21	Public Works
Jennie Dean Ball Fields	4.41	9/9/18 – 9/9/21	Public Works
Byrd Park Ball Fields	2.58	9/9/18 – 9/9/21	Public Works
Public Works Hillside	2.39	9/9/18 – 9/9/21	Public Works
Office Buildings	10		Public Works
Roadways	13		Public Works
Osborn High School	< 1 ac.	n/a	Schools
Field near Wellington	< 1 ac.	n/a	Schools
Metz Jr. High School	< 1 ac.	n/a	Schools
Patriot Fields	< 1 ac.	n/a	Schools

Relevant Standards, Plans, and Documents [see the Appx. for the actual document]

- BMP: Concrete Washout Area [Engineering, nd, 9 p.]
- Plan: Parks Maintenance Plan (many topics, incl. turf & SW mgmt. [Parks, 2018, 120 p.]
- Plan: Salt Usage Plan [Public Works, 2019, 2 p.]
- SWPPP: Public Works & Utility Maintenance [Public Works, nd, 55 pp.]
- SOP: Draft Stockpile (soil) [Public Works, nd, 5 p.]

Table 12 Action Items Implemented by City Departments to Address the MS4 Pollution Prevention and Good Housekeeping for Facilities Owned or Operated by the Permittee within the MS4 Service Area Minimum Control Measure

Department	Description	Goal	Metric
Utilities	Develop and implement a City-wide stormwater training plan.	Increase stormwater awareness among City staff.	Number employees trained, and training hours.
Utilities	Develop and implement written standard operating procedures (SOPs) for all pollution prevention activities.	Continue to develop SOPs and list SOPs to be prepared through the permit cycle.	Number SOPs developed.
Parks and Recreation	Develop a SOP for chlorinated pool water draining and pool cleaning.	Better ensure chlorinated water does not enter stormwater system.	SOP developed.
Schools	Draft Scope of Work for nutrient management plans for all fertilized School-managed fields greater than one acre.	Potentially reduce nutrients from getting into storm and natural waters.	Scope of Work developed.
Public Works	Maintain stormwater pollution prevention, spill response, hazardous waste, illicit discharge, good housekeeping, and safety training programs for City operations.	Conduct training biennially as determined by each department through the permit cycle. Develop annual training plan for the following year.	Number of training sessions conducted. Number of City employees attended. Summary of training or certification program.
Public Works	Update the SOP for salt and winter de-icing, and incorporate findings and recommendations of the regional salt management strategies team.	Reduce quantity of salt entering streams and the stormwater system.	SOP in development.

Table 12 (con't.)

Department	Description	Goal	Metric
Utilities	Maintain compliance with established individual site general permits (public works facility and water treat plant).	Permit compliance.	Permit compliance.
Airport	Maintain compliance with established individual site general permit (airport).	Permit compliance.	Permit compliance.
Utilities	Work with the City's contracting staff to ensure a consistent procedure and language in contracts issued, that holds contractors to the same stormwater standards as City staff.	Permit compliance.	Policy in development.
Schools	Provide stormwater awareness training to teachers and school administrators.	Increase employee stormwater awareness.	Number of employees trained.
Utilities	Monitor municipal high-priority facilities and high potential of discharging pollutants among high-priority facilities not covered under a separate VPDES permit Develop and implement SWPPP for all high priority facilities.	Permit compliance.	Number of monitoring events.
Public Works	Evaluate chemical application procedures and update SOP as needed.	Reduce the potential of harmful side-effects as a result of City chemical use.	Number of processes evaluated and the number of revised SOPs.
Public Works	Continue storm inlet cleaning program.	Reduce sediment and other pollutants from getting into streams.	Number of storm inlets cleaned.
Utilities	Continue stormwater pipe cleaning (the Sewer Dept.'s vacuum trucks are occasionally used in pipe cleaning).	Reduce sediment and other pollutants from getting into streams.	Number of stormwater pipes cleaned.
Public Works	Maintain street sweeping program for all City streets	Sweep 250 lane miles of City streets at least 4 times a year Collect 18 tons of debris per month	Number of lane miles swept and frequency Number of tons of debris collected
Public Works	Maintain sweeping program for downtown streets and sidewalks	Sweep downtown streets and sidewalks daily	Quantity and frequency of roads & sidewalks swept.
Utilities	Pursue appropriateness of obtaining a Virginia DEQ E4 certification for the Water Plant and Vehicle Maintenance Facility.	Better ensure water quality is maintained.	Certification process reviewed and formal adoption recommendation is made to City managers.
Public Works	Evaluate the feasibility of obtaining stormwater TMDL credits for a storm inlet clean-out program.	Explore creative means to reduce stormwater pollutants.	Feasibility process reviewed and formal adoption recommendation is made to City managers.
Utilities	Perform CCTV inspections of storm pipes to inform condition assessments and identify failing infrastructure.	Identify compromised storm pipes and relay details to other Depts.	Linear feet of CCTV inspections conducted.
Utilities	Maintain stormwater pollution prevention, spill response, hazardous waste, illicit discharge, good housekeeping, and safety training programs for City operations.	Conduct training biennially as determined by each department through the permit cycle. Develop annual training plan for the following year.	Number of training sessions conducted and City employees attended. Summary of training or certification program.

Appendices

The following is a list of stormwater-related documents included in this appendix. After each listed item there is a bracket containing three pieces of information: the responsible City department, the year of publication, and the number of pages.

List of Stormwater BMPs [Utilities, 2019, 3 p.]
Plan: Emergency Response Plan for Hazardous Material [Fire Marshal, nd, 8 p.]
Plan: Parks Maintenance Plan (many topics, incl. turf & SW mngmnt. [Parks, 2018, 120 p.]
Facility Inspection Report Form [Utilities, 2019, 4 p.]
SWPPP: Public Works & Utility Maintenance [Public Works, nd, 55 pp.]
Ordinance: VSMP (Div. 1, Article IV, § 58-7) [City, 2018, 11 p.]
Ordinance: Long-term Maintenance, Permanent Stormwater (Div. 2, § 58-108) [City, 2018, 3 p.]
Ordinance: Hearings and Appeals (Div. 3, § 58-110) [City, 2018, 2 p.]
Ordinance: Enforcement (Div. 4, § 58-112) [City, 2018, 3 p.]
Ordinance: Fees (Div. 5 § 58-113) [City, 2018, 2 p.]
Ordinance: Floodplain Management (Article II, § 66-31) [City, 2018, 20 p.]
Ordinance: Stormwater Management Utility (Article VI, § 118-683) [City, 2018, 4 p.]
Ordinance: Stormwater Pollution (Subdiv. IIA, § 118-369) [City, 2018, 4 p.]
BMP: Concrete Washout Area [Engineering, nd, 9 p.]
SOP: Privately Maintained SWP/BMP Facilities Inspection & Mtnce. [Public Works, 2014, 2 p.]
SOP: Publicly Maintained SWP/BMP Facilities Inspection & Mtnce. [Public Works, 2014, 3 p.]
SOP: Stormwater Record Keeping [Development Services, 2014, 1 p.]
SOP: Stormwater Bond [Development Services, 2014, 4 p.]
SOP: Stormwater Enforcement [Development Services, 2014, 3 p.]
SOP: Stormwater Monitoring and Inspections [Development Services, 2014, 2 p.]
SOP: Review of Stormwater Management Plan and E&S Plan [Dev. Services, 2014, 5 p.]
SOP: Engineering (Stormwater) Inspections [Engineering, 2018, 31 p.]
SOP: Draft Sand/Salt Usage [Public Works, 2019, 2 p.]
SOP: Draft Site Plan Plats and Deeds [Development Services, 2019, 6 p.]
SOP: Draft Illicit Discharge Detection and Elimination (IDDE) Procedures [Utilities, 2019, 6 p.]
SOP: Draft Stockpile (soil) [Public Works, nd, 5 p.]
SOP: Draft Site Development Permit and Bonding [Development Services, 2019, 3 p.]
SOP: Draft Project Closeout [Development Services, 2019, 5 p.]
Letter Template: Cease and Desist Yard Waste Dumping [Public Works, 2017, 1 p.]
Letter Template: Grass Clipping Yard Dumping [Public Works, 2019, 1 p.]