Colonial Heights MS4 Annual Report 2021

Stormwater Management Program

October 1, 2021

Colonial Heights Department of Public Works
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a. Background Information

1. Colonial Heights Municipal Separate Storm Sewer System - VA040009
2. This annual report covers the period of July 1, 2020 through June 30, 2021.
3. Per a Consent Special Order issued to the City by the Soil & Water Conservation Board on October 8, 2009, the City hired a MS4 Coordinator on August 6, 2008 and appointed a Stormwater Foreman from existing Department of Public Works (DPW) personnel. These roles and their concurrent responsibilities have not been modified since that time.
4. Zero (0) new municipal outfalls were added during this reporting cycle.
5. City's Webpage containing the current and past MS4 reports: http://www.colonialheightsva.gov/328/MS4-Annual-Reports
6. Signed certification (see last page of this report)

b. Status of Compliance

Attached as **Appendix A** is an Excel® spreadsheet depicting the updated 5 Year Action Plan showing the Fiscal Year BMP goals. Please see that appendix for a complete understanding of the status of compliance of the Colonial Heights permit.

c. Monitoring Data

Attached as **Appendix B** of this report is BMP data for all known BMPs in the City. Type, drainage area, owner information and operation and maintenance (O&M) status is determined for all known BMPs. O&M Inspections are then administered accordingly per this BMP Data Monitoring log.

Attached as **Appendix C** of this report are copies of the illicit discharge and dry-weather screening mechanisms utilized by the City's stormwater program. Paper recordation is used for these as they are conducted in the field.

d. Reporting Cycle - July 1, 2020 through June 30, 2021

e. Minimum Control Measure (MCM) Changes

All MCM change explanations are located in the "**REVISED OR ALTERED**" column of **Appendix A**.

f. Not applicable to VA040009

g. Not applicable to VA040009

h. Estimated discharge information pursuant to Section I B 9 may be found in **Appendix F+G**

i. Illicit Discharge(s) Control

Colonial Heights City Code, per §245 (ORDINANCE NO. 09-1, adopted March 11, 2009), authorizes the Department of Public Works to enforce the prohibition of illicit discharges and illegal connections. Via that ordinance, DPW may determine a deadline by which an illicit discharge must be corrected, and otherwise may correct the situation itself at the sole cost of the responsible party and\or land owner. Civil and criminal penalties are prescribed for willful, knowing violations.

In conjunction with the passage of this ordinance, an illicit discharge hotline was established during the first reporting year. See **Appendix D** for an explanation of the recorded incidents for this reporting period. In conjunction with these, **Appendix D**

During this reporting cycle, no projects were constructed within the City that interconnected with other MS4s.

j. Regulated Land Disturbing Activities

Attached as **Appendix E** is the regulated land disturbing activity data for this reporting cycle. The data reflects the information as compiled in the land disturbance activity reports as sent monthly to DCR.

k. Stormwater Management Facility Data

Attached as **Appendix B** is an Excel® spreadsheet containing data for all the stormwater management facilities in the City. All of the facilities for which Maintenance Agreements exist are inspected, per the terms of the agreements, by a Professional Engineer on a five-year cycle (**§ 245-37E)**. Copies of archived Maintenance Inspection Records are archived with the City's DPW-Engineering Division personnel.

Appendix B displays the year each BMP is recorded by the City as 'END 1-YMP', whether a maintenance agreement exists as 'Easement" and facilities added during the reported year as shaded yellow. No BMPs were adopted by the City during this reporting year.

l. Maintenance Agreements

Maintenance Agreements for all of the structural stormwater facilities as noted in Section K exist between the City and the respective private entity. The agreements require the owner to have operations and maintenance inspections conducted by a professional engineer on a five-year schedule. The owner is then responsible for documenting the results of that report with the City, via a completed Operation and Maintenance Inspection Record, and is responsible for any necessary repairs. An example Operation and Maintenance Record is provided in **Reference 18**.

m. Not applicable during this reporting cycle

Municipal Separate Storm Sewer System (MS4) Phase II Report Certification Statement

As required by 9VAC25-870-370 B, all reports required by state permits, and other information requested by the board, shall be signed by a responsible official or by a duly authorized representative of that person. A responsible official is:

1. For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy-making or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided the manager is authorized to make management decisions that govern the operation of the regulated facility, including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for state permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

2. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

3. For a municipality, state, federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.

A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described above;

2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. A duly authorized representative may thus be either a named individual or any individual occupying a named position; and

3. The written authorization is submitted to the department.

CERTIFICATION

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.

09/24/2021

Responsible Official Signature Date

VA040009 City of Colonial Heights, Virginia

Permit Number MS4 Name

MCM	PROPOSED BMP	TASK	MEASURABLE GOAL\ANTICIPATED ACHIEVEMENT	QTR	ACTION TAKEN	REVISED OR ALTERED	REF
#1: Public Education and Outreach on Stormwater Impacts	1.1.1. Lawn and Garden Activities	Information will be Included in *The City Focus* addressing appropriate landscape design, efficient irrigation, use of mulches, fertilizers, and pesticides. The City Focus is a City wide newsletter published in January, May, July and October.	Information on landscape design and fertilizer to be provided in May of each year. Information on mulch and efficient irrigation to be provided in May. Information on pesticides to be provided in July. *Use of harmful pesticides and fertilizers will be minimized by educating how water conservation techniques will be provided to homeowners.*	Q4	*Developing a Stormwater-friendly Lawn* is part of the seasonal stormwater literature offered as a permanent feature of the City's stormwater website.		1
#1: Public Education and Outreach on Stormwater Impacts	1.1.2. Water Conservation Practices for Homeowners	Provide information on city website and in *The City Focus* to advise public about water conservation practices. Provide links on City website to organizations that promote conservation practices.	Information to be provided in the Spring of each year and as necessary in drought conditions. *Water conservation techniques will be identified to homeowners.*	Q4	*10 Easy Ways to Conserve Water* is part of the seasonal stormwater literature offered as a permanent feature of the City's stormwater website.		2
#1: Public Education and Outreach on Stormwater Impacts	1.1.3. Proper Disposal of Hazardous Wastes	Provide information on city website and in *The City Focus* about the household hazardous waste pick up points and reasons to dispose of hazardous waste properly.	Information to be provided in the Fall of each year. *Homeowners will be educated on how to dispose of hazardous wastes properly.*	Q2	*Our Hazardous Households* is part of the seasonal stormwater literature offered as a permanent feature of the City's stormwater website.		3
#1: Public Education and Outreach on Stormwater Impacts	1.1.4. Trash Management	Provide information on city website and in *The City Focus* to inform public about benefits of proper trash management and effects of littering.	Information to be provided in Fall of each year. H*omeowners will be aware of problems associated with improper trash disposal (flooding, health hazards, etc.)*	Q2	Incorporated under 1.1.3; see associated Reference.		
#1: Public Education and Outreach on Stormwater Impacts	1.1.5. Pet Waste Management	Provide information on city website and in *The City Focus* to inform public about impacts of pet wastes to the environment. Post signs at City parks to address pet waste disposal. Provide waste disposal bags at city parks.	Information to be provided in the Spring of each year. Signs currently posted. Currently provided and will continue. *Owner will be aware of legal responsibility to remove pet wastes from City property and will use waste disposal bags to contain pet wastes.*	Q4	Signs and disposal containers are posted and present at all City parks.		4
#1: Public Education and Outreach on Stormwater Impacts	1.2.2. Develop a Relationship with Local Media	Identify local media staff and send them information generated.	Identify and review annually. *Get media involved* .	Q4	Costs for PSAs through TV and Radio were prohibitive. SWMP administration is investigating industry methods for PSAs that are less costly.		
#1: Public Education and Outreach on Stormwater Impacts	1.2.3. Classroom Education on Stormwater	Review curriculum for sixth grade students addressing natural resource management and its relation to public policy and cost/benefit tradeoffs as defined by SOL guidelines consistent with grade level. Target a select school in first year and evaluate for expansion.	Curriculum to be developed and used annually. *Children will learn about water conservation and environmental impacts caused by Improper waste disposal and misuse of household products.*	Q2	As the *Greener Ways, Cleaner Bays* initiative has yet to receive funding, SWMP administartion is developing opportunities with school staff that meets SOL guidelines. The materials associated to Task 2.1.3 are being tailored to meet SOL guidelines.		
#1: Public Education and Outreach on Stormwater Impacts	1.2.4. Organized Education on Stormwater	Identify two (2) target audiences who would benefit from organized education programs. Potential groups include the Boy and Girl Scouts.	Make contact with two (2) youth group leaders and explore target education programs. *Children will learn about environmental impacts of improper waste disposal and will learn to take responsibility for their environment.*	Q1	In addition to the *Greener Ways, Cleaner Bays* initiative that continues to seek funding, the City has initiated a partnership with the local Boy Scout troop for Stormwater Education programs\presentations.	*The city is investigating opportunities to partner with the local elementary schools to start a "Stormwater Education" initiative with 4th and 5th grade classes.*	
#1: Public Education and Outreach on Stormwater Impacts	1.3.1. Low Impact Development	Encourage developers and planners to apply low impact development practices (LID) Establish guidelines in plan review process for voluntary consideration applicable BMP measures for new development	Establish guidelines, record contact with developer and estimate number of acres developed with LID annually. *Low-impact development practices will be considered and used by builder to minimize development impacts*	ONGOING	In addition to LID Guidance documents, the City is developing a Stormwater Utility Fee Credit Policy to accompany its recently established Stormwater Utility Fee.The Credit Policy is scheduled for discussion during Fall '14 council sessions and contains financial incintives for LID.	*Council is considering the fee credit proposal provided last year and to what extent a credit would have on the existing program.*	5
#1: Public Education and Outreach on Stormwater Impacts	1.4.1. Pollution Prevention Program for Homeowners	Formalize pollution prevention hotline to report problems and/or illicit discharge and notify the public of the hotline number and conditions they should be aware of.	Develop hotline to appear permanently on and in *The City Focus. Citizens will be able to notify appropriate City personnel of violations and unfavorable conditions*	ONGOING Q1	The City has had a fully functional Pollution Prevention Hotline and an electronic reporting method for reporting polluting activities for three reporting yerars.	Though the City receives numerous calls reporting polluting activities, the Hotline is not widely used. SWMP administration is currently investing industry methods for making it more accessible.	6

MCM	PROPOSED BMP	TASK	MEASURABLE GOAL\ANTICIPATED ACHIEVEMENT	QTR	ACTION TAKEN	REVISED OR ALTERED	REF
#1: Public Education and Outreach on Stormwater Impacts	1.4.2. Pollution Prevention for Businesses	Establish guidelines for a pollution prevention and recognition program tailored for the business community and annually provide information to business owners through a brochure or the City's newsletter.	Establish a formal pollution prevention program that provides guidelines for the business community to follow and obtain public recognition. *Recognition of pollution prevention efforts and environmental responsibility will provide an incentive for the business community to cooperate with proper storm water management.*	Q1			14
#2: Public Involvement/ Participation	2.1.1. Stream Cleanup	Involve Boy and Girl Scout troops or other non-municipal organizations in cleanup efforts along streams and rivers. Encourage Scout masters to involve troop participation to meet goals consistent with the Boy Scout Forestry, and Soil and Water Conservation	Meet annually in Fall with Boy and Girl Scoutmasters / troop leaders or other non-municipal organizations to schedule annual clean up day along streams and rivers. *Children/Citizens will learn about environmental impacts of improper waste disposal.*	Q2	See 1.2.4 above and 2.1.2 below.		
#2: Public Involvement/Participation	2.1.2. Adopt-A-Street/Adopt-A-Stream	Encourage residents and groups to adopt streets and areas along streams and rivers for clean up and volunteer monitoring and identify which stream is the recipient of runoff from the adopted street. Develop a program to distribute to interested groups.	Inform public biannually through website and *The City Focus* of streets available for adoption. *Public will help keep streets and streams free* of *debris and identify with the program.*	Q 2 & Q 4		SWMP administratiom proposed an Adopt-A-Waterway program during the previous reporting year. City Council has since debated and continues to debate the utility of Adopt-A programs and has delayed action on implementation of the Adopt-A-Waterway program.	7
#2: Public Involvement/Participation	2.1.3. Public Programs in Schools	Encourage school children to create educational displays for public libraries and schools addressing stormwater pollution and control measures. Set up meetings and offer assistance to school science coordinator. Public Works to provide oversight and coordination.	Meet with Science coordinator annually. Consider creation of displays for August (National Water Quality Month). *Children will learn about stormwater impacts and* ways *that they can improve their environment.*	Q2	The City's *Greener Ways, Cleaner Bays* initiative as previously developed is still seeking funding. A coloring and activity book were developed for the K through 3 levels, and a trivia\activity poster were developed for the 4 through 6 levels. These materials are also available on the City's Stormwater 4 Kids webpage.		8
#3: Illicit Discharge Detection and Elimination	3.1.1. Review of Legal Authority	Assess City ordinance to ensure illicit discharges are adequately defined and prohibited. Ensure enforcement actions are implemented.	Revise ordinance as needed and review annually. (High Priority)	ONGOING	No changes have been made to the ordinance during this report year.	*The city continues to evaluate the Stormwater Ordinance and is investigating methods to encourage continued compliance.*	
#3: Illicit Discharge Detection and Elimination	3.2.1. Inventory Regulated Stormwater Outfall Locations	Using existing map and fieldwork, establish program and schedule for inventory and data base development.	Existing regulated outfalls will be identified for annual inspection and illicit discharge tracking. *Create map of regulated outfalls.* The City's 2003 inventory included approximately 40 outfalls to waterways and 600 inlets.	ONGOING- Q1	Incorporated under 3.2.2		10
#3: Illicit Discharge Detection and Elimination	3.2.2. Map Regulated Outfalls and their Drainage Areas	Using existing mapping and continuing to do field work, refine and increase accuracy and detail of stormwater drainage system maps.	Create mapping delineating drainage areas associate with regulated outfalls. *Areas contributing to runoff will be identified.*	ONGOING- Q1	Due to decreased staffing during the COVID-19 pandemic outfall inspections were completed after the 2019-2020 reporting cycle.		11
#3: Illicit Discharge Detection and Elimination	3.2.3. Locate Priority Area or Businesses Likely to have an Illicit Discharge	Using staff knowledge and available information develop a list of areas and businesses that would have a significant impact if a spill occurred or would have a high probability of having an accidental spill (ie auto repair shop restaurant and other industrial activities).	Create mapping of priority areas with unique pollution prevention schemes. *Areas that are possible sources of detrimental pollutants will be identified and monitored of possible problems.*	Q1	Database is in use and is utilized in PE&O, IDDE and for the City's watershed planning initiative.		12
#3: Illicit Discharge Detection and Elimination	3.2.4. Inspect Regulated Outfalls for Dry Weather Discharge	Develop a program to use in the inspection to include visual observation, odors and conditions that would indicate illicit discharges. Schedule and forms to document the program will be included.	Inspect all regulated outfalls annually. *Dry weather discharges will be identified and appropriate action taken.*	Q3	See Appendix C.		

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#3: Illicit Discharge Detection and Elimination	3.3.1 Trace and Remove Illicit Discharge	Establish method for tracing illicit discharges and procedures for enforcing ordinances. Techniques and safety need to be included	Revise handbook and include enforcement measures.	Q4	Procedures outlined in City Code		
#3: Illicit Discharge Detection and Elimination	3.3.2. Program Evaluation and Assessment	Develop a formal record-keeping procedure to document identification of illicit discharge and the steps taken to address the situation. Record keeping will be consistent with DCR reporting requirements in VA040009.	Annual review by City Staff. *Historic records addressing illicit discharge detection and elimination will be maintained and can be used for program evaluation.*	ONGG-OQI1N	See Appendix D.		
#3: Illicit Discharge Detection and Elimination	3.4.1. Illicit Discharge Education for Residences	Develop public education pollution prevention handouts to address illicit discharges from residences. Suggested topics include Household Hazardous Waste, Grass Clippings and Pesticides. Prepare 1 per year or as need is shown. Coordinate with 1.1 and 1.4	Provide on city forms to residents addressing household hazardous waste and impact to stormwater. *Homeowners will dispose of household hazardous wastes properly.*	Q3	As mentioned, the publications listed under this task are aregular fixture in the City's SWMP literature.		
#3: Illicit Discharge Detection and Elimination	3.4.2. Illicit Discharge Education for Businesses	Develop public education pollution prevention handouts to address illicit discharges from specific businesses. Suggested businesses include Auto Repair, Dry Cleaners and Restaurants. Prepare 1 per year or as need is shown. Coordinate with 1.4.2	Provide handouts to businesses addressing illicit discharges from their specific business and impact to stormwater. *Business will dispose of hazardous wastes and minimize use of hazardous or toxic materials.*	Q4	Disseminated once per year and an ongoing feature of the Stormwater website.		14
#4: Construc-tion Site Stormwater Runoff Control	4.1.1. Evaluate Current Ordinance and Method of Site Plan Review Using DCR Guidelines	Review current City of Colonial Heights ordinances, policies and procedures for reviewing E&S Control plans submitted in conjunction with the Site Plan review. Compare the City practices with those of other Virginia municipalities and the industry standards. Attention will be given to Ordinance 92-6, requiring VSMPs and other applicable regulations.	Compile, create, and publish a standard operating procedure for the review of E&S Control Plans. Refine E&S Control Plan review and publish definitive SOP	Q4	Currently used; see associated reference.		15
#4: Construc-tion Site Stormwater Runoff Control	4.1.2. Revise Ordinance Pertaining to Site Plan Review Including Construction Waste	Revise and introduce legislation to City Council as needed and identified in 4.1.1	Development and adaptation of ordinance. *Uniform application of regulation.*	Q1	The City Ordinance and the Department's Plan Review Checklist address the Task in various ways. See the associated reference.		15
#4: Construc-tion Site Stormwater Runoff Control	4.1.3. Develop Standards and Design Procedures for Site Plan Design	Review current City of Colonial Heights approved E&S Control methods guidance. Develop guidance specific to City topography and development practices, as to how and when each E&S Control method should be used. Include minimized Clearing, Stabilized Drainage Ways, Stabilized Exposed	Create regulations that provide City Staff with clear guidance. Simplify site plan design as it relates to erosion control	Q3	All current and future public works engineering staff are required to obtain certification and training provided by DEQ/DCR within 1 year of employment. All employees must maintain this certifications.		
#4: Construc-tion Site Stormwater Runoff Control	4.2.1. Develop Internal Checklist for Reviewers for Consistency	Collect and review other jurisdictions compared to Colonial Heights and develop internal checklist for reviewers. Consider adopting DCR checklist.	Development of internal checklist for reviewers. Internal checklist for reviewers creates consistency in the review process.	Q2	Checklist has been developed and is updated periodically. This form is available on the City's website for use.		18
#4: Construc-tion Site Stormwater Runoff Control	4.3.1. Training of City Staff for E&S Management and Site Plan Review	Select city site review staff members for training and certification in Virginia Department of Conservation (DCR) and Recreation E&S Control in Virginia for Plan Reviewers.	Provide opportunity for training and certification to new employees within 1 year of employment. Improves understanding of inspections on BMPs and E&S Procedure.	ONGG-OQI1	One members of staff received SWM training through DEQ.		37
#4: Construc-tion Site Stormwater Runoff Control	4.3.2. Training and Certification of E&S Construction Site Inspectors	Select city site review staff members of training and certification in (DCR) E&S Control in Virginia for Plan Inspectors.	Provide opportunity for training and certification to new employees within 1 year of employment. Improves understanding of inspections on BMPs and E&S procedure.	ONGG-OQI1	No new staff was hired and all present staff have current Inspector Certifications. Additional staff attended various Stormwater classes provided by APWA		37

MCM	PROPOSED BMP	TASK	MEASURABLE GOAL\ANTICIPATED ACHIEVEMENT	QTR	ACTION TAKEN	REVISED OR ALTERED	REF
#4: Construc-tion Site Stormwater Runoff Control	4.3.3. Coordination with Other Staff	Develop scheduled periodic meetings with Site Reviewers, Inspectors, GIS staff, and Public Works staff to discuss modifications to benefit programs.	Schedule meeting annually. *Continuously improve program for effectiveness.*	Q3	Revised previous to last reporting cycle. Documentation sheet is used regularly.		17
#5: Post-Construction Stormwater Management in New Development and Redevelop-ment	5.2.1. Review and Evaluate Current Technology	Evaluate current methods being used and select those applicable for Colonial Heights.	Develop list of methods. Allow developers to consider alternatives.	Q2	City is evaluating current BMPs and their effectiveness.		
#5: Post-Construction Stormwater Management in New Development and Redevelop-ment	5.2.4. Develop and Maintain an inventory of structural BMPs	Establish an inventory of structural BMPs to include type, order required O&M, inspection frequency, and locations of facilities constructed after 2003. Identify previously constructed non-structural BMPs as data becomes available	Develop and maintain data base. Ensure tracking of BMPs and their effectiveness.	Q3	Inventory created and utilized in O&M enforcement.		
#5: Post-Construction Stormwater Management in New Development and Redevelop-ment	5.3.2 Adopt Standards and Design Criteria	Adopt design criteria and examples fo structures such as retention basins, filters or other structures and landscaping features such as grassed swales or filter strips. The difference between structured and non-structured landscape features is the need to incorporate physical maintenance. Adopt a manual for distribution to design firms and	Provide guidance document. Allows developer to prepare consistent design.	Q1	Documentation is available via the city's website.		
#5: Post-Construction Stormwater Management in New Development and Redevelop-ment	5.3.3 Develop Inspection Procedures for Structural BMPs	Evaluate procedures used by others and prepare checklist, logs and methodology to inspect the selected types of BMPs. Develop inspection schedule for determining frequency. Include method for putting data into a database. Include a measurement for determining effectivness.	Conduct inspections as per schedule and maintain inspection on file. Determine structural conditions and effectiveness.	ONGOING Q1	Due to decreased staffing during the COVID-19 pandemic outfall inspections were completed after the 2019-2020 reporting cycle.		
#5: Post-Construction Stormwater Management in New Development and Redevelop-ment	5.3.4. Develop and Maintain Inventory of Structural BMP's	Coordinate with mapping to establish an inventory of structural BMP's to Include type, owner required 0 & M, inspection frequency, and location.	Develop and maintain data base. BMPs and map updates annual after initial completion.	ONGOING Q1	Complete; see associated Reference.		19
#5: Post-Construction Stormwater Management in New Development and Redevelop-ment	5.4.1. Training of City Staff for Site Plan Review and Field Inspections	Select staff members for training and certification of city staff using DCR course "Basic E & S Control in Virginia"	Provide opportunity for certification for new employees within 1 year of employment. *Improves understanding of inspections* on *BMPs and* E&S *procedure.*	ONGOING Q1	See 4.3.2		37
#5: Post-Construction Stormwater Management in New Development and Redevelop-ment	5.4.2 Coordination with Other Staff	Develop scheduled periodic meetings with Site Reviewers, Inspectors, GIS staff, and Public Works staff to discuss modifications to benefit programs.	Schedule meeting annually. Continuously improve program for effectiveness.		See 4.3.3		
#6: Pollution Prevention/ Good House-keeping for Municipal Operations	6.1.1 Maintenance Facilities	Inventory municpal facilities involved with possible stormwater pollution impact.	Develop mapping showing municipal facilities. City will be able to identify possible source of contaminants to stormwater runoff.	Q3	Mapping has been completed. City evaluates and makes changes as needed.		22 & 24

MCM	PROPOSED BMP	TASK	MEASURABLE GOAL\ANTICIPATED ACHIEVEMENT	QTR	ACTION TAKEN	REVISED OR ALTERED	REF
#6: Pollution Prevention/ Good House-keeping for Municipal Operations	6.1.2 Review and Prepare pollution prevention plans for Maintenance Shop	Evaluate current pollution prevention plans for applicable city facilities: DPW, school bus facilities and transit facilities and update as required.	update plans and meet with appropriate city personnel. City personnel will evaluate current pollution prevention plans and prepare possible emergency procedures.	Q1	All pollution plans are being evaluated and a new employee training initiative is being developed to educate new hires in maintenance and facilities departments.		
#6: Pollution Prevention/ Good House-keeping for Municipal Operations	6.1.3 Prepare Pollution Prevention Plan for Recreational Facilities	Prepare pollution prevention plans for applicable City recreational facilities.	update plans and meet with appropriate city personnel. City personnel will evaluate current pollution prevention plans and prepare possible emergency procedures.	Q1	see 6.1.2		
#6: Pollution Prevention/ Good House-keeping for Municipal Operations	6.1.4 Personnel Training	Train Operations personnel in pollution prevention measures.	Record annual training schedules and number and department personnel. City will ensure that all personnel are adequately informed of pollution prevention measures.	Q3	see 6.1.2		
#6: Pollution Prevention/ Good House-keeping for Municipal Operations	6.2.1. Parking Lot and Street Cleaning	One full time sweeper to clean all curb and gutter streets once a year.	Develop mapping to indicate streets cleaned and tonnage picked up. *City will track and evaluate current street cleaning routine and identify problem areas.*	ONGOING-Q1	504 Cubic yards of debris were removed this reporting year.		22
#6: Pollution Prevention/ Good House-keeping for Municipal Operations	6.2.2. Personnel Training	Evaluate inlet protection, erosion, and sediment control measures in road, utility, and bridge maintenance and train staff on methods.	Meet with 25% of required personnel on annual basis for training on current erosion and sediment control measures. *City personnel will employ current water quality measures for road, utility, and bridge maintenance.*	Q4	See 6.1.4		
#6: Pollution Prevention/ Good House-keeping for Municipal Operations	6.3.1. Storm Drain Intake System Cleaning	Using City field crews and equipment, clean curb inlets, catch basins and manholes in the stormwater drainage system.	Clean 25% of storm structures per year. Record for historic data on database. *Reduces volume of solids in stormwater.*	ONGOING-Q1	As a component of the City's inventory and mapping initiative, all inlets and structures that were mapped were also cleaned. An estimated 200 of the City's 450(+) inlets were cleaned this reporting cycle.		
#6: Pollution Prevention/ Good House-keeping for Municipal Operations	6.3.2 Storm Drain System Inventory	Delineat sub basins of non regulated outfall during Master Plan preparation. Inventory and evaluate all structures within one drainage basin per year. Coordinate with 5.1	Develop mapping and data bases for non-regulated outfall basins. Identify outfall areas to account for sources of possible contaminants.	Q2	Due to decreased staffing during the COVID-19 pandemic outfall inspections were completed after the 2019-2020 reporting cycle.		
#6: Pollution Prevention/ Good House-keeping for Municipal Operations	6.3.3. Stormwater Complaint File and History	Develop system to track and maintain historical data.	Review data annually. *Detection of failing or undersized systems.*	ONGOING-Q1			23
#6: Pollution Prevention/ Good House-keeping for Municipal Operations	6.4.1. Hazardous Materials Storage and Management	Evaluate storage locations and method of storing hazardous materials by EPA guidelines.	Record locations and methods of hazardous materials storage on map layer and database and inspect storage facilities annually. *Ensure hazardous materials storage containment is adequate.*	Q4	See associated reference.		24
#6: Pollution Prevention/ Good House-keeping for Municipal Operations	6.4.2. Salt Storage	Evaluate application and method of storing road salt.	Record application locations and methods of storage in layer and database. Inspect storage facilities annually. *Ensure salt storage is adequate.*	Q3	See Reference 24. During two (2) snow events this reporting year, salt and sand admixture was spread on all City streets.		22

Tracking ID	SWM ID	Facility Name	Facility Address	Owner\Designee	Owner\Designee Mailing	Owner\Designee City	Owner\ Designee State	Owner\ Designee Zip	TYPE	Acres BMP'd	File #	Last Inspection Date	Next Inspection Due	Long Term Maintenance	Notes
DEQSWM-2003-000003151	BMP-0001	City of Colonial Heights	201 James Avenue	City	201 James Avenue	Colonial Heights	VA	23834	Bioretention	0.60	100162	6/1/2021	5/31/2026	YES	
CICOLH-2013-00274338	BMP-0002	City of Colonial Heights	1209 Covington Road (behind)	City	201 James Avenue	Colonial Heights	VA	23834	Dry Detention Ponds	6.84	100515	6/1/2021	5/31/2026	YES	
CICOLH-1998-00273875	BMP-0003	City of Colonial Heights	Lee Place & Danville Ave	City	201 James Avenue	Colonial Heights	VA	23834	Underground Infiltration System	27.04	100520	6/1/2021	5/31/2026	YES	
DEQSWM-2003-000003153	BMP-0004	City of Colonial Heights	Archer Avenue at MLK Bridge	City	201 James Avenue	Colonial Heights	VA	23834	Dry Detention Ponds	0.74	101101	6/25/2019	6/23/2024	YES	
DEQSWM-1993-000000857	BMP-0005	City of Colonial Heights	Chesterfield Avenue at Marvin Avenue	City	201 James Avenue	Colonial Heights	VA	23834	Dry Detention Ponds	0.11	100530	6/1/2021	5/31/2026	YES	
DEQSWM-2002-000002788	BMP-0006	City of Colonial Heights	100 Highland Avenue	City	201 James Avenue	Colonial Heights	VA	23834	Bioretention	0.60	100162	6/1/2021	5/31/2026	YES	
DEQSWM-2003-000003152	BMP-0009	CHMS (additions; staff parking lot)	500 Conduit Road	School Board	512 Boulevard	Colonial Heights	VA	23834	Bioswale	1.20	100973	6/1/2021	5/31/2026	YES	
DEQSWM-1991-000000625	BMP-0010	Clements Retail Center (formerly)	3522 Boulevard	Mr. Norris Jones Jr.	16925 Jefferson Davis Hwy	Colonial Heights	VA	23834-5330	Underground Infiltration System	0.44	100040	2/27/2019	2/26/2024	YES	
DEQSWM-2000-000002099	BMP-0011	Colonial Car Wash	3224 Boulevard	FD & B Enterprises, LLC	1377 Anderson Hwy	Powhatan	VA	23139	Underground Infiltration System	1.24	100006	1/10/2018	1/9/2023	YES	
DEQSWM-2011-000008305	BMP-0012	Lakeview Maintenance Bldg.	401 Taswell Avenue	Colonial Heights School Board	512 Boulevard	Colonial Heights	VA	23834	Dry Detention Ponds	0.43	100208	6/1/2021	5/31/2026	YES	
DEQSWM-1998-000001568	BMP-0013	Colonial Marketplace	3220 Boulevard	BDSB, LLC	PO Box 23242	Richmond	VA	23242	Underground Infiltration System	0.79	100119	1/29/2020	1/27/2025	YES	
DEQSWM-2011-000008031	BMP-0014	Creek View Center	3660 Boulevard	Creek View Center, LLC	PO Box 23061	Richmond	VA	23223-0361	Underground Infiltration System	1.16	100039	2/18/2019	2/17/2024	YES	
DEQSWM-1995-000001042	BMP-0015	Colonial Orthopaedics (Formerly Dominion Chevrolet)	325 Charles H. Dimmock Parkway	Dominion CH, LLC	2000 Ware Bottom Springs Rd.	Chester	VA	23836	Dry Detention Ponds	1.90	100035	7/6/2021	7/5/2026	YES	
DEQSWM-2009-000007225	BMP-0016	James River Cardiology (Formerly Dominion Nissan)	445 Charles H. Dimmock Parkway	KARA ESA COLHGTS, LLC (Dr. Mitesh Amin)	6414 Midlothian Turnpike	Richmond	VA	23225	Dry Detention Ponds	11.03	100017	2/6/2020	2/4/2025	YES	
DEQSWM-2002-000003067	BMP-0017	Dr. Richard Bates, DDS	3610 Boulevard	Dr. Richard Bates	3610 A Boulevard	Colonial Heights	VA	23834	Dry Detention Ponds	0.58	100005	9/17/2018	9/16/2023	YES	
DEQSWM-2001-000002450	BMP-0018	Dunlop Farms Senior Apartments	1000 Dunlop Place	Mr. Lanny Redden, APTCO East, LLC	21400 Ridgetop Circle, Ste 250	Sterling	VA	20166	Filtering Practices	5.79	100024	7/16/2019	7/14/2024	YES	
DEQSWM-2009-000007353	BMP-0019	Gilcreff Place Subdivision	Dunlop Farms Boulevard	Gilbert C. Martin Company / Attention Pam Comstock	117 Roanoke Avenue	Colonial Heights	VA	23834	Dry Detention Ponds	6.35	100159	3/11/2019	3/9/2024	YES	
DEQSWM-2012-000008989	BMP-0020	Gills Point Section 9	Adjacent to 3860 Perthshire Ln	Bernard A. Hrouda c\o Gills Point Development Corp.	1001 Taylor Lane	Colonial Heights	VA	23834	Dry Detention Ponds	27.73	100209	1/30/2020	1/28/2025	YES	
DEQSWM-1986-000000066	BMP-0021	Hardee's	1850 Boulevard	BNE Restaurant Group IV LLC c/o RASH #56-46-28160	PO Box 260888	Plano	TX	75026-0888	Dry Detention Ponds	1.62	100053	4/22/2019	4/20/2024	YES	
DEQSWM-2001-000002448	BMP-0022	Home Depot #4633	2600 Conduit Road	Sammy Boehms, Home Depot USA, Inc	2455 Paces Ferry Rd.	Atlanta	GA	30339	Dry Detention Ponds	13.11	100054	1/9/2020	1/7/2025	YES	
DEQSWM-2005-000004877	BMP-0024	Jones Office Building	2306 Boulevard	Mr. Norris E. Jones	16925 Jefferson Davis Hwy	Colonial Heights	VA	23834-5330	Dry Detention Ponds	0.12	100047	2/28/2019	2/27/2024	YES	
DEQSWM-2007-000005536	BMP-0025	Laurel Park Office Building	2425 Boulevard	Laurel Park Commons LLC	2903 Boulevard Suite A	Colonial Heights	VA	23834	Dry Detention Ponds	0.20	100138	9/14/2021	9/13/2026	YES	**Has items to be corrected. Items have been corrected, waiting on final report.**
DEQSWM-2008-000006166	BMP-0026	Laurel Park Office Building	2425 Boulevard	Laurel Park Commons LLC	2903 Boulevard Suite A	Colonial Heights	VA	23835	Dry Detention Ponds	0.34	100218	9/14/2021	9/13/2026	YES	**Has items to be corrected. Items have been corrected, waiting on final report.**
DEQSWM-1991-000000623	BMP-0027	McDonald's	411 Southpark Circle	Anton Dimitroff Successor Trust or Trustee Hansen Etal.	3755 Avocado Boulevard #223	La Mesa	CA	91941	Dry Detention Ponds	1.15	100080	5/9/2019	5/7/2024	YES	
DEQSWM-2005-000004109	BMP-0028	Mekhoubat Office Building	107 W Ellerslie	Mekhoubat Properties, Inc	P.O. Box 276	Colonial Heights	VA	23834	Dry Detention Ponds	0.20	100129	2/25/2019	2/24/2024	YES	
DEQSWM-1995-000001043	BMP-0029	NTB Tire Shop	773 Southpark Boulevard	Kosmakos Properties, LLC	11101 Hampton Rd	Fairfax Station	VA	22039-2301	Dry Detention Ponds	1.14	100068	4/22/2020	4/21/2025	YES	
DEQSWM-2002-000002789	BMP-0030	Midas	1400 Boulevard	TMT, LLC	11463 West Broad St.	Richmond	VA	23233	Dry Detention Ponds	0.42	100007	6/22/2018	6/21/2023	YES	
DEQSWM-1988-000000170	BMP-0031	Dante's (Formerly Movietime)	2900 Cedar Lane	88, LLC	4121 Meadowdale Blvd. Suite B	North Chesterfield	VA	23234	Dry Detention Ponds	0.08	101070	2/19/2020	2/17/2025	YES	
DEQSWM-2009-000006836	BMP-0033	Mt. Pleasant Baptist playground	3111 Greenwood Avenue	Rob McIntosh c/o MPBC	3110 Greenwood Avenue	Colonial Heights	VA	23834	Underground Infiltration System	0.20	100137	2/14/2018	2/13/2023	YES	
DEQSWM-2011-000008088	BMP-0034	Mt. Pleasant Baptist parking lot extension	3110 Greenwood Avenue	Rob McIntosh c/o MPBC	3110 Greenwood Avenue	Colonial Heights	VA	23834	Underground Infiltration System	0.83	100188	2/19/2018	2/18/2023	YES	
es not need to be in Clearingho	BMP-0036	Olive Garden	600 Southpark Blvd	Colonial Capital, LLC	7050 45th Ave Apt 1	Woodside	NY	11377	Underground Detention System	0.32	100183	8/11/2021	8/10/2026	YES	
DEQSWM-2000-000002098	BMP-0037	Outback Steakhouse	165 Southpark Circle	Cole OU Portfolio, LLC C/O OSI Restaurant Partners	Outback Steakhouse, 2202 North Westshore Boulevard, 5th Floor	Tampa	FL	33607	Dry Detention Ponds	1.92	100055	7/26/2018	7/25/2023	YES	
DEQSWM-2002-000002851	BMP-0038	Over The Edge	3635 Boulevard	William K. Thibault	206 Battery Place	Colonial Heights	VA	23834	Underground Infiltration System	1.41	100050	3/25/2020	3/24/2025	YES	**Has items to be corrected. Deadline extension given. All items will be fixed by 10/15/2021.**
DEQSWM-1990-000000543	BMP-0039	Park South Business Park	798 Southpark Boulevard	Faison - Colonial Heights Office Associates C/O Aston Properties	610 E Morehead Street, Suite 100	Charlotte	NC	28202	Underground Infiltration System	14.61	100073	3/26/2019	3/24/2024	YES	
es not need to be in Clearingho	BMP-0040	Peoples Advantage Credit Union	2801 Conduit Road	Audrey L. Bollinger, President	2801 Conduit Road	Colonial Heights	VA	23834	Underground Detention System	1.3	100152	2/21/2020	2/19/2025	YES	
DEQSWM-1991-000000624	BMP-0041	Pizza Hut Delivery	714 Ellerslie Avenue	ARC CAFEUSA001 LLC	2325 E Camelback Rd	Phoenix	AZ	85016	Dry Detention Ponds	0.84	100046	8/11/2021	8/10/2026	YES	
DEQSWM-2011-000007940	BMP-0042	Prospect Heights Subdivision	214 Clover Hill Avenue	spans two parcels					Wet Pond	0.50		7/7/2021	7/6/2026	YES	
DEQSWM-1998-000001565	BMP-0043	Rite Aid #4820	3210 Boulevard	ATTN: Facilities	30 Hunter Lane	Camp Hill	PA	17011	Dry Detention Ponds	1.70	100101	6/1/2009	**Notice of Violation Sent June 16, 2021**	YES	
DEQSWM-2002-000002790	BMP-0044	Riverview Apartments	205 Archer Avenue	Tablerock Capital	1300 South Heidi Place	Meridian	ID	83642	Dry Detention Ponds	6.27	100083	7/27/2021	7/26/2026	YES	
DEQSWM-1994-000000906	BMP-0045	Sam's Club	735 Southpark Boulevard	Store Manager	735 Southpark Boulevard	Colonial Heights	VA	23834	Dry Detention Ponds	6.61	100121	1/6/2021	1/5/2026	YES	
DEQSWM-2003-000003154	BMP-0046	Sheetz	2711 Conduit Road	TAMERA, LLC c/o Sheetz	5700 6th Avenue	Altoona	PA	16602	Wet Pond	2.09	100084	9/7/2021	9/6/2026	YES	
DEQSWM-2009-000007281	BMP-0047	Southside Regional Medical Center	436 Claremont Court	The Cameron Foundation C/O Property Valuation SVCS	14400 Metcalf Avenue	Overland Park	KS	66223	Dry Detention Ponds	5.64	100058	4/5/2019	4/3/2024	YES	
DEQSWM-2009-000006837	BMP-0048	Starbucks	790 Southpark Boulevard	Robert & Grace, LLC C/O Thalhimer Commercial Properties	11100 W Broad St	Glen Allen	VA	23060	Underground Infiltration System	0.80	100142	3/26/2019	3/24/2024	YES	
DEQSWM-1998-000001566	BMP-0049	Target Store (#T-1016)	721 Southpark Boulevard	Myles Peterson	P.O. Box 111	Minneapolis	MN	55440	Dry Detention Ponds	2.70	100112	7/30/2021	7/29/2026	YES	
DEQSWM-2006-000004919	BMP-0050	Temple Lake Offices, Lots 11 & 12	131 Temple Lake Drive	Roslyn Farm Corporation C/O Nick Walker	320 Charles H. Dimmock Parkway, Suite C	Colonial Heights	VA	23834	Filtering Practices	1.70	100127	3/26/2019	3/24/2024	YES	
DEQSWM-1998-000001567	BMP-0051	Terrace View Apartments	200 Lakeview Avenue	Terrace View Apartments Partners, LLC	202 Lakeview Park Rd.	Colonial Heights	VA	23834	Dry Detention Ponds	2.26	100111	8/20/2018	8/19/2023	YES	
DEQSWM-2010-000007794	BMP-0052	Tussing Elementary	5501 Conduit Road	School Board	512 Boulevard	Colonial Heights	VA	23834	Dry Detention Ponds	3.66	100202	6/1/2021	5/31/2026	YES	
DEQSWM-2009-000006890	BMP-0053	Virginia Pediatrics (Atreos)	301 Jennick Drive	Dr. Oscar & Amabel Sibal	11904 Hogans Alley	Chester	VA	23836	Dry Detention Ponds	1.37	100128	3/7/2019	3/5/2024	YES	
DEQSWM-2011-000008379	BMP-0055	Walgreens	626 Boulevard	Walgreen Company	104 Wilmot Rd.	Deerfield	IL	60015-5121	Dry Detention Ponds	0.32	100198	4/14/2020	4/13/2025	YES	
DEQSWM-2001-000002449	BMP-0056	WaWa	604 Boulevard	RED ROOF	260 W. Baltimore Pike	Wawa	PA	19063	Dry Detention Ponds	0.32	100107	6/28/2018	6/27/2023	YES	
DEQSWM-1996-000001228	BMP-0058	White Bank Landing, Section II	155 Watercress Court (adjacent)	Comstock Associates C/O Swearingen Realty	1001 Boulevard	Colonial Heights	VA	23834	Dry Detention Ponds	3.79	100430	2/18/2019	2/17/2024	YES	
es not need to be in Clearingho	BMP-0060	A. Wright Pond Office Building	250 Ellerslie Avenue	Shell Center Capital LLC	250 Ellerslie Ave	Colonial Heights	VA	23834	Restictive Outlet	0.41	100051	3/10/2020	3/9/2025	YES	
DEQSWM-2004-000003589	BMP-0061	American Family Fitness	930 South Avenue	Roslyn Farm Corporation C/O Nick Walker	320 Charles H. Dimmock Parkway, Suite C	Colonial Heights	VA	23834	Dry Detention Ponds	32.44	100002	3/26/2019	3/24/2024	YES	

Tracking ID	SWM ID	Facility Name	Facility Address	Owner\Designee	Owner\Designee Mailing	Owner\Designee City	Owner\ Designee State	Owner\ Designee Zip	TYPE	Acres BMP'd	File #	Last Inspection Date	Next Inspection Due	Long Term Maintenance	Notes
DEQSWM-2009-000006975	BMP-0063	Ariya	3507 Boulevard	Ariya Real Estate	3507 Boulevard Suite A	Colonial Heights	VA	23834	Underground Infiltration System	0.32	100191	6/22/2021	6/21/2026	YES	**Has items to be corrected. Items are in process of being corrected, waiting on final report.**
DEQSWM-1993-000000802	BMP-0064	Bank of Southside VA	764 Ellerslie Avenue	Property Manager	P.O. Box 40	Carson	VA	23830-0040	Dry Detention Ponds	0.88	100012	9/23/2019	9/21/2024	YES	
DEQSWM-2003-000003157	BMP-0066	Jones Office Building	201 Temple Avenue	Mr. Norris E. Jones	16925 Jefferson Davis Hwy	Colonial Heights	VA	23834-5330	Dry Detention Ponds	0.44	100052	2/28/2019	2/27/2024	YES	
DEQSWM-2011-000008173	BMP-0067	Colonial Heights Healthcare Center	831 E Ellerslie Avenue	Mario Thompson	831 E Ellerslie Avenue	Colonial Heights	VA	23834	Dry Detention Ponds	6.20	100886	3/26/2019	3/24/2024	YES	
CICH-2015-00002133	BMP-0068	Colonial Heights Courthouse	550 Boulevard	City	201 James Avenue	Colonial Heights	VA	23834	Dry Detention Ponds	4.60	101112	6/1/2021	5/31/2026	YES	
DEQSWM-2014-000009665	BMP-0069	EVB Bank	3012 Boulevard	Sona Bank	3012 Boulevard	Colonial Heights	VA	23834	Underground Infiltration System	1.60	101117	3/19/2019	3/17/2024	YES	
CICOLH-2011-00274340	BMP-0071	Patient First - North Riverview	1260 Temple Avenue	Temple Avenue PFC LLC C/O Patient First Corporation	5000 Cox Road Suite 100	Glen Allen	VA	23060	Dry Detention Ponds	2.91	101006	8/20/2019	8/18/2024	YES	
CICOLH-2012-00273874	BMP-0072	Lakeview Elementaty School (Addition)	401 Taswell Avenue	Colonial Heights Public Schools	512 Boulevard	Colonial Heights	VA	23834	Dry Extended Detention Ponds	3.79	101082	6/1/2021	5/31/2026	YES	
CICOLH-2012-00274341	BMP-0073	Old Town Creek Center Phase I	2500 Boulevard	Frank Lundie	Lundie Holdings, LLC	Colonial Heights	VA	23834	Underground Infiltration System	0.91	101008	9/14/2021	9/13/2026	YES	**Has items to be corrected. Items are in process of being corrected, waiting on final report.**
CICOLH-2016-00274343	BMP-0074	Old Town Creek Center Phase II	2500 Boulevard	Frank Lundie	Lundie Holdings, LLC	Colonial Heights	VA	23834	Dry Detention Ponds	0.6	101011	9/14/2021	9/13/2026	YES	**Has items to be corrected. Items are in process of being corrected, waiting on final report.**
CICOLH-2010-00274344	BMP-0075	Value Place Parking Addition	255 Jennick Drive	Sandpiper Colonial Heights LLC	7200 Glen Forest Drive, Suite 200	Richmond	VA	23226	Proprietary Stormwater Treatment Device	1.25	100885	1/1/2010	**Notice of Violation Sent June 16, 2021**	YES	**Extension given. Will have inspection and all items rectified by 11/30/2021**
CICOLH-2012-00274342	BMP-0076	Wawa #2	1270 Temple Avenue	Wawa	P.O. Box 727	Colonial Heights	VA	23834	Dry Detention Ponds	1.54	101113	3/2/2020	3/1/2025	YES	
CICOLH-2013-00274339	BMP-0078	Yew Avenue Medical Office Building	3611 Boulevard	Dirach, LLC	835 Club Ridge Terrace	Chester	VA	23836	Proprietary Stormwater Treatment Device	0.7	101122	7/16/2021	7/15/2026	YES	
CICOLH-2017-00274345	BMP-0080	O'Reilly Auto Parts	1401 Boulevard	O'Reilly Auto Parts	P.O. Box 1156	Springfield	MO	65801	Bioretention	1.04	101136	1/1/2018	12/31/2022	YES	
VADEQ-2019-00246547	BMP-0081	North Elementary School (Addition)	3201 Dale Avenue	School Board (Maintenance Director)	512 Boulevard	Colonial Heights	VA	23831	Dry Extended Detention Ponds	1.00	101169	6/1/2021	5/31/2026	YES	
VADEQ-2018-00098106	BMP-0084	SRMC Free-Standing Emergency Center	60 East Roslyn Court	SRMC Engineering c/o Raymond Erskine	200 Medical park Blvd.	Petersburg	VA	23805	Wet Pond	5.80	101156A	1/1/2018	12/31/2022	YES	
	BMP-0085	Keystone Tractor Museum	880 West Roslyn Road	Keystone Tractor Museum	880 West Roslyn Road	Colonial Heights	VA	23842	Detention Basin	4.72	101138	5/18/2020	5/17/2025	YES	

DATE: 06/02/21

TIME: 8:55 ☒ **AM** ☐ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-001

MOST RECENT RAIN EVENT ▼

Time Lapse:

☐ < 2 days ☒ > 2 days

Estimated Amount:

☐ < 0.5 inches ☒ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☒ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☒ **Corridor** *(In or adjacent to watercourse)*

☐ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☐ Commercial ☒ Residential ☐ Institutional ☐ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☐ On\In concrete structure

☒ In\Near watercourse ☐ Upland area\away from watercourse ☐ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☐ **1 - No flow\interior conditions are dry** ☒ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: ____ **inches** __ **feet** Approximate depth of flow: _____ **inches** _____ **feet** Approximate flow rate: _____ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

Slight ponding due to silt buildup.

REPORTER SIGNATURE: Jeremy D Moore

DATE: 06/07/21

TIME: 10:11 ☒ **AM** ☐ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-002

MOST RECENT RAIN EVENT ▼

Time Lapse:

☐ < 2 days ☒ > 2 days

Estimated Amount:

☒ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☒ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☐ **Corridor** *(In or adjacent to watercourse)*

☐ **Upland** *(Not adjacent to watercourse)*

☒ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☐ Commercial ☒ Residential ☐ Institutional ☐ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☐ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☒ On\In concrete structure

☒ In\Near watercourse ☐ Upland area\away from watercourse ☒ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☒ **1 - No flow\interior conditions are dry** ☐ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: __ **inches** __ **feet** Approximate depth of flow: __ **inches** _____ **feet** Approximate flow rate: __ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

_____

_____

_____

REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/02/21

TIME: 9:00 ☒ **AM** ☐ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-010

MOST RECENT RAIN EVENT ▼

Time Lapse:

☐ < 2 days ☒ > 2 days

Estimated Amount:

☐ < 0.5 inches ☒ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☒ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☒ **Corridor** *(In or adjacent to watercourse)*

☐ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☐ Commercial ☒ Residential ☐ Institutional ☒ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☐ On\In concrete structure

☒ In\Near watercourse ☐ Upland area\away from watercourse ☐ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☒ **1 - No flow\interior conditions are dry** ☐ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: ___ **inches** __ **feet** Approximate depth of flow: ___ **inches** _____ **feet** Approximate flow rate: ____ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

_____

_____

_____

REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/03/21

TIME: 8:45 ☒ **AM** ☐ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-011

MOST RECENT RAIN EVENT ▼

Time Lapse:

☒ < 2 days ☐ > 2 days

Estimated Amount:

☒ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☒ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☒ **Corridor** *(In or adjacent to watercourse)*

☐ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☐ Commercial ☒ Residential ☐ Institutional ☐ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☐ On\In concrete structure

☒ In\Near watercourse ☐ Upland area\away from watercourse ☒ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*:

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*:

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

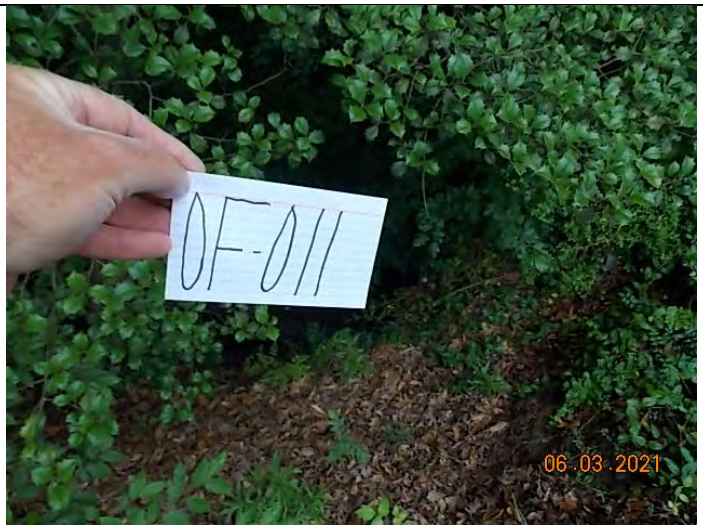
☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☐ **1 - No flow\interior conditions are dry** ☐ **2 - No visible flow\interior conditions are moist or damp** ☒ **3 - Visible flow** **Flow Estimates:** Width of flow surface: 3 **inches** __ **feet** Approximate depth of flow: <1 **inches** _____ **feet** Approximate flow rate: <1 **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**



Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

Water Test Performed

_____

_____

REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/03/21

TIME: 1:45 ☐ **AM** ☒ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-012

MOST RECENT RAIN EVENT ▼

Time Lapse:

☒ < 2 days ☐ > 2 days

Estimated Amount:

☒ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☒ **JA40** *(Appomattox River I and II)*

☐ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☒ **Corridor** *(In or adjacent to watercourse)*

☐ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☒ Commercial ☒ Residential ☐ Institutional ☐ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☒ On\In concrete structure

☒ In\Near watercourse ☐ Upland area\away from watercourse ☐ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☐ **1 - No flow\interior conditions are dry** ☐ **2 - No visible flow\interior conditions are moist or damp** ☒ **3 - Visible flow** **Flow Estimates:** Width of flow surface: 5 **inches** __ **feet** Approximate depth of flow: <1 **inches** _____ **feet** Approximate flow rate: 2 **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

_____

_____

REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/03/21

TIME: 8:50 ☒ **AM** ☐ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-013

MOST RECENT RAIN EVENT ▼

Time Lapse:

☒ < 2 days ☐ > 2 days

Estimated Amount:

☒ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☒ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☒ **Corridor** *(In or adjacent to watercourse)*

☐ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☒ Commercial ☒ Residential ☐ Institutional ☐ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☒ On\In concrete structure

☒ In\Near watercourse ☐ Upland area\away from watercourse ☒ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☐ **1 - No flow\interior conditions are dry** ☒ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: __ **inches** __ **feet** Approximate depth of flow: __ **inches** _____ **feet** Approximate flow rate: __ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

_____

_____

_____

Jeremy D Moore

REPORTER SIGNATURE: _____

DATE: 06/03/21

TIME: 9:14 ☒ **AM** ☐ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-014

MOST RECENT RAIN EVENT ▼

Time Lapse:

☒ < 2 days ☐ > 2 days

Estimated Amount:

☒ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☒ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☒ **Corridor** *(In or adjacent to watercourse)*

☐ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☒ Commercial ☐ Residential ☐ Institutional ☒ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☐ On\In concrete structure

☒ In\Near watercourse ☐ Upland area\away from watercourse ☒ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☐ **1 - No flow\interior conditions are dry** ☒ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: ___ **inches** __ **feet** Approximate depth of flow: ___ **inches** _____ **feet** Approximate flow rate: ___ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

_____

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REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/03/21

TIME: 8:52 ☒ **AM** ☐ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-015

MOST RECENT RAIN EVENT ▼

Time Lapse:

☒ < 2 days ☐ > 2 days

Estimated Amount:

☒ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☒ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☒ **Corridor** *(In or adjacent to watercourse)*

☐ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☒ Commercial ☒ Residential ☐ Institutional ☐ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☒ On\In concrete structure

☒ In\Near watercourse ☐ Upland area\away from watercourse ☒ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☐ **1 - No flow\interior conditions are dry** ☒ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: ___ **inches** __ **feet** Approximate depth of flow: ___ **inches** _____ **feet** Approximate flow rate: ___ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

_____

_____

_____

Jeremy D Moore

REPORTER SIGNATURE: _____

DATE: 06/03/21

TIME: 8:54 ☒ **AM** ☐ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-017

MOST RECENT RAIN EVENT ▼

Time Lapse:

☒ < 2 days ☐ > 2 days

Estimated Amount:

☒ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☒ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☒ **Corridor** *(In or adjacent to watercourse)*

☐ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☐ Commercial ☒ Residential ☐ Institutional ☐ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☒ On\In concrete structure

☒ In\Near watercourse ☐ Upland area\away from watercourse ☒ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☐ **1 - No flow\interior conditions are dry** ☒ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: ___ **inches** __ **feet** Approximate depth of flow: ___ **inches** _____ **feet** Approximate flow rate: ___ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

_____

_____

_____

REPORTER SIGNATURE: Jeremy D Moore

DATE: 06/02/21

TIME: 9:02 ☒ **AM** ☐ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-018

MOST RECENT RAIN EVENT ▼

Time Lapse:

☐ < 2 days ☒ > 2 days

Estimated Amount:

☐ < 0.5 inches ☒ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☒ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☒ **Corridor** *(In or adjacent to watercourse)*

☐ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☐ Commercial ☒ Residential ☐ Institutional ☐ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☐ On\In concrete structure

☒ In\Near watercourse ☐ Upland area\away from watercourse ☐ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

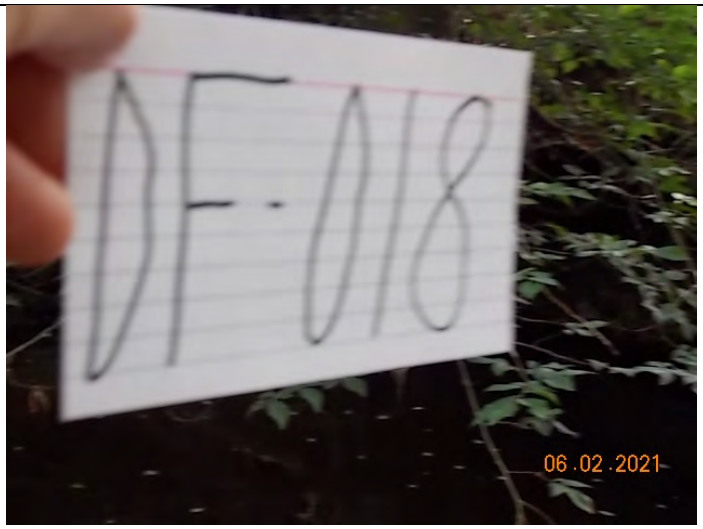
☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☒ **1 - No flow\interior conditions are dry** ☐ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: ___ **inches** __ **feet** Approximate depth of flow: ___ **inches** _____ **feet** Approximate flow rate: ____ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**



Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

_____

_____

_____

REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/02/21

TIME: 9:04 ☒ **AM** ☐ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-019

MOST RECENT RAIN EVENT ▼

Time Lapse:

☐ < 2 days ☒ > 2 days

Estimated Amount:

☐ < 0.5 inches ☒ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☒ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☒ **Corridor** *(In or adjacent to watercourse)*

☐ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☐ Commercial ☒ Residential ☐ Institutional ☐ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☐ On\In concrete structure

☒ In\Near watercourse ☐ Upland area\away from watercourse ☒ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☒ **1 - No flow\interior conditions are dry** ☐ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: ___ **inches** __ **feet** Approximate depth of flow: ___ **inches** _____ **feet** Approximate flow rate: ____ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

_____

_____

_____

REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/02/21

TIME: 9:15 ☒ **AM** ☐ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-021

MOST RECENT RAIN EVENT ▼

Time Lapse:

☐ < 2 days ☒ > 2 days

Estimated Amount:

☐ < 0.5 inches ☒ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☒ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☒ **Corridor** *(In or adjacent to watercourse)*

☐ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☐ Commercial ☒ Residential ☐ Institutional ☐ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☒ On\In concrete structure

☒ In\Near watercourse ☐ Upland area\away from watercourse ☒ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☐ **1 - No flow\interior conditions are dry** ☒ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: ___ **inches** __ **feet** Approximate depth of flow: ___ **inches** _____ **feet** Approximate flow rate: ____ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

_____

_____

_____

REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/07/21

TIME: 9:21 ☒ **AM** ☐ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-022

MOST RECENT RAIN EVENT ▼

Time Lapse:

☐ < 2 days ☒ > 2 days

Estimated Amount:

☒ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☒ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☒ **Corridor** *(In or adjacent to watercourse)*

☐ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☐ Commercial ☒ Residential ☐ Institutional ☐ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☒ On\In concrete structure

☒ In\Near watercourse ☐ Upland area\away from watercourse ☒ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☒ **1 - No flow\interior conditions are dry** ☐ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: ___ **inches** __ **feet** Approximate depth of flow: ___ **inches** _____ **feet** Approximate flow rate: ____ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

_____

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_____

Jeremy D Moore

REPORTER SIGNATURE: _____

DATE: 06/03/21

TIME: 8:40 ☒ **AM** ☐ **PM**

FILED BY: A. J. Covington

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-023

MOST RECENT RAIN EVENT ▼

Time Lapse:

☒ < 2 days ☐ > 2 days

Estimated Amount:

☒ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☒ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☒ **Corridor** *(In or adjacent to watercourse)*

☐ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☐ Commercial ☒ Residential ☐ Institutional ☐ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☐ On\In concrete structure

☒ In\Near watercourse ☐ Upland area\away from watercourse ☒ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☐ **1 - No flow\interior conditions are dry** ☒ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: ___ **inches** __ **feet** Approximate depth of flow: ____ **inches** _____ **feet** Approximate flow rate: ____ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

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REPORTER SIGNATURE: a.j. Covington _____

DATE: 06/02/21

TIME: 10:33 ☒ **AM** ☐ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-024

MOST RECENT RAIN EVENT ▼

Time Lapse:

☐ < 2 days ☒ > 2 days

Estimated Amount:

☐ < 0.5 inches ☒ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☒ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☒ **Corridor** *(In or adjacent to watercourse)*

☐ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☒ Commercial ☒ Residential ☐ Institutional ☐ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☐ On\In concrete structure

☒ In\Near watercourse ☐ Upland area\away from watercourse ☐ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☐ **1 - No flow\interior conditions are dry** ☐ **2 - No visible flow\interior conditions are moist or damp** ☒ **3 - Visible flow** **Flow Estimates:** Width of flow surface: 4 **inches** __ **feet** Approximate depth of flow: <1 **inches** _____ **feet** Approximate flow rate: <1 **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

_____

_____

REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/02/21

TIME: 10:33 ☒ **AM** ☐ **PM**

FILED BY: A. J. Covington

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-025

MOST RECENT RAIN EVENT ▼

Time Lapse:

☐ < 2 days ☒ > 2 days

Estimated Amount:

☐ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☒ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☒ **Corridor** *(In or adjacent to watercourse)*

☐ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☒ Commercial ☐ Residential ☐ Institutional ☒ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☐ On\In concrete structure

☒ In\Near watercourse ☐ Upland area\away from watercourse ☐ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☒ **1 - No flow\interior conditions are dry** ☐ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: ___ **inches** __ **feet** Approximate depth of flow: ___ **inches** _____ **feet** Approximate flow rate: ___ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

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REPORTER SIGNATURE: a.j. Covington _____

DATE: 06/02/21

TIME: 9:58 ☒ **AM** ☐ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-026

MOST RECENT RAIN EVENT ▼

Time Lapse:

☐ < 2 days ☒ > 2 days

Estimated Amount:

☐ < 0.5 inches ☒ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☒ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☐ **Corridor** *(In or adjacent to watercourse)*

☒ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☒ Commercial ☒ Residential ☐ Institutional ☐ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☐ On\In concrete structure

☐ In\Near watercourse ☒ Upland area\away from watercourse ☒ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☒ **1 - No flow\interior conditions are dry** ☐ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: ___ **inches** __ **feet** Approximate depth of flow: ___ **inches** _____ **feet** Approximate flow rate: ___ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

_____

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_____

REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/02/21

TIME: 9:45 ☒ **AM** ☐ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-027

MOST RECENT RAIN EVENT ▼

Time Lapse:

☐ < 2 days ☒ > 2 days

Estimated Amount:

☐ < 0.5 inches ☒ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☒ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☒ **Corridor** *(In or adjacent to watercourse)*

☐ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☒ Commercial ☐ Residential ☐ Institutional ☐ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☐ On\In concrete structure

☒ In\Near watercourse ☐ Upland area\away from watercourse ☒ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

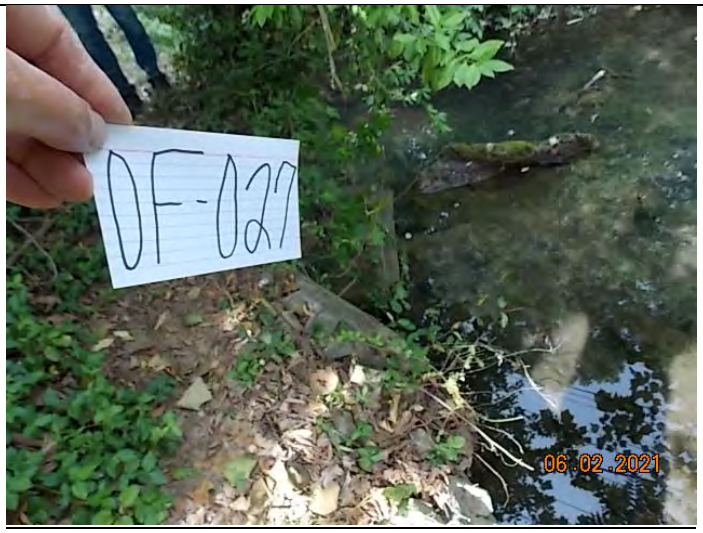
☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☒ **1 - No flow\interior conditions are dry** ☐ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: ___ **inches** __ **feet** Approximate depth of flow: ___ **inches** _____ **feet** Approximate flow rate: ___ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**



Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

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_____

REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/02/21

TIME: 9:24 ☒ **AM** ☐ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-031

MOST RECENT RAIN EVENT ▼

Time Lapse:

☐ < 2 days ☒ > 2 days

Estimated Amount:

☐ < 0.5 inches ☒ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☒ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☐ **Corridor** *(In or adjacent to watercourse)*

☒ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☒ Commercial ☒ Residential ☐ Institutional ☐ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☒ On\In concrete structure

☐ In\Near watercourse ☒ Upland area\away from watercourse ☒ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☒ **1 - No flow\interior conditions are dry** ☐ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: ___ **inches** __ **feet** Approximate depth of flow: ___ **inches** _____ **feet** Approximate flow rate: ____ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

_____

_____

_____

REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/03/21

TIME: 9:45 ☒ **AM** ☐ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-032

MOST RECENT RAIN EVENT ▼

Time Lapse:

☒ < 2 days ☐ > 2 days

Estimated Amount:

☒ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☒ **JA44** *(Swift Creek, Old Town Creek)*

PROXIMITY TO WATERCOURSE ▼

☐ **Corridor** *(In or adjacent to watercourse)*

☒ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☐ Commercial ☒ Residential ☐ Institutional ☐ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☒ Earth\sediment ☐ Rock\rubble ☐ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☐ On\In concrete structure

☐ In\Near watercourse ☒ Upland area\away from watercourse ☒ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

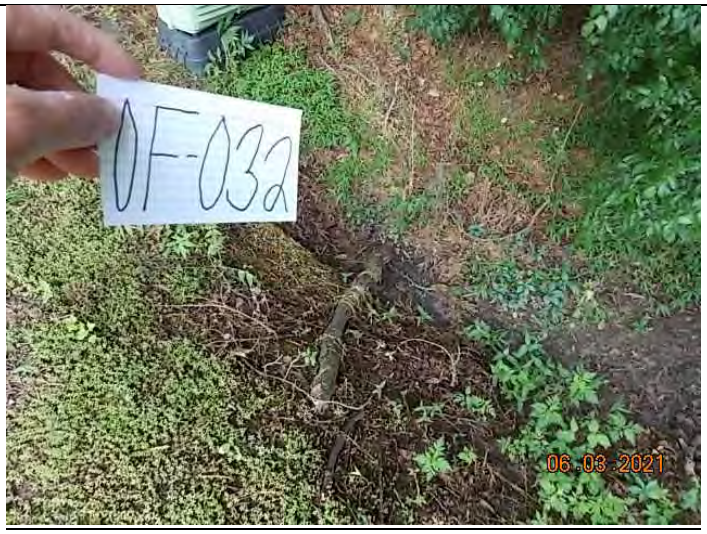
☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☒ **1 - No flow\interior conditions are dry** ☐ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: _____ **inches** _____ **feet** Approximate depth of flow: _____ **inches** _____ **feet** Approximate flow rate: _____ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**



Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

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REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/03/21

TIME: 9:51 ☒ **AM** ☐ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-033

MOST RECENT RAIN EVENT ▼

Time Lapse:

☒ < 2 days ☐ > 2 days

Estimated Amount:

☒ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☒ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch))*

PROXIMITY TO WATERCOURSE ▼

☐ **Corridor** *(In or adjacent to watercourse)*

☒ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☐ Commercial ☒ Residential ☐ Institutional ☐ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☐ On\In concrete structure

☐ In\Near watercourse ☒ Upland area\away from watercourse ☒ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☐ **1 - No flow\interior conditions are dry** ☐ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: _____ **inches** _____ **feet** Approximate depth of flow: _____ **inches** _____ **feet** Approximate flow rate: _____ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

Ponding

_____

_____

REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/07/21

TIME: 9:41 ☒ **AM** ☐ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-036

MOST RECENT RAIN EVENT ▼

Time Lapse:

☐ < 2 days ☒ > 2 days

Estimated Amount:

☒ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☒ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☒ **Corridor** *(In or adjacent to watercourse)*

☐ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☒ Commercial ☒ Residential ☐ Institutional ☐ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☒ On\In concrete structure

☐ In\Near watercourse ☒ Upland area\away from watercourse ☒ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☐ **1 - No flow\interior conditions are dry** ☒ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: __ **inches** __ **feet** Approximate depth of flow: __ **inches** _____ **feet** Approximate flow rate: __ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

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REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/03/21

TIME: 8:53 ☒ **AM** ☐ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-038

MOST RECENT RAIN EVENT ▼

Time Lapse:

☒ < 2 days ☐ > 2 days

Estimated Amount:

☒ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☒ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☒ **Corridor** *(In or adjacent to watercourse)*

☐ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☐ Commercial ☒ Residential ☐ Institutional ☐ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☒ On\In concrete structure

☒ In\Near watercourse ☐ Upland area\away from watercourse ☒ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☐ **1 - No flow\interior conditions are dry** ☒ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: ___ **inches** __ **feet** Approximate depth of flow: ___ **inches** _____ **feet** Approximate flow rate: ___ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

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REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/03/21

TIME: 1:10 ☐ **AM** ☒ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-039

MOST RECENT RAIN EVENT ▼

Time Lapse:

☒ < 2 days ☐ > 2 days

Estimated Amount:

☒ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☐ **JA44** *(Swift Creek, Old Town Creek*

☒ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☒ **Corridor** *(In or adjacent to watercourse)*

☐ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☐ Commercial ☒ Residential ☒ Institutional ☒ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☒ On\In concrete structure

☒ In\Near watercourse ☐ Upland area\away from watercourse ☐ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☐ **None** ☒ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☐ **1 - No flow\interior conditions are dry** ☒ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: ___ **inches** __ **feet** Approximate depth of flow: ___ **inches** _____ **feet** Approximate flow rate: ___ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

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REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/03/21

TIME: 2:03 ☐ **AM** ☒ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-040

MOST RECENT RAIN EVENT ▼

Time Lapse:

☒ < 2 days ☐ > 2 days

Estimated Amount:

☒ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☒ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☒ **Corridor** *(In or adjacent to watercourse)*

☐ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☐ Commercial ☒ Residential ☐ Institutional ☐ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☒ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☐ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☒ On\In concrete structure

☒ In\Near watercourse ☐ Upland area\away from watercourse ☐ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☐ **1 - No flow\interior conditions are dry** ☒ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: __ **inches** __ **feet** Approximate depth of flow: __ **inches** _____ **feet** Approximate flow rate: __ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

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REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/03/21

TIME: 1:58 ☒ **AM** ☐ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-041

MOST RECENT RAIN EVENT ▼

Time Lapse:

☒ < 2 days ☐ > 2 days

Estimated Amount:

☒ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☒ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☒ **Corridor** *(In or adjacent to watercourse)*

☐ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☐ Commercial ☒ Residential ☐ Institutional ☐ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☒ On\In concrete structure

☒ In\Near watercourse ☐ Upland area\away from watercourse ☒ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☐ **None** ☒ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☐ **1 - No flow\interior conditions are dry** ☒ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: ____ **inches** __ **feet** Approximate depth of flow: ____ **inches** _____ **feet** Approximate flow rate: ____ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

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REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/03/21

TIME: 8:35 ☒ **AM** ☐ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-042

MOST RECENT RAIN EVENT ▼

Time Lapse:

☒ < 2 days ☐ > 2 days

Estimated Amount:

☒ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☐ **JA44** *(Swift Creek, Old Town Creek*

☒ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☐ **Corridor** *(In or adjacent to watercourse)*

☒ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☒ Commercial ☒ Residential ☐ Institutional ☒ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☒ On\In concrete structure

☐ In\Near watercourse ☒ Upland area\away from watercourse ☒ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☒ **1 - No flow\interior conditions are dry** ☐ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: _____ **inches** _____ **feet** Approximate depth of flow: _____ **inches** _____ **feet** Approximate flow rate: _____ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

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REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/03/21

TIME: 1:19 ☐ **AM** ☒ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-043

MOST RECENT RAIN EVENT ▼

Time Lapse:

☒ < 2 days ☐ > 2 days

Estimated Amount:

☒ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☒ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☐ **Corridor** *(In or adjacent to watercourse)*

☒ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☐ Commercial ☒ Residential ☐ Institutional ☐ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☒ On\In concrete structure

☐ In\Near watercourse ☒ Upland area\away from watercourse ☒ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☐ **None** ☒ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☐ **1 - No flow\interior conditions are dry** ☒ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: ___ **inches** ___ **feet** Approximate depth of flow: ____ **inches** _____ **feet** Approximate flow rate: ____ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

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REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/03/21

TIME: 9:30 ☒ **AM** ☐ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-044

MOST RECENT RAIN EVENT ▼

Time Lapse:

☒ < 2 days ☐ > 2 days

Estimated Amount:

☒ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☒ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☐ **Corridor** *(In or adjacent to watercourse)*

☒ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☐ Commercial ☒ Residential ☐ Institutional ☒ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☒ On\In concrete structure

☐ In\Near watercourse ☒ Upland area\away from watercourse ☒ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☐ **1 - No flow\interior conditions are dry** ☒ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: ___ **inches** __ **feet** Approximate depth of flow: ___ **inches** _____ **feet** Approximate flow rate: ____ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

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REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/07/21

TIME: 9:32 ☒ **AM** ☐ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-049

MOST RECENT RAIN EVENT ▼

Time Lapse:

☐ < 2 days ☒ > 2 days

Estimated Amount:

☒ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☒ **JA40** *(Appomattox River I and II)*

☐ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☐ **Corridor** *(In or adjacent to watercourse)*

☒ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☐ Commercial ☒ Residential ☐ Institutional ☒ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☒ On\In concrete structure

☐ In\Near watercourse ☒ Upland area\away from watercourse ☒ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☒ **1 - No flow\interior conditions are dry** ☐ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: __ **inches** __ **feet** Approximate depth of flow: __ **inches** _____ **feet** Approximate flow rate: __ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

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REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/03/21

TIME: 9:23 ☒ **AM** ☐ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-051

MOST RECENT RAIN EVENT ▼

Time Lapse:

☒ < 2 days ☐ > 2 days

Estimated Amount:

☒ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☒ **JA44** *(Swift Creek, Old Town Creek)*

PROXIMITY TO WATERCOURSE ▼

☐ **Corridor** *(In or adjacent to watercourse)*

☒ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☐ Commercial ☒ Residential ☒ Institutional ☐ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☒ On\In concrete structure

☐ In\Near watercourse ☒ Upland area\away from watercourse ☒ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☐ **1 - No flow\interior conditions are dry** ☒ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: _____ **inches** _____ **feet** Approximate depth of flow: _____ **inches** _____ **feet** Approximate flow rate: _____ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

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REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/03/21

TIME: 1:25 ☐ **AM** ☒ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-052

MOST RECENT RAIN EVENT ▼

Time Lapse:

☒ < 2 days ☐ > 2 days

Estimated Amount:

☒ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☒ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☒ **Corridor** *(In or adjacent to watercourse)*

☐ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☐ Commercial ☒ Residential ☐ Institutional ☐ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☐ On\In concrete structure

☒ In\Near watercourse ☐ Upland area\away from watercourse ☒ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☐ **1 - No flow\interior conditions are dry** ☒ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: ___ **inches** __ **feet** Approximate depth of flow: ___ **inches** _____ **feet** Approximate flow rate: ___ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

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REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/03/21

TIME: 1:31 ☐ **AM** ☒ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-053

MOST RECENT RAIN EVENT ▼

Time Lapse:

☒ < 2 days ☐ > 2 days

Estimated Amount:

☒ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☒ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☒ **Corridor** *(In or adjacent to watercourse)*

☐ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☐ Commercial ☒ Residential ☐ Institutional ☒ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☐ On\In concrete structure

☒ In\Near watercourse ☐ Upland area\away from watercourse ☒ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☐ **1 - No flow\interior conditions are dry** ☒ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: ___ **inches** __ **feet** Approximate depth of flow: ___ **inches** _____ **feet** Approximate flow rate: ___ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

_____

_____

_____

REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/03/21

TIME: 1:31 ☐ **AM** ☒ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-054

MOST RECENT RAIN EVENT ▼

Time Lapse:

☒ < 2 days ☐ > 2 days

Estimated Amount:

☒ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☒ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☒ **Corridor** *(In or adjacent to watercourse)*

☐ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☐ Commercial ☒ Residential ☐ Institutional ☒ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☒ On\In concrete structure

☒ In\Near watercourse ☐ Upland area\away from watercourse ☐ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☐ **1 - No flow\interior conditions are dry** ☒ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: ___ **inches** __ **feet** Approximate depth of flow: ___ **inches** _____ **feet** Approximate flow rate: ___ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

_____

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_____

REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/03/21

TIME: 1:04 ☐ **AM** ☒ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-055

MOST RECENT RAIN EVENT ▼

Time Lapse:

☐ < 2 days ☒ > 2 days

Estimated Amount:

☒ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☐ **JA44** *(Swift Creek, Old Town Creek*

☒ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☐ **Corridor** *(In or adjacent to watercourse)*

☒ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☐ Commercial ☒ Residential ☐ Institutional ☒ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☐ On\In concrete structure

☐ In\Near watercourse ☒ Upland area\away from watercourse ☒ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

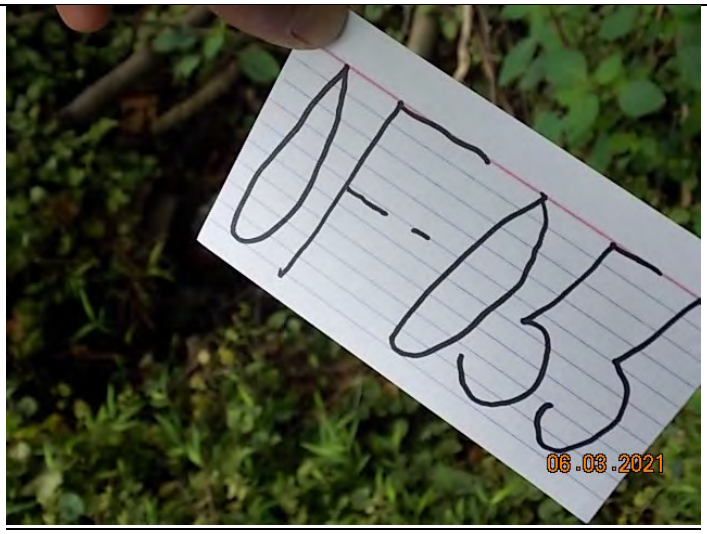
☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☒ **1 - No flow\interior conditions are dry** ☐ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: ___ **inches** __ **feet** Approximate depth of flow: ___ **inches** _____ **feet** Approximate flow rate: ____ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**



Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

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REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/03/21

TIME: 10:32 ☒ **AM** ☐ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-056

MOST RECENT RAIN EVENT ▼

Time Lapse:

☒ < 2 days ☐ > 2 days

Estimated Amount:

☒ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☒ **JA40** *(Appomattox River I and II)*

☐ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☐ **Corridor** *(In or adjacent to watercourse)*

☒ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☐ Commercial ☒ Residential ☐ Institutional ☒ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☐ On\In concrete structure

☐ In\Near watercourse ☒ Upland area\away from watercourse ☒ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

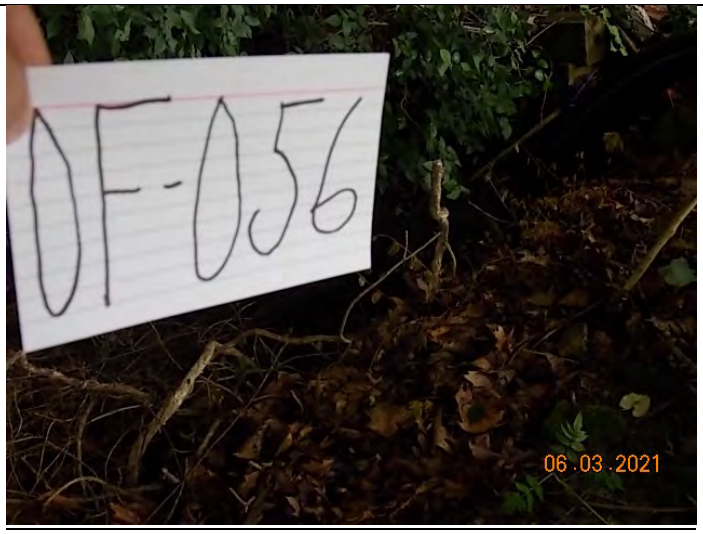
☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☒ **1 - No flow\interior conditions are dry** ☐ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: __ **inches** __ **feet** Approximate depth of flow: __ **inches** _____ **feet** Approximate flow rate: __ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**



Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

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REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/07/21

TIME: 8:52 ☒ **AM** ☐ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-057

MOST RECENT RAIN EVENT ▼

Time Lapse:

☐ < 2 days ☒ > 2 days

Estimated Amount:

☒ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☒ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☐ **Corridor** *(In or adjacent to watercourse)*

☒ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☐ Commercial ☒ Residential ☐ Institutional ☐ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☐ On\In concrete structure

☐ In\Near watercourse ☒ Upland area\away from watercourse ☒ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☐ **1 - No flow\interior conditions are dry** ☒ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: ____ **inches** __ **feet** Approximate depth of flow: ____ **inches** _____ **feet** Approximate flow rate: ____ **feet per second (trickle)**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

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REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/07/21

TIME: 9:07 ☒ **AM** ☐ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-058

MOST RECENT RAIN EVENT ▼

Time Lapse:

☐ < 2 days ☒ > 2 days

Estimated Amount:

☒ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☒ **JA44** *(Swift Creek, Old Town Creek)*

PROXIMITY TO WATERCOURSE ▼

☐ **Corridor** *(In or adjacent to watercourse)*

☒ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☐ Commercial ☒ Residential ☐ Institutional ☐ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☒ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☐ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☐ On\In concrete structure

☐ In\Near watercourse ☒ Upland area\away from watercourse ☒ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☒ **1 - No flow\interior conditions are dry** ☐ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: _____ **inches** _____ **feet** Approximate depth of flow: _____ **inches** _____ **feet** Approximate flow rate: _____ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

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REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/03/21

TIME: 2:15 ☐ **AM** ☒ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-060

MOST RECENT RAIN EVENT ▼

Time Lapse:

☒ < 2 days ☐ > 2 days

Estimated Amount:

☒ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☒ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☒ **Corridor** *(In or adjacent to watercourse)*

☐ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☒ Commercial ☒ Residential ☐ Institutional ☐ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☒ On\In concrete structure

☒ In\Near watercourse ☐ Upland area\away from watercourse ☐ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☐ **1 - No flow\interior conditions are dry** ☒ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: ___ **inches** __ **feet** Approximate depth of flow: ___ **inches** _____ **feet** Approximate flow rate: ___ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

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REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/03/21

TIME: 10:39 ☒ **AM** ☐ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-061

MOST RECENT RAIN EVENT ▼

Time Lapse:

☒ < 2 days ☐ > 2 days

Estimated Amount:

☒ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☒ **JA40** *(Appomattox River I and II)*

☐ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☒ **Corridor** *(In or adjacent to watercourse)*

☐ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☐ Commercial ☒ Residential ☐ Institutional ☐ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☒ On\In concrete structure

☒ In\Near watercourse ☐ Upland area\away from watercourse ☒ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☐ **1 - No flow\interior conditions are dry** ☒ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: __ **inches** __ **feet** Approximate depth of flow: __ **inches** _____ **feet** Approximate flow rate: __ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

_____

_____

_____

REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/07/21

TIME: 8:41 ☒ **AM** ☐ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-066

MOST RECENT RAIN EVENT ▼

Time Lapse:

☐ < 2 days ☒ > 2 days

Estimated Amount:

☒ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☒ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☒ **Corridor** *(In or adjacent to watercourse)*

☐ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☐ Commercial ☒ Residential ☐ Institutional ☒ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☒ On\In concrete structure

☒ In\Near watercourse ☐ Upland area\away from watercourse ☒ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☐ **1 - No flow\interior conditions are dry** ☒ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: ___ **inches** __ **feet** Approximate depth of flow: ___ **inches** _____ **feet** Approximate flow rate: ____ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

_____

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REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/07/21

TIME: 9:08 AM ☒ **AM** ☐ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-071

MOST RECENT RAIN EVENT ▼

Time Lapse:

☐ < 2 days ☒ > 2 days

Estimated Amount:

☒ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☒ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☐ **Corridor** *(In or adjacent to watercourse)*

☒ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☐ Commercial ☒ Residential ☐ Institutional ☐ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☐ On\In concrete structure

☐ In\Near watercourse ☒ Upland area\away from watercourse ☒ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☐ **1 - No flow\interior conditions are dry** ☒ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: ___ **inches** __ **feet** Approximate depth of flow: ___ **inches** _____ **feet** Approximate flow rate: ____ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

_____

_____

_____

REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/07/21

TIME: 9:01 ☒ **AM** ☐ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-073

MOST RECENT RAIN EVENT ▼

Time Lapse:

☐ < 2 days ☒ > 2 days

Estimated Amount:

☒ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☒ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☐ **Corridor** *(In or adjacent to watercourse)*

☒ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☐ Commercial ☒ Residential ☐ Institutional ☐ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☐ On\In concrete structure

☐ In\Near watercourse ☒ Upland area\away from watercourse ☒ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☐ **1 - No flow\interior conditions are dry** ☒ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: ___ **inches** __ **feet** Approximate depth of flow: ____ **inches** _____ **feet** Approximate flow rate: ____ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

Ponding

_____

_____

REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/03/21

TIME: 2:27 ☐ **AM** ☒ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-075

MOST RECENT RAIN EVENT ▼

Time Lapse:

☒ < 2 days ☐ > 2 days

Estimated Amount:

☒ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☒ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☒ **Corridor** *(In or adjacent to watercourse)*

☐ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☐ Commercial ☒ Residential ☐ Institutional ☒ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☐ On\In concrete structure

☒ In\Near watercourse ☐ Upland area\away from watercourse ☒ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☒ **1 - No flow\interior conditions are dry** ☐ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: ___ **inches** __ **feet** Approximate depth of flow: ___ **inches** _____ **feet** Approximate flow rate: ___ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

_____

_____

_____

REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/03/21

TIME: 2:21 ☐ **AM** ☒ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-076

MOST RECENT RAIN EVENT ▼

Time Lapse:

☒ < 2 days ☐ > 2 days

Estimated Amount:

☒ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☒ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☐ **Corridor** *(In or adjacent to watercourse)*

☒ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☐ Commercial ☒ Residential ☐ Institutional ☐ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☒ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☐ On\In concrete structure

☒ In\Near watercourse ☐ Upland area\away from watercourse ☒ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

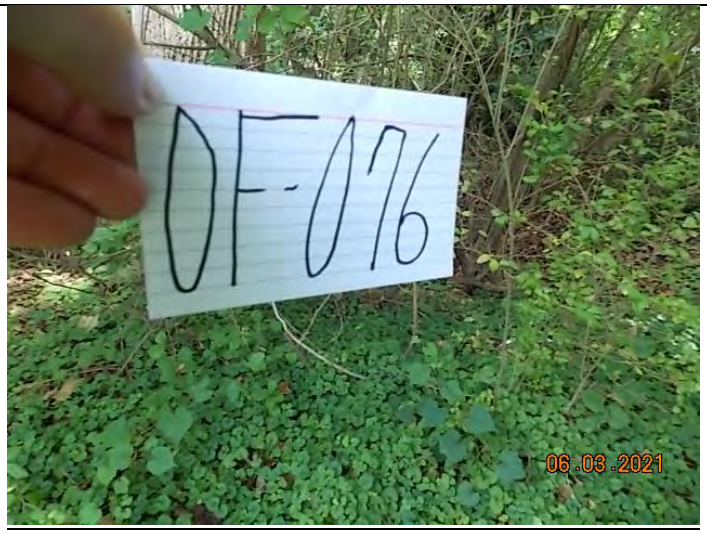
☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☒ **1 - No flow\interior conditions are dry** ☐ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: ___ **inches** __ **feet** Approximate depth of flow: ____ **inches** _____ **feet** Approximate flow rate: ____ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**



Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

_____

_____

_____

REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/02/21

TIME: 10:47 ☒ **AM** ☐ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-080

MOST RECENT RAIN EVENT ▼

Time Lapse:

☐ < 2 days ☒ > 2 days

Estimated Amount:

☐ < 0.5 inches ☒ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☒ **JA40** *(Appomattox River I and II)*

☐ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☐ **Corridor** *(In or adjacent to watercourse)*

☒ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☒ Commercial ☒ Residential ☐ Institutional ☒ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☐ On\In concrete structure

☐ In\Near watercourse ☒ Upland area\away from watercourse ☒ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☒ **1 - No flow\interior conditions are dry** ☐ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: _____ **inches** _____ **feet** Approximate depth of flow: _____ **inches** _____ **feet** Approximate flow rate: _____ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

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REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/02/21

TIME: 10:50 ☒ **AM** ☐ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-081

MOST RECENT RAIN EVENT ▼

Time Lapse:

☐ < 2 days ☒ > 2 days

Estimated Amount:

☐ < 0.5 inches ☒ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☒ **JA40** *(Appomattox River I and II)*

☐ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☐ **Corridor** *(In or adjacent to watercourse)*

☒ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☒ Commercial ☒ Residential ☐ Institutional ☒ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☐ On\In concrete structure

☐ In\Near watercourse ☒ Upland area\away from watercourse ☒ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:** _____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☒ **1 - No flow\interior conditions are dry** ☐ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: _____ **inches** _____ **feet** Approximate depth of flow: _____ **inches** _____ **feet** Approximate flow rate: _____ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

Ponding due to silt buildup.

REPORTER SIGNATURE: Jeremy D Moore

DATE: 06/03/21

TIME: 8:25 ☒ **AM** ☐ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-091

MOST RECENT RAIN EVENT ▼

Time Lapse:

☒ < 2 days ☐ > 2 days

Estimated Amount:

☒ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☒ **JA40** *(Appomattox River I and II)*

☐ **JA44** *(Swift Creek, Old Town Creek)*

PROXIMITY TO WATERCOURSE ▼

☐ **Corridor** *(In or adjacent to watercourse)*

☒ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☐ Commercial ☒ Residential ☐ Institutional ☐ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☒ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☒ No obstruction

PIPE SITUATION ▼

☐ Stabilized embankment ☒ Eroded embankment ☐ On\In concrete structure

☐ In\Near watercourse ☒ Upland area\away from watercourse ☒ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:**

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☐ **1 - No flow\interior conditions are dry** ☒ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: _____ **inches** _____ **feet** Approximate depth of flow: _____ **inches** _____ **feet** Approximate flow rate: _____ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

_____.

_____

_____

REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/03/21

TIME: 10:05 ☒ **AM** ☐ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-092

MOST RECENT RAIN EVENT ▼

Time Lapse:

☒ < 2 days ☐ > 2 days

Estimated Amount:

☒ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☒ **JA40** *(Appomattox River I and II)*

☐ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☐ **Corridor** *(In or adjacent to watercourse)*

☒ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☐ Commercial ☒ Residential ☐ Institutional ☐ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☒ Roots\brush ☐ Earth\sediment ☐ Rock\rubble No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☒ On\In concrete structure

☐ In\Near watercourse ☒ Upland area\away from watercourse ☒ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:**

_____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:**

_____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:**

_____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☐ **1 - No flow\interior conditions are dry** ☒ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: __ **inches** __ **feet** Approximate depth of flow: __ **inches** _____ **feet** Approximate flow rate: __ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

_____

_____

_____

REPORTER SIGNATURE: Jeremy D Moore _____

DATE: 06/03/21

TIME: 10:47 ☒ **AM** ☐ **PM**

FILED BY: Jeremy Moore

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: OF-094

MOST RECENT RAIN EVENT ▼

Time Lapse:

☒ < 2 days ☐ > 2 days

Estimated Amount:

☒ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☒ **JA40** *(Appomattox River I and II)*

☐ **JA44** *(Swift Creek, Old Town Creek)*

PROXIMITY TO WATERCOURSE ▼

☐ **Corridor** *(In or adjacent to watercourse)*

☒ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☐ Commercial ☒ Residential ☐ Institutional ☒ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☒ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☐ No obstruction

PIPE SITUATION ▼

☒ Stabilized embankment ☐ Eroded embankment ☒ On\In concrete structure

☐ In\Near watercourse ☒ Upland area\away from watercourse ☐ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☒ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:** _____

APPEARANCE

☒ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:**

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☒ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:** _____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☐ **1 - No flow\interior conditions are dry** ☒ **2 - No visible flow\interior conditions are moist or damp** ☐ **3 - Visible flow** **Flow Estimates:** Width of flow surface: _____ **inches** _____ **feet** Approximate depth of flow: ___ **inches** __ **feet** Approximate flow rate: _____ **feet per second**

- REPORT SUMMARY CHARACTERIZATION -

☒ **Unlikely Illicit Discharge** ☐ **Suspected Illicit Discharge** ☐ **Obvious Illicit Discharge**

Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

_____

_____

_____

REPORTER SIGNATURE: Jeremy D Moore _____

The Reporting cycle for this MS4 permit is from July 1, 2020 to June 30, 2021

Illicit Discharge Incident Reference Guide				
Reference Number	Location	Description	Incident Date	Date Closed
00001	Sherwood Avenue	Float failute at Sherwood Pump Station causing small leakage from manhole	10/6/2020	10/6/2020
00002	100 Block of Highland Avenue	Broken sewer line in 1100 block of Jett Ave. Water seeping out of manhole in 100 block of Highland Ave.	11/4/2020	11/4/2020
00003	3213 Longhorn Drive	Broken sewer line	2/19/2021	2/20/2021
00004	131 Washington Avenue	Sewer line back up	4/4/2021	4/5/2021

2020 - 2021 Monthly Report of Land Disturbance Activities for the City of Colonial Heights

Month	Project Title	Project Address	Owner Applicant	Owner/Applicant Address	Owner/Applicant Contact Number	Date Issued	Total Disturbed
September	Flagstop Carwash	610 Boulevard	Jamie Nester	11031 Iron Bridge Rd Chester, VA 23831	(804) 768 - 1674	9/8/20	1.10 Acres
January	Temple Ave. Commercial	Intersection of Temple Ave and Hamilton Ave	Daniel Hargett of Rebkee Partners Temple, LLC	2800 Patterson Ave, Suite 200 Richmond, VA 23803	(804) 419 - 0740	1/27/21	5.75 Acres
February	Hroudah Pump Station	100 Wilkshire Ct	City of Colonial Heights	201 James Ave Colonial Heights, VA 23834	(804) 520 - 8708	2/1/21	0.25 Acres
March	Briarcliffe Section 4		H.L. Henshaw Construction	1011 Amelia St Petersburg, VA 23803	(804) 861 - 0808	3/12/21	4.5 Acres
May	Mission BBQ	1020 Temple Ave	Faison-Colonial Retail Associates Limited Partnership	1011 East Morehead St., Ste 150 Charlotte, NC 28204	(704) 972 - 2500	5/4/21	0.96 Acres

TR 55 Worksheet 2: Runoff Curve Number and Runoff

Project: Overall Discharge - Colonial Heights Designed By: _____ Date: _____

Location: City of Colonial Heights Checked: _____ Date: _____

Check one: ☑ Present ☐ Developed

1. Runoff curve number (CN)

Soil name and hydrologic group (Appendix A)	Cover description (Cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN 1/			Area ☒ acres ☐ mi² ☐ %	Product of CN x area
		Table 2-2	Fig. 2-3	Fig. 2-4		
	33% Impervious		73		4,800.0	350,400.0
Totals =					4,800.0	350,400.0

1/ Use only one CN source per line.

CN (weighted) = $\frac{\text{total product}}{\text{total area}} = \frac{350{,}400.0}{4{,}800.0} =$ 73 Use CN = 73

2. Runoff

	Storm #1	Storm #2	Storm #3
Frequency ..... years	2	10	100
Rainfall, P (24 hour) ..... in.	3.5	5.5	8.0
Runoff, Q ..... in.	1.2	2.7	4.8

(Use P and CN with Table 2-1, Figure 2-1, or equations 2-3 and 2-4.)

U.S. Department of Agriculture
Natural Resources Conservation Service

FL-ENG-21B
06/04

TR 55 Worksheet 3: Time of Concentration (T_c) or Travel Time (T_t)

Project: Overall Discharge - Colonial Heights Designed By: _____ Date: _____

Location: City of Colonial Heights Checked By: _____ Date: _____

Check one: ✓ Present Developed

Check one: T_c T_t through subarea _____

NOTES: Space for as many as two segments per flow type can be used for each worksheet. Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to T_c only) Segment ID

1. Surface description (Table 3-1)	33% Impervious			
2. Manning's roughness coeff., n (Table 3-1)	0.01			
3. Flow length, L (total L ≤ 100 ft) ft	27,444			
4. Two-year 24-hour rainfall, P_2 in	3.5			
5. Land slope, s ft/ft	0.010			
6. $T_t = \frac{0.007\,(nL)^{0.8}}{P_2^{0.5}\, s^{0.4}}$ Compute T_t hr	2.27	+		= 2.27

Shallow Concetrated Flow Segment ID

7. Surface description (paved or unpaved)				
8. Flow length, L ft				
9. Watercourse slope, s ft/ft				
10. Average velocity, V (Figure 3-1) ft/s				
11. $T_t = \frac{L}{3600\, V}$ Compute T_t hr		+		=

Channel Flow Segment ID

12. Cross sectional flow area, a ft^2				
13. Wetted perimeter, P_w ft				
14. Hydraulic radius, $r = \frac{a}{P_w}$ Compute r ft				
15. Channel Slope, s ft/ft				
16. Manning's Roughness Coeff., n				
17. $V = \frac{1.49\, r^{2/3}\, s^{1/2}}{n}$ Compute V ft/s				
18. Flow length, L ft				
19. $T_t = \frac{L}{3600\, V}$ Compute T_t hr		+		=

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19 hr 2.27

Tr 55 Worksheet 4: Graphical Peak Discharge Method

Project: Overall Discharge - Colonial Heights Designed By: _____ Date: _____

Location: Colonial Heights Checked By: _____ Date: _____

Check one: ____ Present ____ Developed

1. Data:

   Drainage area ..... A_m = 7.40 mi^2 (acres/640)

   Runoff curve number .... CN = 73 (From Worksheet 2)

   Time of concentration ..... T_c = 2.20 hr (From Worksheet 3)

   Rainfall distribution type ..... = II (II, III, DMVIII)

   Pond and swamp areas spread throughout watershed ..... = _____ percent of A_m (_____ acres or mi^2 covered)

		Storm #1	Storm #2	Storm #3
2. Frequency.....	yr	2	10	100
3. Rainfall, P (24-hour).....	in	3.5	5.5	8.0
4. Initial abstraction, I_a..... (Use CN with Table 4-1.)	in	0.740	0.740	0.740
5. Compute I_a/P.....		0.21	0.13	0.09
6. Unit peak discharge, q_u..... (Use T_c and I_a/P with exhibit 4- II)	csm/in	200	220	240
7. Runoff, Q ..... (From Worksheet 2)	in	1.10	2.60	4.60
8. Pond and swamp adjustment factor, F_p..... (Use percent pond and swamp area with Table 4-2. Factor is 1.0 for zero percent pond and swamp area.)	in	1.0	1.0	1.0
9. Peak discharge, q_p..... (Where $q_p = q_u A_m Q F_p$)	cfs	1,628	4,233	8,170

The Simple Method to Calculate Urban Stormwater Loads

Introduction

The Simple Method estimates stormwater runoff pollutant loads for urban areas. The technique requires a modest amount of information, including the sub-watershed drainage area and impervious cover, stormwater runoff pollutant concentrations, and annual precipitation. With the Simple Method, the investigator can either break up land use into specific areas, such as residential, commercial, industrial, and roadway and calculate annual pollutant loads for each type of land, or utilize more generalized pollutant values for land uses such as new suburban areas, older urban areas, central business districts, and highways.

Stormwater pollutant concentrations can be estimated from local or regional data, or from national data sources. Tables 1 through 3 summarize pollutant concentration data for Total Suspended Solids (Table 1), Total Phosphorous (Table 2), and Total Nitrogen (Table 3) for residential, commercial, industrial, and roadway land uses, and identify default values. Table 4 identifies pollutant concentration values for Phosphorus, Nitrogen, COD, BOD, and some metals for more generalized land use categories. In general, the selected data sources are nationwide in scope, or are summaries of several regional studies. Some studies included in these data did not characterize stormwater concentrations for specific land uses, and instead reported a concentration for "urban runoff." In these instances, the data are reported as the same concentration for each land use in Tables 1 through 3.

Fecal coliform is more difficult to characterize than other pollutants. Data are extremely variable, even during repeated sampling at a single location. Because of this variability, it is difficult to establish different concentrations for each land use. Although some source monitoring data exists (Steuer *et al.*, 1997; Bannerman *et al.*, 1993), the simple method assumes a median urban runoff default value, derived from NURP data (Pitt, 1998), of 20,000 MPN/100ml. For more information on sources and pathways of bacteria in urban runoff, consult Schueler (1999).

The Simple Method estimates pollutant loads for chemical constituents as a product of annual runoff volume and pollutant concentration, as:

$$L = 0.226 * R * C * A$$

Where: L = Annual load (lbs)
R = Annual runoff (inches)
C = Pollutant concentration (mg/l)
A = Area (acres)
0.226 = Unit conversion factor

For bacteria, the equation is slightly different, to account for the differences in units. The modified equation for bacteria is:

$$L = 1.03 * 10^{-3} * R * C * A$$

Where: L = Annual load (Billion Colonies)
R = Annual runoff (inches)
C = Bacteria concentration (#/100 ml)
A = Area (acres)
$1.03 * 10^{-3}$ = Unit conversion factor

Annual Runoff

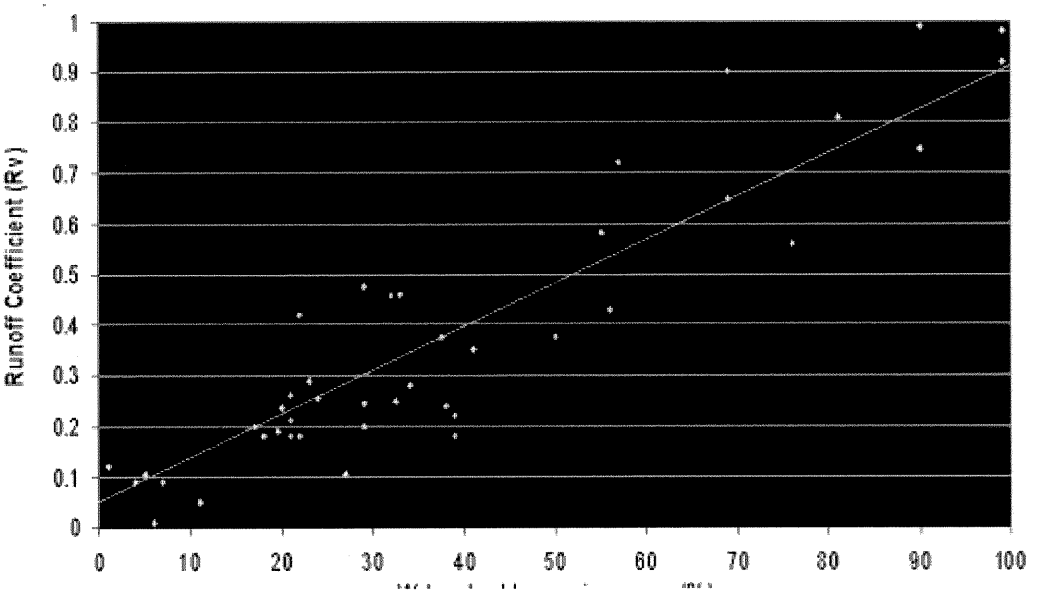
The Simple Method calculates annual runoff as a product of annual runoff volume, and a runoff coefficient (Rv). Runoff volume is calculated as:

$$R = P * P_j * Rv$$

Where: R = Annual runoff (inches)
P = Annual rainfall (inches)
P_j = Fraction of annual rainfall events that produce runoff (usually 0.9)
Rv = Runoff coefficient

In the Simple Method, the runoff coefficient is calculated based on impervious cover in the sub-watershed. This relationship is shown in Figure 1. Although there is some scatter in the data, watershed imperviousness does appear to be a reasonable predictor of Rv.

Relationship Between Watershed Imperviousness (I)
and the Storm Runoff Coefficient (Rv)
(Source: Schueler, 1987)



The following equation represents the best fit line for the dataset (N=47, R^2=0.71).

Rv=0.05+0.9Ia

Where: Ia = Impervious fraction

Impervious Cover Data

The model uses different impervious cover values for separate land uses within a sub-watershed. Representative impervious cover data, along with Model default values, are presented in Table 5. A study is currently being conducted by the Center for Watershed Protection under a grant from the U.S. Environmental Protection Agency to update impervious cover estimates for these and other land uses. The results of this study will be available by 2001. In addition, some jurisdictions may have detailed impervious cover information if they maintain a detailed land use/land cover GIS database.

Limitations of the Simple Method

The Simple Method should provide reasonable estimates of changes in pollutant export resulting from urban development activities. However, several caveats should be kept in mind when applying this method.

The Simple Method is most appropriate for assessing and comparing the relative stormflow pollutant load changes of different land use and stormwater management scenarios. The Simple Method provides estimates of storm pollutant export that are probably close to the "true" but unknown value for a development site, catchment, or sub-watershed. However, it is very important not to over emphasis the precision of the results obtained. For example, it would be inappropriate to use the Simple Method to evaluate relatively similar development scenarios (e.g., 34.3% versus 36.9% Impervious cover). The simple method provides a general planning estimate of likely storm pollutant export from areas at the scale of a development site, catchment or sub-watershed. More sophisticated modeling may be needed to analyze larger and more complex watersheds.

In addition, the Simple Method only estimates pollutant loads generated during storm events. It does not consider pollutants associated with baseflow volume. Typically, baseflow is negligible or non-existent at the scale of a single development site, and can be safely neglected. However, catchments and sub-watersheds do generate baseflow volume. Pollutant loads in baseflow are generally low and can seldom be distinguished from natural background levels (NVPDC, 1979). Consequently, baseflow pollutant loads normally constitute only a small fraction of the total pollutant load delivered from an urban area. Nevertheless, it is important to remember that the load estimates refer only to storm event derived loads and should not be confused with the total pollutant load from an area. This is particularly important when the development density of an area is low. For example, in a large low density residential sub-watershed (Imp. Cover < 5%), as much as 75% of the annual runoff volume may occur as baseflow. In such a case, the annual baseflow nutrient load may be equivalent to the annual stormflow nutrient load.

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Annual Runoff:

R = Annual Runoff (inches)
P = Annual Rainfall (inches)
P_j = Fraction of annual rainfall events that produce runoff (usually 0.9)
R_v = Runoff Coefficient

P	P_j	R_v
45.26	0.90	0.32

R = 13.03

Bacteria Concentration: 20,000 MPN / 100 ml.

L = Annual Load (Billion Colonies)
R = Annual Runoff (inches)
C = Bacteria Concentration (#/100ml)
A = Area (acres)

R	C	A
13.03	200.00	4,800.00

L = 12,888.89

City of Colonial Heights
Stormwater Volume and Pollutant Load Estimation for Watershed with an Identified WLA

Discharge Volumes and Pollution Loads have all been estimated using Simple Method Calculations

Impervious Area (%)	33	From CDM Stormwater Report 2008
Annual Rainfall (in)	43	From NOAA National Climatic Data

Watershed with WLA	Drainage Area (ac)	Discharge Volume (ft3)	E.Coli (cfu/yr)
Appomattox River (NT)	618	3.18E+07	3.97E+07
Appomattox River (Tidal)	2318	1.19E+08	1.46E+08
Swift Creek	1946	9.99E+07	1.04E+08

Developing a Stormwater-friendly Lawn

How >

Many people think maintaining a perfectly manicured landscape or green and plush yard involves harsh chemicals, plenty of pesticides and an endless amount of work, when actually, something of the opposite is true. While maintaining a picture-perfect landscape does require hard work and time, home-owners can save significant amounts of money, time and toil by utilizing a few natural products and taking some natural factors into account in their landscape planning. With a combination of organic products and some advanced planning, lawns and landscapes can be plush and hearty, while at the same time contributing far fewer pollutants to our surrounding waters.

Getting started >

Getting started is easy. There are many great books and guides available that detail all the methods to get you started and the materials you'll need. Your local book retailer can point you in the right direction, but the links below can help as well:

http://chlibrary.colonial-heights.com/cataloging/servlet/handlebasicsearchform.do
www.organiclandscape.org/en/Books_27.html
http://library.co.chesterfield.va.us/search/w?SEARCH=organic+gardening
www.epa.gov/npdes/pubs/waterefficiency.pdf

A first step >

One of the first things to do is get your lawn's soil sampled. Start by collecting a sample of your soil - a garden shovel scoop at least 4" deep without rocks - and take it to a local lawn and garden store. Many home and garden stores have do-it-yourself tests for sale, and some extension offices offer services that test your sample at a lab. Testing your soil will help you know the exact types and quantities of fertilizers your lawn needs rather than buying the kinds and amounts of nutrients your lawn may already have an abundance of. The key to successful fertilization is getting the right mixture of quality and quantity. Learn more about getting a soil test:

http://www.ext.vt.edu/pubs/compost/452-129/452-129.html
www.soiltest.vt.edu/soiltest.html

Fertilizing >

Once you've gotten the results of your soil test you'll know what nutrients your lawn needs or has an excess of. Finding natural substitutes for the traditional synthetic fertilizers is much easier than you might think, and these natural fertilizers are often more effective and less damaging than synthetics. Manures, dried blood, feather and bone meal, for example, can be used to add nitrogen to your lawn, and are less likely to burn turfgrass or cause rapid growth spurts due to their slow release properties. Because of this, these natural fertilizers may provide longer lasting benefit to your lawn and are much less apt than are water-soluble fertilizers to leach from the soil, thus reducing the ground and surface-water contamination commonly seen with synthetic fertilizers.

Important to understanding what natural fertilizers your lawn will need is knowing what levels of which nutrients are contained in any given compound or fertilizer. One thing that will help you determine this is NPK numbers. The make-up of fertilizers is determined by the three numbers on their packaging - 10-10-10, for example - each of which represent the percentage of nitrogen (N), phosphorous (P) or potassium (K) the compound contains. Each of these nutrients is important for proper plant growth

and development. Nitrogen helps plant foliage grow strong. Phosphorous helps roots and flowers grow and develop. Potassium (Potash) is important for overall plant health.

While many types of natural compounds can be used as fertilizers, some common fertilizing compounds are:

Bat Guano
Bat guano is the ultimate 100 percent natural fertilizer. Farmers and gardeners have used bat guano as a fertilizer for hundreds of years. Bat guano has a high humus content and works great as a soil builder and fertilizer. It is rated as a 10-3-1 fertilizer.

Fish Meal
Fish meal is a natural organic fertilizer that was traditionally used by gardeners and farmers before the advent of inorganic fertilizers. It contains important trace elements that make it a complete plant food. Rated as a 10-5-0 organic fertilizer, fish meal works quickly and provides plenty of phosphorous and organic nitrogen.

Kelp
Kelp meal fertilizer is made from brown seaweed harvested from ocean waters. The dried kelp maintains a high content of plant growth hormones, essential minerals and organic material. An added benefit is that kelp meal provides a slow, sustained release of nutrients, and works great for flowers, trees, and your lawn.

Garret Juice
Garret Juice, a highly effective liquid organic fertilizer mix, can be purchased ready-made in exact proportions or can be made at home. It contains compost tea, molasses, vinegar and seaweed and works as a foliar spray for all plants, ornamentals and food crops, or can be added directly to the soil. It works great on potted plants as well.

Kelp Lawn Starter
Organic kelp fertilizer is made from giant sea kelp and is specifically designed to help stimulate turf root growth, important for newly seeded lawns. It will also give your established lawn a quick boost, and as kelp is a slow release organic fertilizer, will work over time to keep your grass growing strong .

Organic Liquid Lawn Fertilizer
For a green, lush and chemical free yard, give your grass a dose of organic liquid lawn fertilizer. It is a great source of macronutrients, micronutrients, minerals, amino acids and peptides and has a NPK of 2-3-1. With this organic product the nutrients actually remain as solid amino acids in the soil, allowing for a slow release of nutrients that are absorbed thoroughly through the roots, minimizing waste. Your plants will absorb about 97 percent of the nutrients from this fertilizer, compared to the 20 percent which is more typical of chemical fertilizers.

Horticultural Cornmeal
Horticultural cornmeal helps to strengthen beneficial soil fungi. These beneficial soil organisms will help fight off the harmful fungi that can attack your plants, which is especially important for vegetable crops that are often susceptible to fungal diseases. Horticultural cornmeal also helps build up the quality of the soil, which will benefit all the plants in your garden, from grass to tomatoes. It can also be used it to safely remove algae from ponds and water features.

Garden Molasses
Garden molasses stimulates soil microorganisms and is a perfect compliment to organic fertilizers. It works as a foliar treatment when applied directly to the leaves of your plants, providing your plants trace minerals such as sulfur, potash, and iron.

For more information on types of organic fertilizers and the nutrients each provide, visit:

www.cmg.colostate.edu/gardennotes/234.pdf
www.basic-info-4-organic-fertilizers.com/organicfertilizers.html

Healthy maintenance >

Using organic fertilizers and soil amendments isn't the only thing that home-owners and gardeners can do to minimize their lawns' impact on Colonial Heights waters. There are several practices that can be obeyed to help your lawn naturally fight off disease, combat the effects of summer heat and naturally support itself. One of the easiest things to do is leave your grass clippings on the lawn as opposed to bagging or collecting them. Doing this will keep the nutrients that have already been absorbed by the existing grass' blades on the lawn, thus continuing to fertilize the turf and helping to

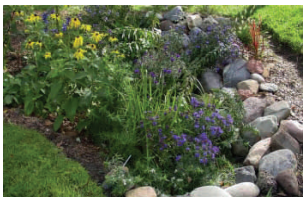
lessen the frequency of re-fertilization. In fact, one 1996 study suggests that mulching grass clippings into the lawn can, in some cases, eliminate the need of re-fertilization altogether. One common source of fertilizer runoff is over-watering. To prevent this, water at a rate of no more than 1/2 an inch per hour. Set several cans within your sprinkler's range and check how much water they collect every 15 minutes and adjust your sprinkler accordingly. Watering in the early morning, as well, is best. Plants and lawns allowed to stay wet overnight are more susceptible to disease. Keeping your lawn mowed at a regular height also acts as a natural defense. When mowing, make it a point to cut no more than 1/3 of the blade length, and remember to cut at a higher level than you might be used to. Increasing your mowing height to between 3 and 3 and one-half inches helps your lawn hold moisture and keeps the soil temperature cooler than it would be with shorter cut grass.

Building supporting landscape features >

All of us enjoy those perfectly manicured landscape features that accent the lawns we work so hard on. In planning these features and selecting the right foliage to plant them with, we can utilize designs that maximize our lawn's ability to sustain itself without unnecessary work and chemicals.

rain gardens >

Rain gardens are a great way to both accent and utilize those difficult or otherwise unusable spaces in the yard. Built essentially in the form of a slight depression filled with native plants, rain gardens can optimize low spots in your yard where water ponds. As another option, they can be placed at the base of slopes where water runoff from regularly fertilized turfs will feed the more nutrient-needy plant species that, in other areas of the yard, require more work. Rain gardens are often planted with bird, bee, and butterfly attracting species, and can really be an eye-catching addition to any landscape.



For plans on choosing and building the right rain garden for your landscape, visit:

www.dof.virginia.gov/mgt/resources/pub-Rain-Garden-Tech-Guide_2008-05.pdf
www.raingardennetwork.com/build.htm
www.epa.gov/nps/toolbox/other/cwc_**raingarden**brochure.pdf
www.enterprise.mtu.edu/att/powerpoints/**raingardens**.ppt

utilizing the lay of your land >

Just as you would place a rain garden in a naturally low lying area, you can design your landscape areas to conserve water and maximize your fertilization applications. Many of the brightly colored and flowering species we all enjoy planting in the spring and summer require more fertilization than some of our native and less colorful species. Lilies and daylilies are popular selections, thriving in full sun to partial shade. Though they require adequate drainage and mulch to keep their roots cool, a down-slope area of your yard that borders frequently fertilized turf may be perfect for these, as they prefer soils high in organic matter. Iris, another favorite that prefer partial shade and well-drained soil, demand acidic soils amended with organic matter. Due to this they make attractive bed borders and color-fills for low spots. Dahlias, as well, thrive in full sun or partial shade and prefer moist, well-drained soil. Gladiolus summer bulbs thrive in full sun locations with moist soil that is well drained and has good air circulation. Cannas love the hot summer, growing well in full sun but needing rich soil and a good moisture supply. Because proper soil drainage is important for all these species to prevent bacterial rot, they all thrive in soils rich with organic matter and they all require concentrated nutrient levels, beds on down-slope areas or at well-drained bases of slopes may be perfect places to feature colorful plants like these. These 'border' or 'slope' beds will maximize your lawn's natural drainage while capturing the lawn's fertilizer runoff.

Learn more about sustainable landscaping at:

www.ext.vt.edu/pubs/envirohort/vagardlist.html

Did you know?

...there are an estimated 25 to 30 million acres of turf lawn in the U.S.

...the average acre of maintained lawn receives roughly seven pounds of pesticides per year

...if lawns were classified as a crop, they would rank as the fifth largest crop in the nation

...over-doing lawn fertilizer causes plant roots to dehydrate, much like over-salting our food does to us

Using your plants for more than aesthetics >

Any landscape design requires planning. In much the same way that plants can be placed in areas where they utilize fertilizer and water runoff, landscape features can be built in a manner that makes plants as beneficial as they are attractive. With the aid of good resources and some preliminary landscape planning you can choose plants and arrangement patterns that help minimize your need for things like pesticides. Many plants repel certain types of insects due simply to their natural characteristics and the insects' aversion to them. Utilizing a method often referred to as companion planting, you can group certain kinds of plants, or surround insect-susceptible plants with insect repelling plants, to act as a natural insect repellant. Chrysanthemums and dahlias, for example, kill parasitic root nematodes (*tiny roundworms*). Daisies attract beneficial insects like the tiny and non-stinging parasitic wasp, which preys on pests like aphids, flies, beetles and caterpillars. Geraniums, in addition to herbs like angelica and tansy, attract ladybugs which feed aggressively on pests like aphids, mealybugs and spider mites. Marigolds, as well, ward off parasitic nematodes and certain types of beetles. Mint, which makes a good controlled accent plant, repels ants and some types of moths. It also helps to control rodents, flea beetles, and aphids. Citronella grass, as its name might indicate, deters mosquitoes, one of our peskiest backyard foes. These annual grasses can grow quite large, but can help alleviate some of your need for chemical mosquito repellants. Petunias repel pesky leaf-hoppers and several types of beetles. Nasturtium, a late-blooming flower, will repel the whitefly. When planning your next landscape or new lawn feature, take a look at the following resources for some great ideas on getting started companion planning.

Parasitic wasp

www.markham.ca/NR/rdonlyres/8937D562-A0B4-405E-A21C-CD01FC13481D/0/ens_**insects**.pdf
www.homeandgardensite.com/companion_planting.htm
http://attra.ncat.org/attra-pub/complant.html

Pesticides >

Fertilizers aren't the only substances that can be supplanted with organic substitutes. As we've seen, many plant species can help repel certain types of insects, but there are also natural substances and compounds that are effective in preventing pests. Milky Spore Grub Control - a compound made from *bacillus popilliae* spores - is a product that can be spread onto the lawn to provide a natural and effective grub control. Horticultural, cottonseed and soybean oils are effective pesticides for many types of ornamentals. Pyrethrins - naturally occurring insecticides made from the chrysanthemum - can be found in powder form and, though not long lasting, can produce fast and highly effective pest-killing results. Diatomaceous earth is a naturally occurring, chalk-like sedimentary rock that is crumbled into a fine white powder and used as a lawn insecticide. It absorbs lipids from the insects' exoskeletons and causes them to dehydrate, and is very effective for all types of bugs. For certain bugs, as well as crabgrass, try corn gluten. There are even natural plant pesticides you can make at home utilizing certain types of oils and citrus juices. The next time you need to apply a pesticide to your lawn or landscaping features, take a look at the following to gather some great ideas:

www.beyondpesticides.org/pesticidefreelawns/resources/index.htm
www.organiclawncare101.com/articles.html
http://vegetablegardens.suite101.com/article.cfm/organic_pest_control_and_pesticide
www.colostate.edu/Dept/CoopExt/4DMG/VegFruit/organic.htm

A Note on Bugs >

When landscaping and caring for our lawns, it is important to remember that not all bugs are bad. Of course, there are those types that are particularly burdensome and cause a lot of damage if left to their natural actions. Other types of bugs, however, are an essential part of any healthy backyard ecosystem and are in fact beneficial to our lawns and landscapes. The earthworm, though not actually an insect, converts organic material into nutrients that plants can absorb, loosens the soil making it easier for roots to grow and air and water to circulate in the soil, increases the soil's water retention capability, and brings minerals and other nutrients located deep in the soil to the top layer where they can be absorbed by the plants. Some species of ground beetles and certain species of ants, as well, are carnivorous and feed upon the pest insects found in many lawns. Spiders, though also not classified in the insect family, catch and eat many of the pests that commonly disturb our

...savings for a typical quarter-acre lot where clippings were left on the lawn amount to almost $100 for fertilizer and plastic bags

...home-owners use 10 times the pesticides per acre that farmers use

...one acre of lawn costs $400 to $700 per year to maintain

lawns. The following chart shows some other insects that prey on the damaging insects in our yards.

Assassin bug	*Aphids, caterpillars, potato beetles, Japanese beetles, leafhoppers, Mexican bean beetles*
Damsel bug	*Aphids, leafhoppers, mites, caterpillars*
Big-eyed bug	*Aphids, caterpillar eggs and larvae, immature bugs, leafhoppers, spider mites*
Predacious stink bug	*Potato beetles, caterpillar larvae*
Syrphid fly larvae	*Aphids, mealybugs*
Lady beetle	*Aphids, mealybugs, spider mites*
Green lacewing larvae	*Insect eggs, aphids, spider mites, thrips, leafhopper nymphs, caterpillar larvae*
Trichogramma wasp	*200 pest insect eggs including cutworms, corn borers, corn earworms, armyworms, codling moths*
Encarsia wasp	*Greenhouse whiteflies*

Table 1 - *Beneficial bugs (noted in green) and the pests they prey upon*

Visit the links below for some great resources to help you start targeting the pests with the help of beneficial bugs.

www.helpfulgardener.com/organic/2006/beneficial.html
www.beneficialinsects101.com/garden-insects-article.html
www.ext.colostate.edu/Pubs/water/xcm221.pdf
www.ext.vt.edu/pubs/plantdiseasefs/450-725/450-725.html

Saving a lot >

The health of Colonial Heights' waters starts in our yards. Utilizing natural and organic fertilizers, pest repellants and organically-based planting and maintenance practices will help you save time, headaches and money, but will also keep a significant amount of chemicals from finding their way into Swift and Oldtown Creeks and the Appomattox River. With the help of some good resources and a little advanced planning, our lawns can be as healthy and attractive as our waters.

10 Easy Ways to Conserve Water

Do the following headlines sound familiar:

'Rainfall Four Inches Below Normal'... 'Groundwater Deficit'...
'Lake Chesdin at Low Levels'... 'Localities to Institute Water Restrictions'?

In a hot, dry Virginia summer, they should...

Our most important resource

All of us realize that water is an important resource in our lives, but sometime we forget just how important it is to our health, our welfare and our economy. About 60% of the human body, for example, is water. Muscle tissue is 75% water by weight, blood is 95% water, and the human heart is roughly 75% water. It takes 37 gallons of water to produce, package and ship the beans in your morning cup of coffee, and 4,200 gallons of water to produce just two pounds of beef.

It's clear, then, that water is entirely more important than we often give it credit for. The facts above, taken together with the fact that only about 1 to 2% of the world's water is suitable for human consumption, clearly demonstrate that it's an area where conservation is important.

Water mandates

We're all familiar with the dry months of July and August when our lawns dry up and we begin to hear headlines about low water levels and water restrictions. In Colonial Heights, Ordinance 07-26 authorizes water restrictions when "the Appomattox River Water Authority (ARWA) requests or directs such restriction or when the governor... or other state or federal authority, pursuant to applicable law, declares an emergency [or] imposes mandatory water conservation measures." Under this authority, the City Manager imposes either voluntary or mandatory usage restrictions, dependant upon the severity of the shortfall. The restrictions include limits on lawn and landscape watering, limits on the washing of paved areas, vehicle washing and pool filling, among other actions.

Penalties for violating mandatory restrictions include civil penalties ranging from $50 dollars to $400 dollars, and failure to pay any assessed penalty authorizes the City to collect the fine in any manner authorized for the collection of utility bills.

The good news about water conservation

We can help reduce the necessity for water restrictions like those mentioned by conserving water on a daily basis. The good news is that there are many easy steps we can take to limit or water usage and, by so doing, help conserve our most precious resource. Around the home, around the yard, and at work there are ways to conserve water that we may never have thought about before and that, with little effort and, in some cases, no added expense, can be incorporated into our daily routines. Remember, 1 to 2% of the world's water has to be shared between more than 6,710,000,000 people.

1. Check for leaks

Inside the home, checking for leaks can cut water usage by nearly 14 percent. Leaky toilets, for example, can waste as many as 30 gallons of water each day and dripping faucets can waste about 2,000 gallons of water each year. Leaky faucets, pipes and toilets are among the leading sources of water waste every year. Fixing them will not only help you conserve water, but could save you money on utility bills you probably didn't even know you were wasting.

2. Wash full loads

By washing clothes only when each load is a full load, you can save nearly half of the washing machine's capacity in water. Depending upon the size and settings of your washing machine, one load uses anywhere from 40 to 60 gallons of water. Washing only when each load is full inevitably lowers washing frequency, saves water and electricity; a savings you could notice in your water and electricity bills.

3. Be water-savvy in the kitchen

The kitchen presents some excellent opportunities for saving water. Instead of defrosting meats and other items by running them under water or letting them sit in a large container of water, plan ahead and allow your items to thaw in the refrigerator. This will save excess water and maximize electricity for which you are already paying. If you wash dishes by hand, use two basins: one for washing and another for rinsing. Doing so will save all the water you would normally use by leaving the rinse water running the entire time. As with the washing machine, only run the dish-washer when you have a full load. Instead of letting your faucet run a minute or two each time you want a glass of cold water, keep a jug or bottled waters in the refrigerator.

4. Run less - collect more

This might be the easiest one yet. When doing the routine things around the home, think about ways you can run less water and collect what you have run. For example, don't let the water run while shaving or brushing your teeth. Better, still, is brushing your teeth while showering - a great way to save both water and time. When doing things like rinsing fruits or meats, collect the water in a container below and use it to water plants. The excess water from cleaning out fish tanks, as well, is a great source for feeding thirsty plants. When bathing, ask yourself if you really need to fill the tub three-quarters of the way; four to five inches of bath water will get us just as clean.

5. Upgrade to save

When your old water heater goes out, or you have to replace it's elements yet again, consider getting an instant water heater. Several brands are now on the market, in both whole-house and point-of-use models. These water heaters are tankless, allowing you to conserve 60 or more gallons of

Cool facts about water...

Health & Body>

A person can go weeks, and sometime months, without food, but can only go about seven days without water.

A person needs at least 6 to 8 cups of water per day to replenish what we naturally lose .

Water makes up 95% of the contents of human blood.

Headaches are often caused by an insufficient amount of water in the body.

The human brain is roughly 80% water.

Drinking at least 8 glasses of water a day can help you lose weight by keeping your kidneys functioning at full strength, thereby metabolizing more fat.

If you feel thirsty, you are already partly dehydrated.

Caffeine often acts as a diuretic, depleting the body of water.

A 2% drop in our body's water supply can trigger signs of dehydration like fuzzy short-term memory, trouble with basic math, difficulty focusing on smaller print and daytime fatigue.

reserve while saving you money on your electric bill. You'll already be facing an expense on your old heater, and instead of rejuvenating it, an upgrade to an instant heater will save you a lot in the long run.

6. Build a rain barrel

Saving water is as easy and appropriate for the lawn and garden as it is inside the home. Building a rain barrel is an excellent way to conserve water by storing and utilizing the rain we do get during the times we do not get any. Rain barrels connect to a gutter downspout and have a built-in pump or spigot to release the water when you need it, and all are entirely sealed to prevent mosquitoes and animals from getting into them. You can buy a ready-to-use rain barrel or, by checking out the links below, build your own with little expense.

7. Water smartly

If you've made sure your spigot is leak-free, you can buy a timer for very little cost and set your sprinklers to water at, and for, ideal times. Watering is best between 2 and 7am because it ensures that no excess water is dried by the hot sun. Instead of watering once for 30 minutes or an hour, water for 15 minutes at three different intervals. This allows the water at each interval to soak in, preventing excess runoff caused by the rate of watering exceeding the rate of infiltration.

8. Back to the broom

During the dry summer months, use a broom or leaf blower to keep sidewalks, driveways and garage floors clean instead of rinsing them down with a water hose. A broom will do the trick without using all the excess water.

9. Go native

The new landscaping we all plan during the spring presents yet another opportunity to conserve water. Native plants, once established, are often heartier than plants not native to this area and are generally more adapted to our hot, dry summers. Plant choice and placement can greatly reduce the amount of water your landscaping requires.

10. Use your pool wisely

If you have a pool, there are several ways you can conserve water, both by protecting it and utilizing its contents. When back-flushing your filter, use the water on your plants and landscaping. Consider, also, getting a pool cover. This will help prevent water evaporation and, in so doing, reduce the amount and volume of necessary refills. There are many types of pool covers on the market: everything from roll-up covers to the handy, though more expense, automatic pool covers. Additional benefits of keeping your pool covered are the facts that you'll have fewer insects and trash in it and have fewer concerns about unattended swimmers.

Cool facts about water...

Sources & Production>

11 gallons of water are used to irrigate and wash the fruit in one half-gallon jug of orange juice.

The average person uses anywhere from 75 to 110 gallons of water per day.

It takes 264 gallons of water to produce one quart of milk.

Oceans and seas contain 96% of the world's water, and 2% is contained in the world's icebergs.

Acting as an insulator, water helps regulate the earth's temperature.

80% of the earth's surface is water.

Nationally, people pay over 25 cents for their water utility on a daily basis.

An average of 20 gallons is used in a five-minute shower.

Water utilities process 38 billion gallons of water per day.

It takes 62,600 gallons of water to produce one ton of steel.

400 gallons of water are used to grow and produce 1 chicken.

Learn more...

Facts

www.epa.gov/ogwdw/kids/water_trivia_facts.html
www.epa.gov/safewater/sdwa/30th/factsheets/pdfs/fs_30ann_waterfacts_web.pdf
www.allaboutwater.org/water-facts.html

Around the home

www.deq.state.va.us/waterresources/waterconservation.html
www.engr.uga.edu/service/extension/publications/c819-1.html
www.americanwater.com/49ways.htm
www.ext.colostate.edu/pubs/consumer/09952.html
www.wateruseitwisely.com/100-ways-to-conserve/index.php

Conservation

www.epa.gov/watersense/

Landscaping

pubs.ext.vt.edu/426/426-713/426-713.html
www.aces.edu/pubs/docs/A/ANR-0790/WQ1.3.4.pdf
www.wateruseitwisely.com/100-ways-to-conserve/outdoor-tips/how-to/landscape-to-xeriscape/index.php
http://www.dcr.virginia.gov/natural_heritage/nativeplants.shtml

Rain Barrels

www.watershedactivities.com/projects/spring/rainbarl.html
www.ehow.com/how_4615763_build-install-rain-barrel.html

Where does my water go?

Shower	up to 32 gallons for an 8-minute shower
Bath	31 gallons
Toilet	4 gallons per flush
Dishwashing	by hand: 8 gallons per wash
	machine: up to 24 gallons per wash
Clothes Washing	up to 66 gallons per wash for a large automatic
Car Washing	30 to 80 gallons
Garden Sprinkler	varies; 250 gallons per hour is not unusual
Dripping Tap	anywhere from 8 to 132 gallons per day
Leaking Pipe	up to 80 gallons per day

Visit the following to learn more about what groups in Virginia are doing to conserve:

VA Naturally
www.vanaturally.org/vanaturally/comm_water.html

Soil & Water Conservation Association
www.vaswcd.org/propertyowners.htm

VA Conservation Network
www.vcnva.org/anx/index.cfm/1,258,928,0,html/Water-Conservation-Tips

Soil & Water Conservation Society\VA Chapter
www.bse.vt.edu/swcs/

Department of Public Works
201 James Avenue
Colonial Heights, VA 23834
(804) 520-9334
www.colonial-heights.com/PublicWorks

OUR HAZARDOUS HOUSEHOLDS

There are three things that the winter season is certain to bring with it: chores, chores and chores! Inevitably, indoor projects, fall cleanings and holiday decorating require us to clean and reorganize areas in and around our homes. Fortunately for the space in our homes, these projects usually result in the accumulation and disposal of solid waste. Unfortunate for our local waterways, however, is the fact that solid debris is one of the most significant contributors to the amount of pollutants found in our waters. Man-made, solid material that enters our waterways, either directly or indirectly, accounts for roughly 86% of the trash found in Virginia's rivers and on Virginia's beaches.

The good news is that there are many simple steps each of us can take to reduce the amount of solid debris we produce. Practicing these will not only save our valuable water resources, they'll save us time, money and possibly backaches during our winter projects.

Reduce...Reuse...Recycle

Sure, it sounds cliché but if we really stop to think about the things we buy, why we buy them, and the amount that we use them, we can save ourselves significant expenditures and rid ourselves of a lot of household clutter. Since the easiest way to eliminate solid waste is by preventing it from ever becoming unwanted debris, try implementing the following steps around your home.

Reduce

- Look for items packaged with minimal packaging
- Buy in bulk when practical
- Avoid disposable, single-use items
- Buy concentrates
- Rent instead of buying; this works particularly well in cases where you'll only need the item a few times

Reuse

- Use cloth bags when shopping; most places offer a discount for this
- Pack your lunch in reusable food containers
- Use rechargeable batteries
- Use refillable pump\spray bottles
- Buy milk and water in refillable bottles

Recycle

- Participate in recycling programs; each item you recycle is likely one less that needs to be produced
- Buy recycled products; the recycling loop is not closed until we purchase products made from recycled materials

Reducing means less clutter, fewer backaches and more free time.

Remember **One half of all our household solid waste comes from the packaging of the things we buy.**

It's estimated that 100 billion pieces of junk mail are delivered to mailboxes every year, an amount that requires 100 million trees to create. An estimated 30% of all mail delivered in the U.S. is junk mail, thrown away to become solid waste before its even opened. Take steps to cut down on your junk mail:

1. **Ask to be removed** - contact the Direct Marketing Association and ask to be removed from their affiliates' lists
2. **Ask for privacy** - when giving your name and info for any business transaction, ask that your info not be added to marketing lists
3. **Phone books** - consider an unlisted number, or request that the company list only your name and not your address
4. **Return to Sender** - any mail with *Address Correction Requested* or *Return Postage Guaranteed* can be returned unopened by writing *Refused-Return to Sender* on the envelope

The top 10 products recycled in 2009 were:

Computers
Batteries
Televisions
Paint
Aluminum Cans
Used Motor Oil
CFLs (Compact Fluorescent Lamps)
Glass
Fluorescent Lamps
Christmas Trees

Source: Earth911

7 Things You Probably Didn't Even Know Were Recyclable:

1. Batteries
2. Crayons
3. Wine Corks
4. Hair
5. Holiday Lights
6. Trophies
7. CDs/DVDs/Cassettes

THE GLOBAL LEADER

The United States have long led the world in many categories of global production. As with anything, this unfortunately means we lead the rest of the globe in some not-so-attractive categories. As of 2006, the United States produced around 236 million tons of waste annually, and by 2007 that number had increased to 254 million tons. The average American throws away nearly 5 pounds of trash on a daily basis. Despite making up only 5% of the world's population, the United States produce 30% of the world's waste. In only a year, Americans throw away around 26,800,000 tons of food, 8,550,000 tons of furniture and furnishings, and 6,330,000 tons of clothing and footwear.

Unfortunately, 80% of all products that are produced in the United States are used only once and then discarded, and 95% of plastic and 50% of all of the aluminum beverage cans that are thrown away never get recycled. By reducing, reusing and recycling we can help change these statistics, save ourselves time, money and backaches, and most importantly, help protect our invaluable water resources.

Table of Trash Types and Percentages

Trash Type	Percentage	Tonnage
paper	40.4%	71.6 million tons
yard trimmings	17.6%	31.6 million tons
metals	8.5%	15.3 million tons
plastics	8.0%	14.4 million tons
food scraps	7.4%	13.2 million tons
glass	7.0%	12.5 million tons
other	11.6%	20.8 million tons (*rubber, leather, textiles, wood, miscellaneous inorganic wastes*)

According to the 2001 International Coastal Cleanup, these ten items accounted for 85% of all the litter debris found in and along Virginia's waters:

1. Cigarette butts/cigarette filters
2. Bags/food wrappers
3. Beverage bottles (plastic) 2 liters or less
4. Beverage bottles (glass)
5. Beverage cans
6. Cups, plates, forks, knives, spoons
7. Caps, lids
8. Fast-food containers
9. Straws, stirrers
10. Tobacco packaging/wrappers

Harmful Impacts of Debris

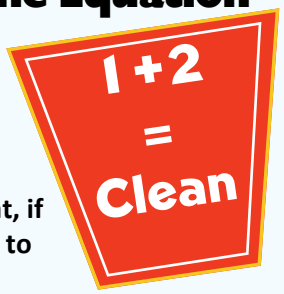
- Each year, more than 100,000 marine mammals die when they ingest littered debris.
- 2 million seabirds die every year due to debris ingestion and entanglement.
- According to the National Oceanic and Atmospheric Administration (NOAA), marine debris threatens over 265 different species of marine and coastal wild-life.
- Virginia's Department of Transportation (VDOT) spends more than $6 million to remove litter from our roadsides.
- Millions of dollars are spent every year in Virginia and across the U.S. just to minimize the damage of littered debris.

Dollars and Sense

Practicing the "3 Rs" doesn't just protect our waters; it saves us money and that just makes good sense.

- Recycling one aluminum can saves enough energy to run a TV for three hours - or the equivalent of a half a gallon of gasoline.
- $1 out of every $11 Americans spend for food goes for packaging.
- One pound of recyclable aluminum is worth 85¢, on average.
- The average bottled water costs $1.60; a savings of well over $500 per year for a person who switches to a reusable bottle.

...the Other Part of the Equation



Solid waste is unfortunately just part of the danger our homes pose for our waters. Hazardous wastes are a significant source of the pollution in our rivers, streams, and lakes. Many of the harmful chemicals used in the cleaners, solvents and pesticides we use on a regular basis in and around our homes end up severely degrading the health and habitat of our watercourses. Holiday clean-up, winter room renovations and closet reorganizations all utilize solvents and chemicals that, if handled, used and disposed of in a more environmentally-friendly way, could be far less damaging to our waters.

Again, there are some simple things each of us can practice around the home to reduce the amount of hazardous waste we produce. In disposing of any chemical agents or solvents containing chemical agents, NEVER pour them down a floor drain or a storm sewer. The City Recycling Center, located behind the Sheetz on Conduit Road, accepts many types of chemicals and solvents. To find out more, call them at 479-7056 or visit their website. For disposal of insecticides, poisons, acids or other caustic compounds, appliances containing Polychlorinated Biphenyls (PCBs) or other toxic materials, please contact the Central Virginia Waste Management Authority at 800-732-3493 or Safety-Kleen at 804-748-3767. When storing, write the date of purchase on each item's container with a permanent marker to keep a check on the age of any item and follow any and all disposal labels carefully. Keep all substances in their original containers and make sure to properly dispose of items if their containers have become corroded or unstable. Do the same for items intended for exterior use, but also make sure that any items such as these are stored above ground level, in a covered area, where there is no potential for them to come in contact with any stormwater runoff. In the event that any chemicals or solvents leak or are spilled onto the ground or impervious surfaces like paved driveways or sidewalks, use absorbents and a broom and dustpan to clean them up rather than a water hose. Remember that ultimately, everything we dispose of - whether its yard waste or household chemical cleaners and solvents - can end up impacting our local waters. Clean houses don't have to mean dirty waters.

Projects that clean the home don't have to jeopardize our waters.

LESS MEAN...MORE CLEAN

Household cleaners don't have to be as mean as they are to be effective. Many of them can be much less damaging to the environment than they currently are and yet be equally as effective in performing the cleaning task for which you need them.

Think alternatively:

Alternative cleaners generally refer to cleaners that can be made at home, using non-toxic or less toxic chemicals than those found in commercial cleaners. Some alternative cleaners still utilize synthetic products by substituting the most toxic ingredients for alternatives, while other alternative cleaners utilize all natural ingredients, staying entirely away from synthetics. The best way to decide which type of alternative works for you is to evaluate what your cleaning needs are specific to the types of stains or substances you find yourself regularly cleaning; some heavier commercial stains or substances might require a less toxic alternative, while many of the common household surfaces and stains are easily cleanable and removable using a non-toxic alternative.

Ingredients common to many of the less toxic alternatives include the following:

Baking Soda - Cleans and deodorizes. Softens water to increase sudsing and cleaning power of soap. Good scouring powder.
Borax - Cleans and deodorizes. Excellent disinfectant. Softens water. Available in laundry section of grocery store.
Soap - Is non-toxic. Available in grocery stores and health food

HOME SWEET HAZARD

CAUTION CAUTION CAUTION

- The average home has 50 to 100 pounds of hazardous chemicals & solvents in it.

- American households generate 1.6 million tons of hazardous wastes annually.

- *Chlorine* - found in common household cleaners like bathroom disinfectants, window & oven cleaners, and furniture polish - is the #1 cause of child poisonings.

- Bathroom cleaners often contain *sodium hypochlorite*, a corrosive that irritates or burns skin & eyes, causes fluid in the lungs, & can lead to coma or death.

- Less than 2% of synthetic chemicals have been tested for toxicity, mutagenic, carcinogenic, or birth defects.

- An EPA survey concluded that indoor air could be as much as 70 times more polluted than outdoor air.

- National Cancer Association released results of a 15 year study concluding that women who work in the home are at a 54% higher risk of developing cancer than women who work outside the home.

- There are more than 3 million poisonings every year. Household cleaners are the #1 cause of poisoning of children.

stores. Sold as liquid, flakes, powder or in bars. Bars can be grated to dissolve more easily in hot water. Insist on soap without synthetic scents, colors or other additives.

Washing Soda - Cuts grease and removes stains. Disinfects and softens water. Available in laundry section of grocery store or in pure form from chemical supply houses as "sodium carbonate."

White Vinegar or Lemon Juice - Cuts grease and freshens.

Try the following recipes to begin making your home less toxic and less dangerous to our waters and our environment:

Household Cleaner -- Mix together:
1 tsp. liquid soap (castile, peppermint)
1 tsp. borax
Squeeze of lemon
1 qt. warm water
OR
¼ c. baking soda
½ c. borax
½ c. vinegar
1 gal. water

Window Cleaner -- Mix together:
2 tsp. vinegar
1 qt. warm water
OR
2 tbsp. borax
3 c. water

Using alternative cleaners protects your family and our waters.

Mildew Remover -- Dissolve together:
½ c, vinegar
½ c. borax in warm water
Apply with sponge or spray bottle

Furniture Polish (Wood Surfaces) --
Rub toothpaste on wood furniture to remove water marks.
Polish wood with 2 tsp. lemon oil and 1 pint mineral oil in spray bottle. Spray, rub in and wipe clean.
Mix two parts olive oil to one part lemon juice. After rubbing the mixture in, let stand for several hours and then polish with a soft, dry cloth.
Melt 1 tbsp. carnauba wax into two pints mineral oil. Use sparingly and rub hard.

These are just a few of the many alternative cleaner recipes that you can utilize to help make your home much less toxic than it is now. By doing so, you'll be healthier and will also be helping protect our waters.

The Problem with Pills…

What's above our sinks can often be as dangerous to our waters as what's below them: pharmaceuticals are increasingly being discovered in the nation's waters and in the animals that inhabit them. Studies discovering antibiotics such as penicillin, tetracycline, and vancomycin as well as hormone-disrupting compounds like endocrine continue to demonstrate the threat that medicine disposal from homes poses to our waters and our health. In waters with significant enough quantities, these chemicals have been found to severely alter the reproduction of species, turning male fish to female. Even more, researches are increasingly concerned that the presence of antibiotics will result in the presence of 'superbugs', new strains of bacteria that are resistant to antibodies. Pharmaceuticals enter our waters when they are flushed down the toilet or dumped down the sink, as wastewater treatment plants are not equipped to filter them.

If no local collection option exists for you, mix all old or unused pills together with such undesirable items as used coffee grounds and kitty litter in a securely sealable bag and discard in the garbage. Never put them down a sink or flush them down a toilet!

- **Collecting Your Pet's Waste**

  Animal waste is a significant contributor to the bacteria and pollutants found in our waters. It deposits harmful bacteria into our drinking, swimming, fishing and recreational waters. The Appomattox, much like our other waterways, contains high amounts of fecal coliform as a result of animal waste. Picking up after your pet is a simple and easy way to help decrease the amount of contaminants that end up in our waters. Virginia's Department of Conservation and Recreation (VDCR) lists the following 10 reasons why picking up pet waste benefits our environments:

  1. *Stormwater carries pet waste and other pollutants directly into waterways.*
  2. *Animal waste adds nitrogen to the water. Excess nitrogen depletes the water's oxygen, which is necessary for healthy underwater grasses, wildlife and fish.*
  3. *Animal waste contains harmful organisms such as Giardia, Salmonella and E. coli that can be transmitted to humans and other animals by ingesting contaminated water.*
  4. *Roundworms and hookworms deposited by infected animals can live in the soil for a long time and be transmitted to other animals and humans.*
  5. *It's the law! Many urban and suburban areas require you to pick up after your pet. Even if there is no restriction, cleaning up after your pet is the right thing to do.*
  6. *By joining the growing number of responsible pet owners, you might encourage hotel managers to accept pets when you're traveling and keep extra fees to a minimum.*
  7. *Let's face it - no one likes to step in pet waste and spread it into homes, cars and businesses.*
  8. *Scooping on a daily basis and applying lime will help prevent odors.*
  9. *It's easy to clean up by carrying small plastic bags and paper towels in your pocket. The bags can be secured and thrown away in the garbage.*
  10. *Your neighbors will appreciate the good manners.*

From Colonial Heights Stormwater Management Program website, available at
www.colonial-heights.com/StormwaterManagementSteps.htm

PET WASTE
TRANSMITS DISEASE
LEASH AND CLEAN UP AFTER YOUR PET
PLEASE KEEP THIS AREA CLEAN
PLEASE CLEAN UP AFTER YOUR DOG!
FLORA M. HILL PARK
CITY OF COLONIAL HEIGHTS
DEPARTMENT OF RECREATION & PARKS
TRESPASSING AFTER DARK

LORA M. HILL
PARK
CITY OF
OLONIAL HEIGHTS
DEPARTMENT OF
ECREATION & PARKS
NO
TRESPASSING
AFTER DARK
DOG WASTE
IS A THREAT TO THE HEALTH
OF OUR CHILDREN - DEGRADES
OUR TOWN - TRANSMITS DISEASE
LEASH - CURB AND
CLEAN UP
AFTER YOUR
DOG
ITS REQUIRED BY LAW!
MINIMUM FINE
$ 25.00

What is Low Impact Development (LID)?

Have you ever wished you could simultaneously lower your site infrastructure costs, increase your project's marketability and protect the environment? You may have, but then you probably assumed that was impossible. With LID techniques, you can. LID is an ecologically friendly approach to site development and storm water management that aims to mitigate development impacts to land, water, and air. The approach emphasizes the integration of site design and planning techniques that conserve the natural systems and hydrologic functions of a site.

Low Impact landscaping utilizes techniques that conserve the natural systems and hydrologic functions of a site.

For more information visit the following:

- www.lowimpactdevelopment.org
- www.lid-stormwater.net/background
- www.epa.gov/nps/lid

Colonial Heights
Department of Public Works

201 James Avenue
Colonial Heights, VA 23834

Phone: (804) 520-9334
Fax: (804) 520-9203
www.colonial-heights.com

Builder's Guide to Low Impact Development

Would you be interested in saving upwards of $70,000* per mile in street infrastructure costs by eliminating one lane of on-street parking on residential streets? Did you know that communities designed to maximize open space and preserve mature vegetation are highly marketable and command higher lot prices? Are you aware that most homeowners perceive Low Impact Development practices, such as bioretention, as favorable since such practices are viewed as additional builder landscaping? Did you know that by reducing impervious surfaces, disconnecting runoff pathways, and using on-site infiltration techniques, you can reduce or eliminate the need for costly storm water ponds?

*Assumes paving costs of $15/sq yd

LID Benefits

In addition to the practice just making good sense, LID techniques can offer many benefits to a variety of stakeholders.

Developers

• Reduce land clearing and grading costs

• Potentially reduce infrastructure costs (streets, curbs, gutters, sidewalks)

• Reduce storm water management costs

• Potentially reduce impact fees and increase lot yield

• Increase lot and community marketability

Municipalities

• Protect regional flora and fauna

• Balance growth needs with environmental protection

• Reduces municipal infrastructure and utility maintenance costs (streets, curbs, gutters, side-walks, storm sewer)

• Increase collaborative public/private partnerships

Environment

• Preserve integrity of ecological and biological systems

• Protect site and regional water quality by reducing sediment, nutrient, and toxic loads to water bodies

• Reduce impacts to local terrestrial and aquatic plants and animals

• Preserve trees and natural vegetation

Case Study

Kensington Estates is a conventional development on 24 acres consisting of 103 single-family homes in Pierce County, WA. A study was conducted to redesign the site using a new state storm water model and to illustrate the full range of LID practices and technologies available to developers. Overall, the redesigned LID site could have:

• Resulted in construction cost savings of over 20%;

• Preserved 62% of the site in open space;

• Maintained the project density of 103 lots;

• Reduced the size of storm pond structures and eliminated catchments and piped storm conveyances; and

• Achieved "zero" effective impervious surfaces.

LID Site Planning and Design Concepts

Successful LID projects simultaneously reduce land development and infrastructure costs while protecting a property's natural resources and functions. During the development process, the designer, developer, and reviewing agency should work together to identify solutions that integrate the following concepts:

• Preserve Open Space and Minimize Land Disturbance;

• Protect and Incorporate Natural Systems (wetlands, stream/wildlife corridors, mature forests) as Design Elements;

• Utilize Neo-Traditional Street and Lot Layouts and Designs; and

• Decentralize and Micromanage Storm Water at its Source Using LID Storm Water Management Practices.

LID and Storm Water Management

LID aims to mimic natural hydrology and processes by using small-scale, decentralized practices that infiltrate, evaporate, and transpire rainwater. Specifically, LID aims to:

• Minimize impervious surfaces;

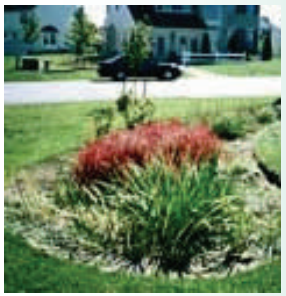
• Disconnect hydrologic elements (roofs, down-spouts, parking areas);

• Maintain/increase flow paths and times; and

• Utilize decentralized treatment practices.

Bioretention Areas

Storm water directed to these shallow topographic depressions in the landscape is filtered, stored, and infiltrated into the ground using specialized vegetation and engineered soils.



Grassed Swales

Water moving through these systems is slowed, filtered, and percolated into the ground. These systems can act as low cost alternatives to curbs, gutters, and pipes.

Help Protect Your Water!

from illegal dumping & illicit discharges...

Call 520-2003

Illegal discharges are:

* polluted dumping
* contaminated runoff
* discolored outfall discharge
* improperly connected floor drains

Illegal discharges can:

* contaminate our water
* cause fish kills
* destroy our recreational areas and resources

Illegal discharges can be both intentional & unintentional. Dumping oils, solvents or yard waste into a storm drain, oily or soapy runoff from a business, leaky & unattended oil or chemical storage units, & discolored or chemical-smelling discharges from a sewer outfall all constitute an illegal discharge. These illegal discharges are punishable by civil & criminal penalties. They damage the health of Swift Creek, Old Town Creek & the Appomattox River, and endanger our recreational and drinking waters. You can help: call the City's illegal discharge hotline & report any polluted discharges you see.

STOP Discharges...

Call 520-2003

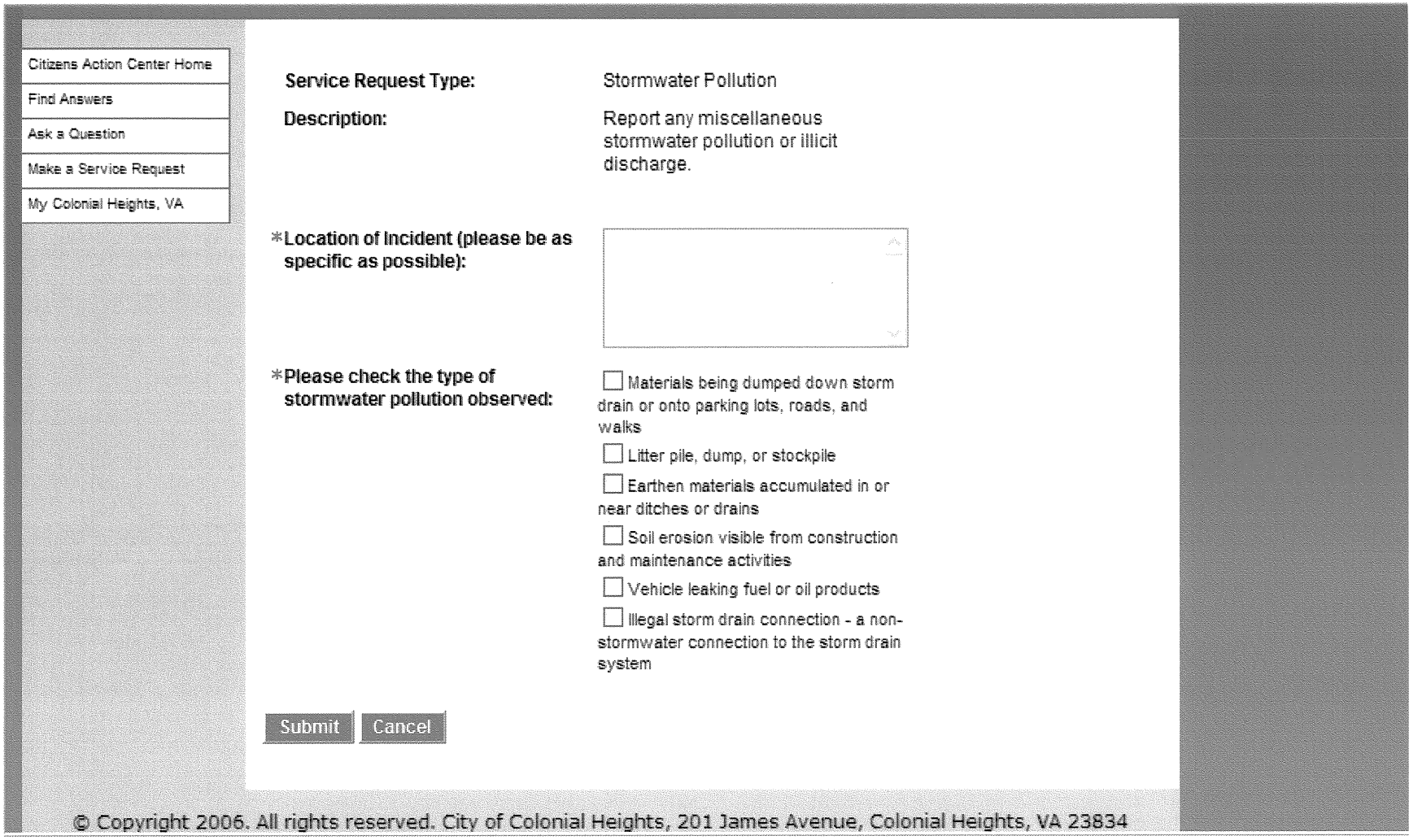
Or

REPORT ONLINE

Anonymous callers welcomed

Department of Public Works
City of Colonial Heights
201 James Avenue
Colonial Heights, VA 23834
(804) 520-9334

www.colonial-heights.com/PublicWorksStormWaterManagement



From Colonial Heights Stormwater Management Program website, available at www.colonial-heights.com/StormwaterManagementSteps.htm

Colonial Heights DPW
November, 2009

Proposal for

Colonial Heights *Our Waters Award* Program

Summary

The Colonial Heights *Our Waters Award* will recognize businesses for outstanding environmental stewardship. The award will be geared toward the recognition of stormwater-friendly practices or initiatives assumed or adopted by businesses. It could also be tailored to incorporate recognition of all environmentally-friendly practices.

Our Waters Award would be an annual award granted to a selected business whose actions had, throughout the previous calendar year, exhibited the highest commitment to reducing the impacts of stormwater on Colonial Heights' waters. The winning business would be selected from a pool of applicants by a selection panel. *Our Waters Award* winner would hold that title for the period of one calendar year - from current award notification to announcement of the award winner for the following year.

Benefits for being selected would include recognition in the *City Focus* and on the City's website, amounting to free advertisement, decorative Certificate of Recognition, recognition at a City Council meeting, and could include a small, decorative placard for placement on the exterior of the awarded business and a monetary award donated by interested community sponsors ($500 Home Depot, Office Max, etc. gift card).

Community-wide benefits of the *Our Waters Award* Program include the following:

- Increased public commitment to stormwater pollution prevention
- BMP incentives at a low budgetary cost
- Strengthened relations between City government and local business
- Fulfillment of a Consent Order action item on the City's MS4 Implementation Plan
- Potential for subsequent programs and cooperative efforts
- Increased public knowledge of the City's stormwater program and related efforts

I. Needs

Item	Pending	Anticipated	Expected
Guidance to businesses on decreasing stormwater impact	☐	☐	☒
Application	☐	☐	☒
Review panel	☐	☒	☐
Award certificate(s)	☐	☐	☒
Award placard	☐	☒	☐
Corporate donor	☐	☒	☐
Director approval	☒	☐	☐
Manager\Council approval (?)	☒	☐	☐

II. Goals/Objectives

Primary goals for this program, as summarized above, include the following:

- Increased public commitment to stormwater pollution prevention
- Fulfillment of a Consent Order action item on the City's MS4 Implementation Plan
- BMP incentives at a low budgetary cost
- Increased public knowledge of the City's stormwater program and related efforts

III. Procedures/Scope of Work

Pending program approval, a review panel - City personnel, corporate donor representative (potentially) - would be established. The application and review process would be outlined and documented. The program would then be advertised and applications would be accepted at a given date - likely then end of November in order to award a winner in early January. Once received, applications would be reviewed per program protocol and a winner would be announced. Following announcement, the winner would be recognized via the *City Focus* and on the City's website, a decorative Certificate of Recognition, recognition at a City Council meeting, a decorative placard for placement on the exterior of the awarded business and a monetary award donated by the corporate sponsor(s).

IV. Timetable

Component	Start Date(s)	End Date(s)
Document construction	pending approval	(-)30 days
Corporate donor solicitation	post-document construction	variable
Program advertisement	post-donor confirmation	ongoing
Application receipt		November 30 *(following advertisement)*

Application review	December 1	December 30
Award announcement		January 1 or later, as applicable

V. Budget

Item	Anticipated Costs
Guidance to businesses on decreasing stormwater impact	produced internally
Application	produced internally
Review panel	likely internal
Award certificate(s)	produced internally
Decorative placard	(+/-)$50
Corporate donor(s) award	$500 - $1,000

VI. Corporate Donor(s)

Appropriate corporate donor(s) would be Home Depot and/or Office Max or similar supply stores, as virtually every business uses products that these suppliers carry. Cooperation from such donors is anticipated as the amount(s) requested would be nominal.

VII. Next Steps

Pending approval, the timetable as outlined above could be enacted immediately. It should be noted that the date of *establishment* as indicated in the City's Consent Order is Quarter 1 of Fiscal Year 2010. No date for program *implementation* was identified in the Consent Order.

- Submit for discussion
- Revise as necessary
- Submit for approval
- See section IV.

Adopt-A-Waterway

Colonial Heights

A large portion of the City of Colonial Heights - both on and within its borders - is home to some invaluable and historic waters. The Appomattox River, Swift Creek and Old Town Creek furnish us a source of drinking water, provide us recreational activities and sustain our environment, and have been a source of food and travel from the pre-colonial era to the present. These waterways, their tributaries and associated habitats contribute to our City's character, natural beauty and value. Unfortunately, the more our City develops the greater the chance of our waters becoming littered with trash and debris. This deteriorates the health of our waterways and makes them much less attractive.

Want to help keep the City's waterways healthy?...

You can help protect the health, natural beauty and value of our waters by adopting a portion of a waterway for clean-up. By participating in the City's Adopt-A-Waterway program you'll be playing an active role in protecting the City's natural resources. You and your organization's clean-up team can be a valuable part of maintaining our waters and protecting our world.

How it works...

Participants or participating groups sign up to clean a segment of a waterway in Colonial Heights, twice a year for a minimum of two years. The City will provide collection bags for the clean-up activities, and participants will be asked to fill out a short reporting form after each clean-up. Due to the nature of clean-up, adult participation is encouraged, but individuals between the ages of thirteen and eighteen may participate with authorization and supervision.

How you'll help...

By adopting a waterway you'll be helping contribute to the future of Colonial Heights' natural resources. The more the City grows and develops, the more important it will become to ensure that our waters stay pristine and continue to fulfill their unique purpose in our environment. Your participation will help achieve this, and by participating you'll be setting an excellent example for citizenship and environmental stewardship. You and your group's efforts will be recognized in City publications and in various locations throughout the City.

Getting started...

Getting started is easy: fill out an application, available on the City's website or in the Department of Public Works, Engineering Division office at 201 James Avenue in Colonial Heights. Clean-up activities will be encouraged on predetermined dates in the spring and fall of the year, and once you've informed the City (48) hours prior to clean-up activities, you'll be on your way to protecting our waters and playing a valuable role in the health of our City.

Department of Public Works, City of Colonial Heights
201 James Avenue
Colonial Heights, Virginia 23834
(804) 520-9334
www.colonial-heights.com/PublicWorksStormWaterManagement.htm

CITY OF COLONIAL HEIGHTS

P.O. Box 3401
COLONIAL HEIGHTS, VA 23834-9001
WWW.COLONIAL-HEIGHTS.COM

Department of Public Works
Staff Report to Council

Date of Council Meeting:

Date of Report:

Item Title: Recommendation for Resolution to authorize implementation of Colonial Heights Adopt-A-Waterway Program

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Summary and Recommendation:

Staff recommends that City Council adopt a Resolution to authorize the implementation of an Adopt-A-Waterway program. The program fulfills one of the 72 "best management practices" (BMPs) as agreed upon in the Consent Special Order (CSO) executed between the City of Colonial Heights and the Department of Conservation and Recreation (DCR) related to the City's municipal storm sewer system permit.

Background:

In 2008 the City signed a Consent Special Order (CSO) with the Department of Conservation and Recreation (DCR). This CSO stipulates 72 best management practices (BMPs) to which the City has agreed to accomplish within the 5-year deadline of its municipal storm sewer permit with the purpose of reducing the pollutants in the City's stormwater runoff. One such BMP is the adoption and implementation of an Adopt-A-Waterway program.

Department of Public Works, Engineering Division staff subsequently investigated comparable programs implemented in jurisdictions throughout Virginia. The City's geographic features were then evaluated to determine what areas and\or water bodies were appropriate for inclusion in the program. Guidance and participatory documents were drafted and reviewed by the City Attorney and are attached as Exhibit A.

Adopt-a-waterway programs are designed much like adopt-a-street\roadway programs, in that citizens and civic groups have the opportunity to select areas of the jurisdiction for clean-up of litter and debris on some predetermined schedule. The jurisdiction, in turn, provides some level of support for the citizen(s)\group(s) conducting the clean-up. Some programs utilize a "stream and streambank approach" where participants remove litter and debris from both the water body's channel and the water body's banks; others utilize merely a "streambank approach." The selection seems generally based upon safety concerns related to the navigability of the water body, as well as the conditions for traversing the water body's banks. As well, jurisdictions seem split on whether or not to restrict these programs to City owned\authorized property or to pursue easements with private property owners.

A graphic showing the areas selected for inclusion is attached as Exhibit B. Based upon the evaluation mentioned above, it was determined that lands either owned by the City or under

Easement Agreement are most appropriate for a program such as this. This eliminates both the need for acquiring additional easements with additional property owners and the subsequent liability concerns of landowners. Based upon the physical characteristics of the City's surrounding waters, several of the areas selected for inclusion have been widened, relative to the traditional "streambank approach", in order to provide a larger area of impact.

Fiscal Impact:

As is the case with the Adopt-A-Street program, the City will provide participants with trash bags for debris collection, as well as safety vests to return when collection is complete. The City will recognize participants in the program via the *City Focus*, the stormwater website and other methods generated in-house, thus having little fiscal impact.

Policy Implications:

In addition to satisfying one of the provisions of the CSO, the Adopt-A-Waterway program will facilitate the clean-up of 78 acres of land area (with groups conducting clean-up on their adopted area twice per year). Participants will document the number of bags collected during each clean-up activity in order that the amount of debris collected can be reported annually to DCR. As well, it encourages a stronger commitment to environmental stewardship and civic responsibility. It creates an additional opportunity for cooperative interaction between residents and the City.

CITY OF COLONIAL HEIGHTS
Adopt-A-Waterway Program Overview

PROGRAM OBJECTIVE:
The objective of the Adopt-A-Waterway Program is to maintain the health, cleanliness and beauty of city streams and waterways.

PROGRAM DESIGN:
The Adopt-A-Waterway Program is an invitation to organizations and individuals to help take on the responsibility of maintaining the natural health and beauty of city waterways. Citizens, families, and organizations may volunteer to clean segments of selected streams and waterways on at least a semi-annual basis as an expression of environmental and municipal pride. Participants will be collecting bags of litter\debris.

PARTICIPANT CONDITIONS/EXPECTATIONS:
Participants will be expected to:

1. Contact the City to register the desired waterway(s). (This will allow the City to maintain records on the adopted waterways, to notify any affected personnel or groups, and to properly recognize the participant's efforts.)

2. Adopt a selected section of a waterway for a minimum of a two-year period (4 cleanups). Stream and waterway designations shall be made exclusively by the City and cleanup activities on any unauthorized segments are in no way endorsed by the City.

3. Notify the City at least forty-eight (48) hours prior to beginning any cleanup activities.

4. Collect litter twice per year so that the appearance of the area(s) is consistently clean.

5. Let the City know if you need to end the agreement so that others are free to adopt the waterway(s).

NOTE FOR PARTICIPANTS:
In order to maintain safety during cleanup procedure, the following conditions apply:

A. Persons under the age of eighteen (18) are not allowed to participate in the program without meeting the following criteria:

1. Have written authorization to participate from a parent\guardian; and

2. At least one (1) adult supervisor must accompany authorized participants under the age of eighteen when said participants number six (6) or fewer. If participants number more than six (6), an additional adult supervisor must be present. Thus for every six (6) participants under the age of eighteen, at least (1) adult supervisor must be present at all times during cleanup.

Other conditions include:

B. Avoid any steep slopes and/or unsecured footings, avoid obstacles that might cause you to get too close to unsafe slopes, and avoid areas near swift water.

C. Wear light-colored clothing for easy visibility.

D. Wear gloves during any cleanup activities.

E. Limit cleanup activities to the assigned area(s) only. **Unauthorized segments are not part of the Adopt-A-Waterway program**.

F. Do not pickup materials that appear to be hazardous. Instead, contact the City of Colonial Heights Police Department regarding any materials that appear to be hazardous or an imminent danger to anyone.

G. Work only in daylight and during fair weather conditions.

H. Stay alert for snakes and noxious weeds and take measures to avoid them. Wear boots of at least ankle-height and long pants to avoid contact with either of the above.

I. Do not overexert yourself; take breaks and drink plenty of water and hydrating fluids.

CITY RESPONSIBILITIES:
The City will:

1. Inform property owners, where applicable, of the date of sponsor(s) cleanup activity along designated waterway.

2. Provide sponsor(s) with safety vest(s) and collection bags.

3. Recognize sponsor(s) efforts in annual publications and related media.

4. Provide sponsor(s) with a certificate of recognition at the end of each two year sponsor period.

I have read the Program Overview, I understand its provisions, and I agree to be bound by it:

_____

Signature of Participant / Sponsor

_____

Signature of Parent / Guardian

APPLICATION TO ADOPT-A-WATERWAY

Participant / Sponsor Information:

Name of Participant / Sponsor: _____

_____

Affiliation (*if volunteering with an organization or group*):

_____

Mailing Address:

_____

Contact Person Phone Number:

_____

Email:

_____

Agreements:

The sponsor(s) agree that being granted approval to cleanup a city stream/waterway means that the following policies will apply:

1. This application shall have been approved by City staff prior to sponsor(s) beginning any cleanup activities.
2. Sponsor(s) agree to indemnify and hold harmless the City of Colonial Heights and any representatives thereof from ALL liability, judgment, costs, expenses and claims for damages or alleged damages of any nature whatsoever to any person, property or third party arising out of the performance of any cleanup activity or litter removal. Sponsor(s) will not go beyond assigned area or onto private property, and agree to heed the criteria listed under the **NOTE FOR PARTICIPANTS** as described on the program overview (preceding).
3. Signs and or any other equipment affixed to any land(s) shall not be removed, altered or damaged.
4. The sponsor(s) agrees to give the City forty-eight (48) hours notice of intention to begin cleanup. Notification shall be made to the City at the following:

City of Colonial Heights
Department of Public Works, Engineering Division
201 James Avenue
P.O. Box 3401
Colonial Heights, VA 23834
(804) 520-9334

5. The sponsor(s) acknowledges that all participants involved in this project are volunteers directed by and at the sponsor(s) discretion, and that the sponsor(s) accept full responsibility for any injuries or damages sustained by or caused by such participants. The sponsor(s) acknowledges that it or its

volunteers are solely responsible for their personal safety and are in no way considered to be employees of, or the responsibility of, the City of Colonial Heights.

6. The sponsor(s) agree that the City of Colonial Heights reserves the right to revise any of these criteria when deemed necessary and further reserves the right to revoke approval or deny participation when deemed appropriate.

Please check:

☐ *By signing below, I hereby acknowledge that I have read and fully understand the foregoing Program Overview and Application, and hereby release the City of Colonial Heights, its officers and its employees from any liability or damages relating to or arising from my participation in the Adopt-A-Waterway Program. I further agree not to file any lawsuits, claims, or other causes of action, whether legal, equitable, administrative or other type, against the City of Colonial Heights, its officers and its employees, based on any incidents relating in any way to my participation in the Adopt-A-Waterway Program.*

☐ *I am at least eighteen years of age.*

☐ *I am under the age of eighteen and have provided the City of Colonial Heights with the appropriate parent/guardian authorization.*

Participant Name: _____

Participant Signature: _____

Participant D.O.B.:

____ - ____ - ____

Date: _____

Parent/Guardian Name (*if applicable*): _____

Parent/Guardian Signature for Minor (*if applicable*): _____

Date: _____

Authorized City Representative: _____

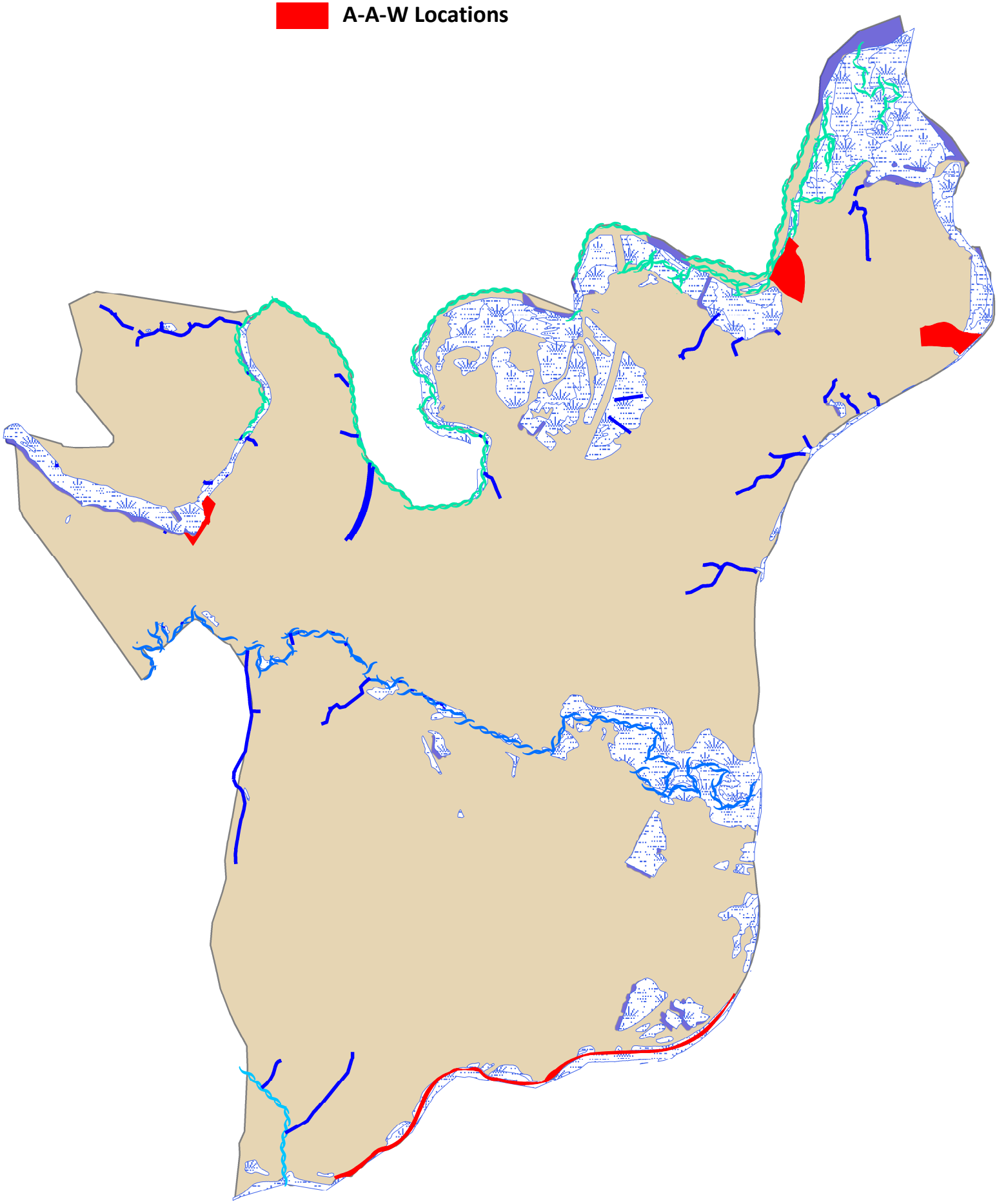
Date: _____

_____
Notary Public

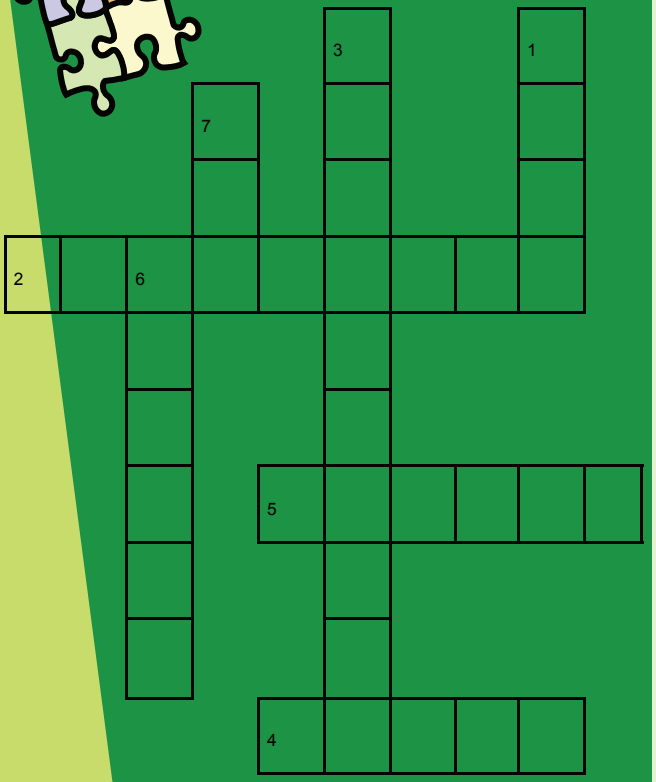
My commission expires:

Proposed Adopt-A-Waterway Locations (City parcels adjacent to waterbodies)

A-A-W Locations

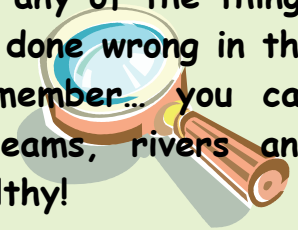


Stormwater crossword!



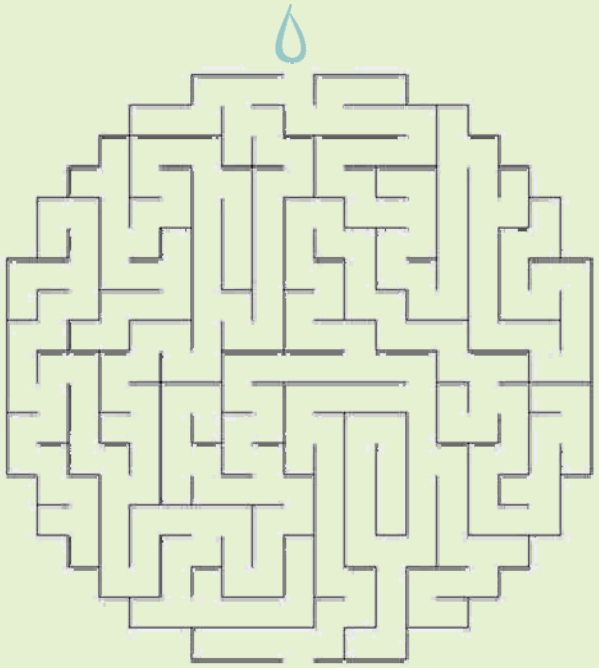
1. Stormwater is created by _____.
2. _____ makes streams, rivers and lakes unhealthy for fish and wildlife.
3. _____ is good for grass but can really hurt water quality.
4. _____ goes down the storm sewer and makes our waters ugly to look at and unhealthy.
5. _____ carry many pollutants to the Bay and the ocean.
6. _____ can clog a storm drain if raked into them.
7. Never pour ___ down the storm drain.

Be a stormwater detective! Look around your home and your yard to see if you can spot any of the things that you saw being done wrong in the picture inside. Remember... you can help keep our streams, rivers and lakes clean and healthy!



Follow the rain drop...

Help guide the rain drop through the maze and into the storm drain. Remember to make sure that it gets there without picking up any trash, oil or other pollutants.

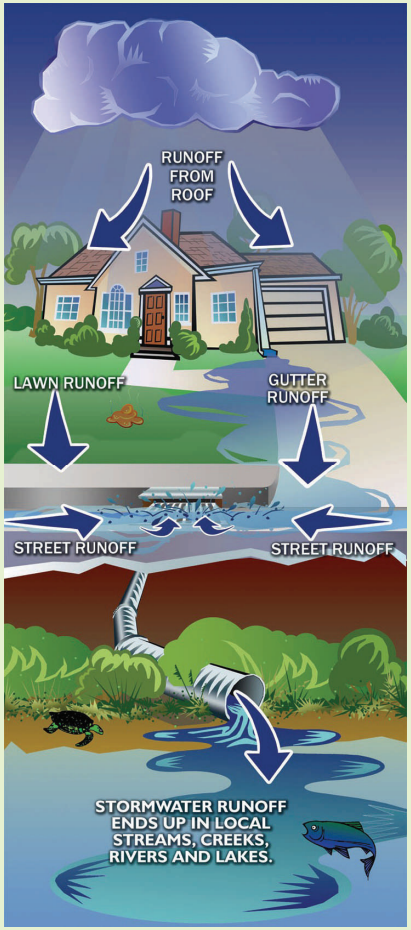


What happens when it rains?

When it rains the rain drops fall on the trees, on our houses, and on our cars and trucks. Once it runs and drips off of these it lands on the streets and on our lawns. After that it either sinks into the ground or runs down the street into the storm drains. But what happens to it then...

Where the rain goes

Once the rain has 'run off' of all the things above ground it is called runoff. Once this runoff has made it's way to the storm drain it doesn't just disappear. The storm drain is just the top, or inlet, to the storm sewer system. The storm sewer system is a long series of pipes under the ground that catches all the runoff. The storm sewer carries the runoff to lakes, streams and rivers.



Runoff is not clean water, though. As rains run off of the ground and street they pick up all the dirt, oils, grease, trash and pollutants that are on the ground and the streets. All of this is washed into the storm sewer in just the same way a ball or a small toy is moved around when you spray it with a garden hose.

So any pollutant that ends up on the ground ends up in the waters. Pollutants make it hard for fish and other species to live. These pollutants can make us sick, too, and make the waters too dirty for us to swim and fish in.

The best way to keep our waters clean is to keep anything that might hurt the water off of the ground and away from storm drains, so it can't be washed into them. Oil should never be poured into a storm drain or allowed to leak from a car. Trash should never be thrown into the street or the yard where runoff could wash it into the drain. Water from hoses or spigots should not be left where they can wash pollutants into the street or drain. Fertilizers and chemicals used for plants and keeping grass green should not be left where they can spill onto the lawn.

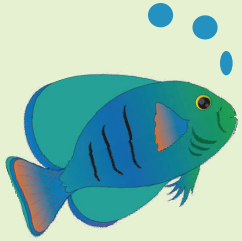
Something isn't right here!...

Can you find all 5 things that are not storm water friendly in this picture? Remember that everything that might end up in the streams, lakes or rivers will end up polluting it. Circle all the things that are being done wrong.

Storm water word challenge

P	M	A	E	R	T	S	B	W	R
X	O	I	B	L	A	K	E	A	U
W	V	L	I	D	J	O	Q	T	N
R	X	B	L	I	R	S	D	E	O
I	N	T	T	U	G	A	K	R	F
V	F	O	Q	Y	T	N	I	C	F
E	N	I	A	R	A	I	M	N	E
R	T	R	Z	B	E	P	O	Y	N
N	H	S	I	F	K	M	A	N	T

Find and circle the stormwater words:



stream	lake
fish	runoff
water	drain
pollution	river
bank	rain

Colonial Heights Department of Public Works

Be A Stream Protector

Do the things shown in the picture above with stars and never do those shown with a badge and you can help color your stream clean!

You can help...

- never put anything down the storm drain
- help build a rain barrel
- make a compost bin for raked leaves
- make sure car oils don't run into the storm drain
- pick up after pets
- plant flowers that use less water
- use less fertilizer
- turn downspouts onto grassy areas

Our City, Our Waters, Our World

Percolation Nation?

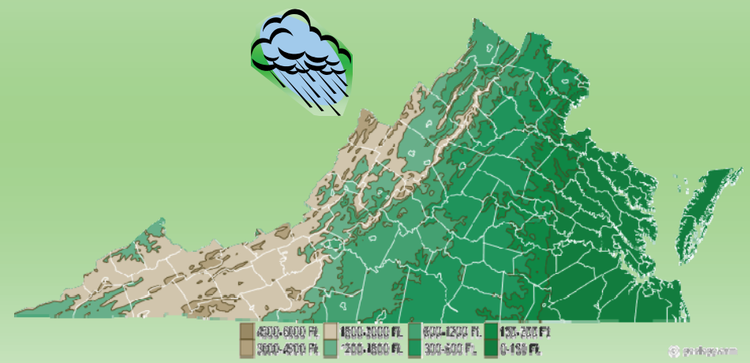
When water moves through the holes (called pores) in a material or substance it is called percolation. If you pour water onto a sponge, for example, the water will move through the sponge's pores to run out of the other side. Soil, like sponges, is made up of materials that have a lot of pores, so soil is called a porous material.

Since soil is a porous material, the ground often acts like a sponge for rain. As the rain runs across the ground and settles on flat and low spots, it runs through the ground's surface and through the soil below. The more pores the material has the more porous it is. Circle which of the surfaces below allow rain to percolate through them.

Soil	A Garden	A Rooftop
Sand	Sidewalk	Mulch
Grass	Gravel	
A Lawn	A Paved Street	

Are the Aliens Guiding Our Water?

It isn't being guided by any aliens, but it is being guided by outer space, in a way. Gravity is the force that causes all water to run downhill. Gravity is a natural occurrence that is responsible for keeping the planets in their orbit and keeping us on the ground. In space, the astronauts and all their things float around because there is no gravity.



This map of Virginia's elevations shows how, even when it rains in the mountains in the western part of the state, the rainwater still makes its way to the Chesapeake Bay in the eastern part of the state.

What is a Watershed?

A watershed is any area of land that drains to a particular body of water. Colonial Heights is in the Chesapeake Bay watershed, which means that all of the rain that falls on Colonial Heights ends up in the Chesapeake Bay. The Chesapeake Bay watershed stretches across more than 64,000 square miles, covers parts of six states, and covers the entire area of Washington, D.C.

More than 100,000 streams and rivers run through the Chesapeake watershed. These streams and rivers that eventually flow into the Bay are called tributaries. Everyone in the Chesapeake Bay watershed lives within a few minutes of one of these streams and rivers, which act like pipelines that carry rainwater from our communities to the Bay.

Check the states that <u>are not</u> in the Chesapeake Bay watershed:

__ New York	__ Florida
__ Kentucky	__ Delaware
__ Maryland	__ Pennsylvania
__ New Jersey	__ West Virginia

All About the Chesapeake Bay

The Chesapeake Bay is the largest estuary in the United States. An estuary is a body of water where fresh water from streams and rivers mixes with salt water from the ocean. Estuaries are among the most productive environments on earth, providing a variety of habitats that support many animal and plant communities. A habitat is an area where a particular animal or plant species lives. It is the natural environment in which an organism lives, or the environment that surrounds an animal or plant species. The Chesapeake Bay supports many habitats. Marshes, forests, aquatic reefs, wetlands and forests are all types of habitats that are supported by the Bay.

Fill in the blanks below beside each species with the correct letter for each habitat the Chesapeake Bay supports.

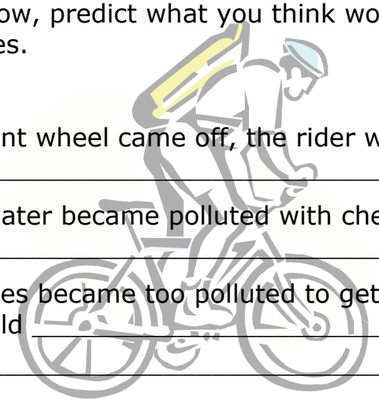
___ Catfish
___ Oyster
___ Sandbar Shark
___ Bald Eagle
___ American Black Duck
___ Eastern Screech Owl
___ Jellyfish
___ Bobcat
___ Red Fox
___ Blue Crab

A = Forests
B = Wetlands
C = Streams & Rivers
D = Open Waters

Everybody Rides the Eco - Cycle!

All animals, plants and people are part of an ecosystem. In an ecosystem all living organisms interact with every other living organism in their local environment. In other words, an ecosystem functions like a bicycle, where all the parts work together and any particular part will not work properly without the other parts that it relies on. A wheel, for example, will not spin without the pedals to turn it, and the pedals can't turn the wheel if the chain is not attached properly. So just like a bicycle, an ecosystem needs all its parts in good condition to be healthy and function properly.

In the spaces below, predict what you think would happen in the following cases.



- If a bicycle's front wheel came off, the rider would _____.

- If an animal's water became polluted with chemicals, the animal would _____.

- If rivers and lakes became too polluted to get drinking water from, people would _____ _____.

What Happened In Our Water?

Something is happening in our waters. When it rains, the water that runs off of our houses, cars, streets and lawns is called stormwater runoff. Pollutants from this stormwater runoff are collecting in our streams and rivers and polluting them. As stormwater runs across surfaces, it picks up dirt, mud, oil, chemicals, litter and fertilizers and carries them into our rivers and streams. These pollutants affect the health of the water's habitats and make it difficult for animals and plants to live. In fact, pollutants in stormwater runoff are the leading cause of water pollution. How do these pollutants get into stormwater? Many of the actions people do on a regular basis allow many of the pollutants to collect in the runoff. Match the causes to the affects below to help find some clues about how runoff gets polluted.

Litter _____.
Using too much _____.
Leaving or pouring _____.

1. fertilizer results in excess chemicals ending up in streams and rivers.
2. always ends up as pollutants in rivers and streams.
3. oil or chemicals onto the ground or into the storm drain allows it to be carried by stormwater runoff to local water bodies.

Stormwater 4 Kids

COLOR YOUR WATER CLEAN

Coloring Book

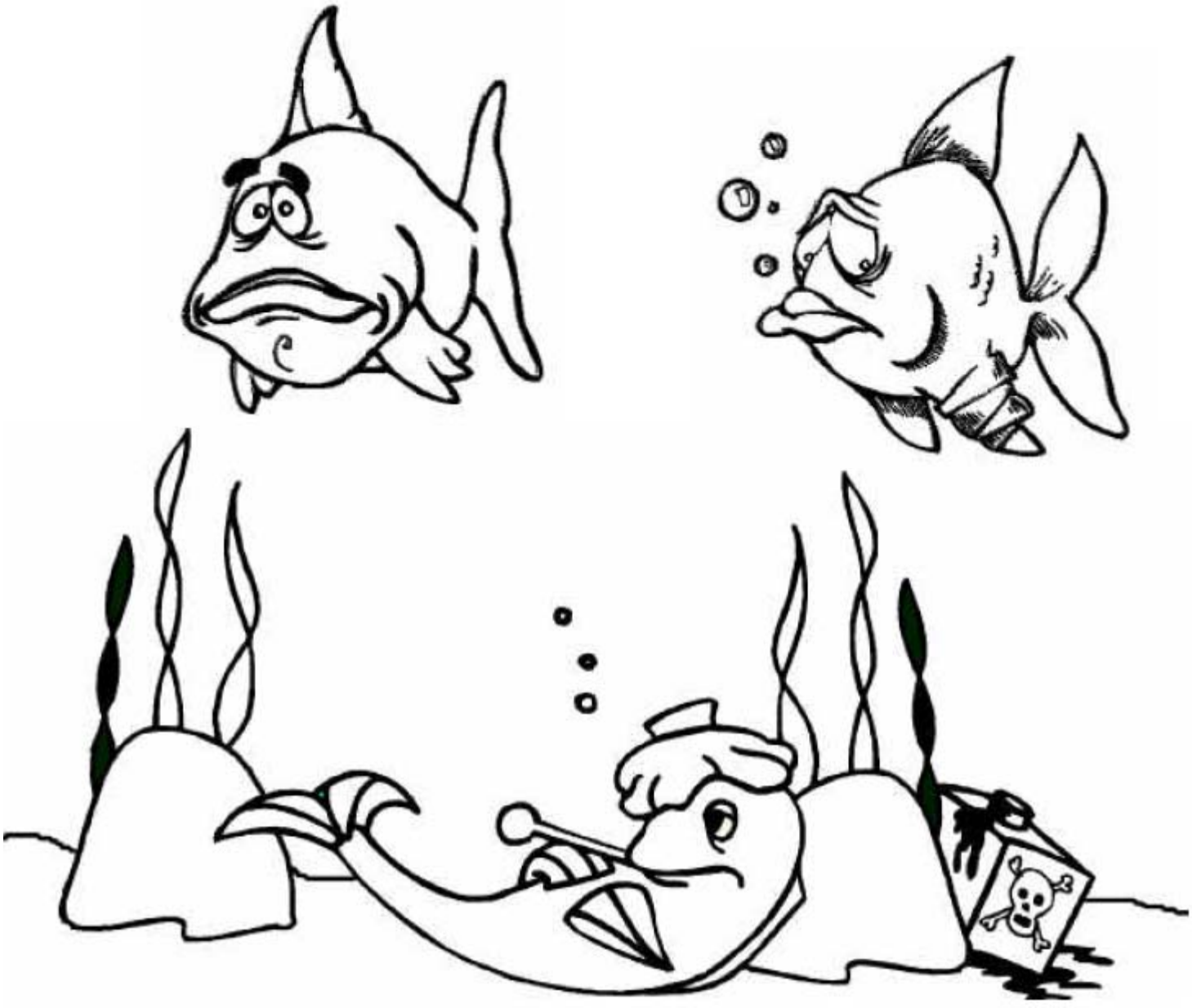
Our City, Our Waters, Our World

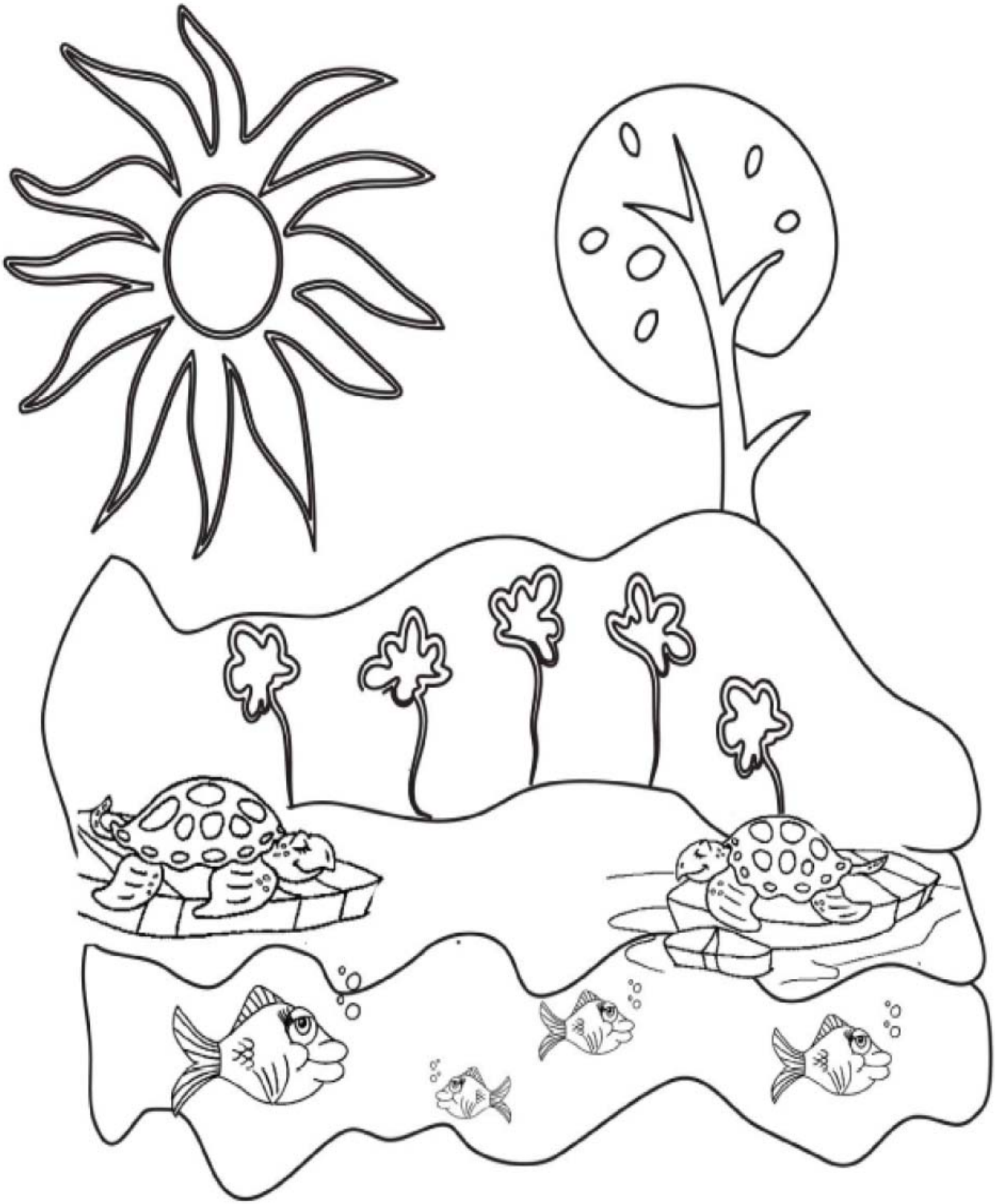
City of Colonial Heights

Why are the animals sick or moving out? The water may be polluted. One cause of water pollution is STORM WATER POLLUTION. This happens because water becomes contaminated with stuff like trash, dirt, oil, and sewage chemicals.

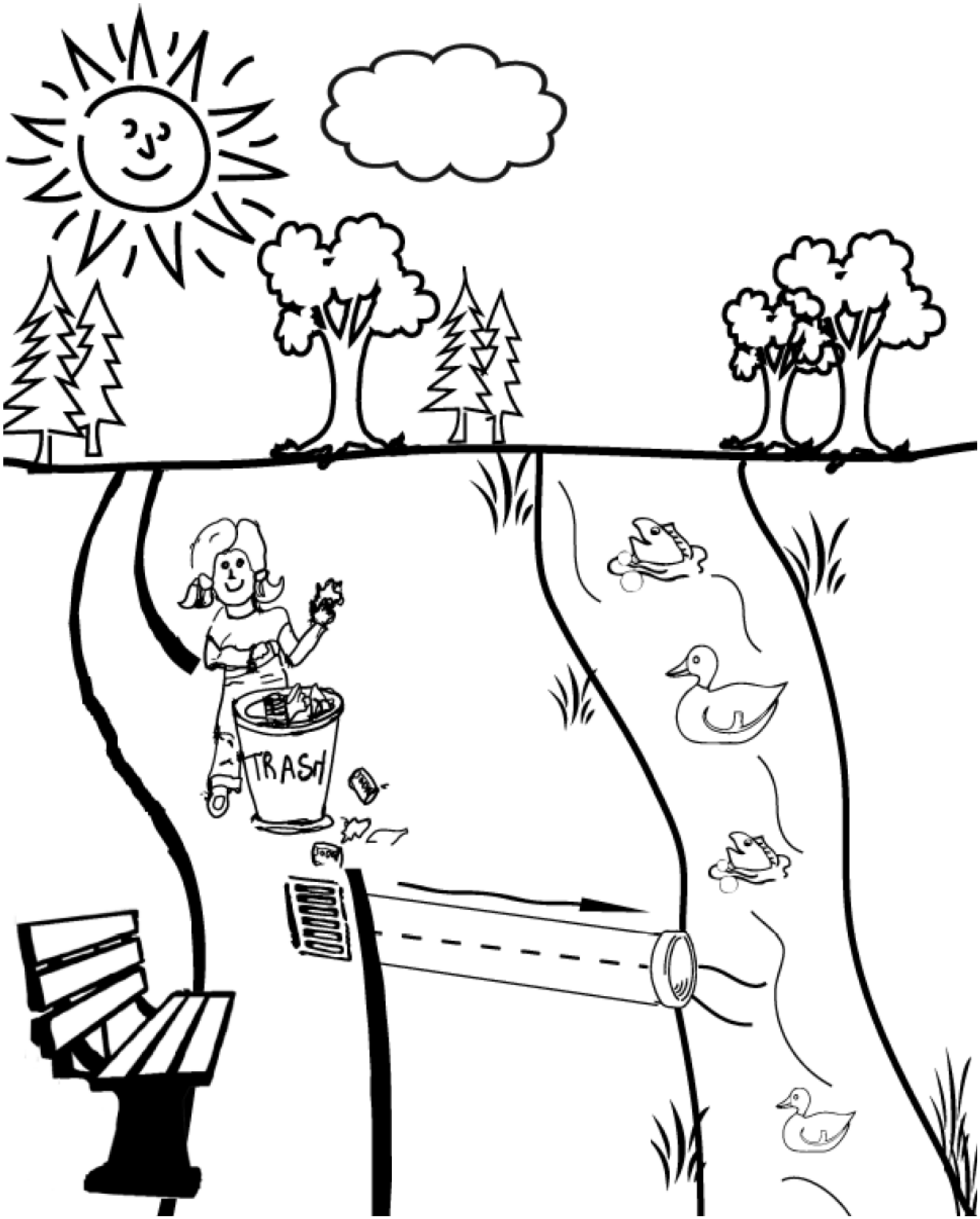
How does the water become polluted?

We cause pollution. When it rains, the water that flows over the streets and in drainage ditches picks up pollutants such as trash, dirt, pet waster, chemicals and more and carries them, untreated, into our rivers, streams and lakes.



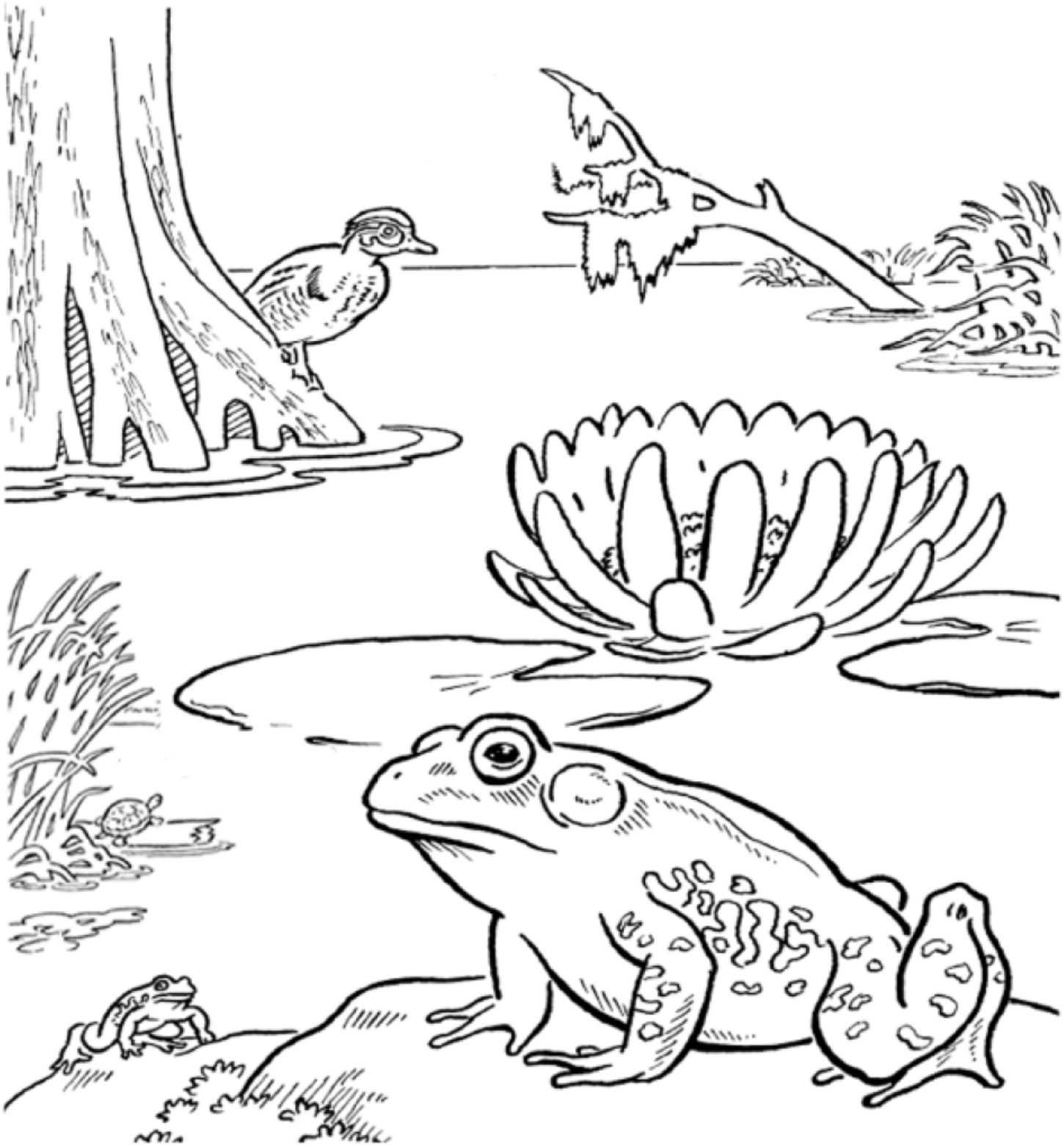


Give our water a hand! Do not dump trash into our rivers or canals. Let our plants, fish and turtles have a clean, healthy place to live.



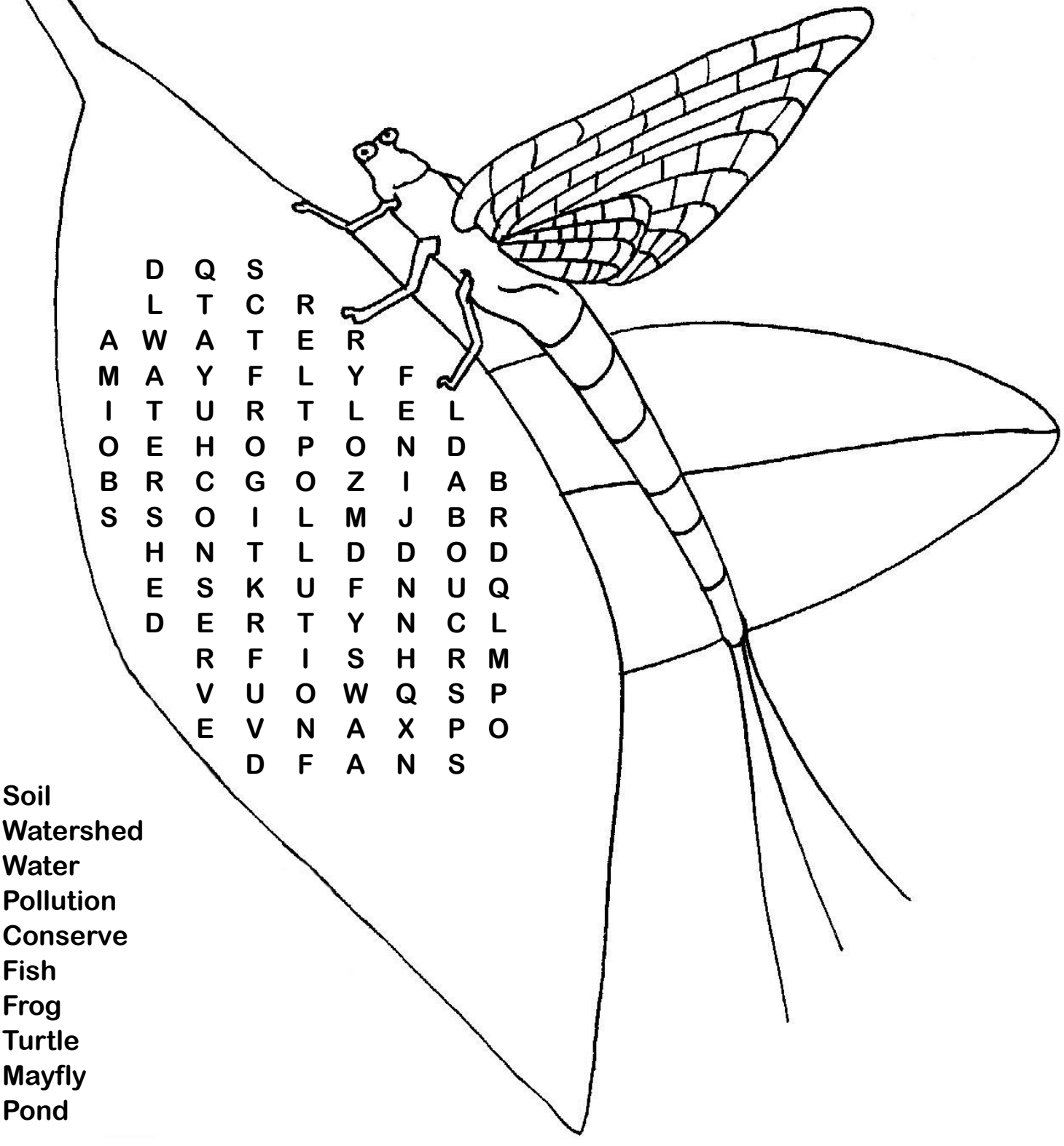
What you drop means a lot! Help protect clean water by keeping litter and pollution out of storm drains.

Use care about what is poured on the ground. Things that should not be dumped onto the ground include: leftover paint, paint thinner, motor oil and all kinds of substances that are used to kill weeds and bugs.(small amounts of pesticides are not considered a major problem.)



All life forms depend on clean water. Wetlands are essential, natural, living entities that must be protected for the common good—the good of the people and the good of the huge variety of animals, fish and plants that survive in these unique habitats.

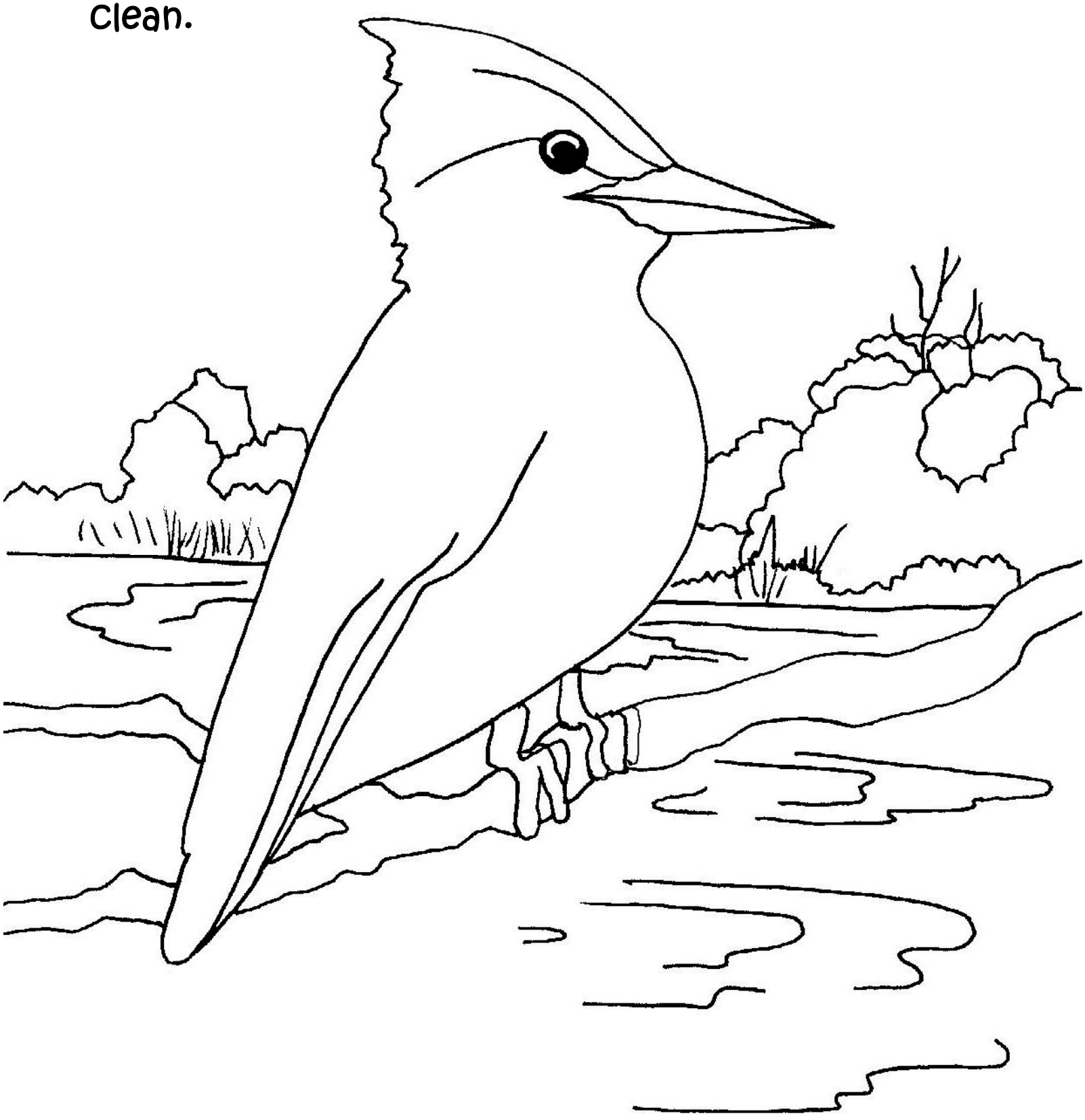
My name is Molly the Mayfly. Mayflies live in the water when they are babies. This is why it is so important to keep the water clean. When they grow up, they grow wings and fly away.



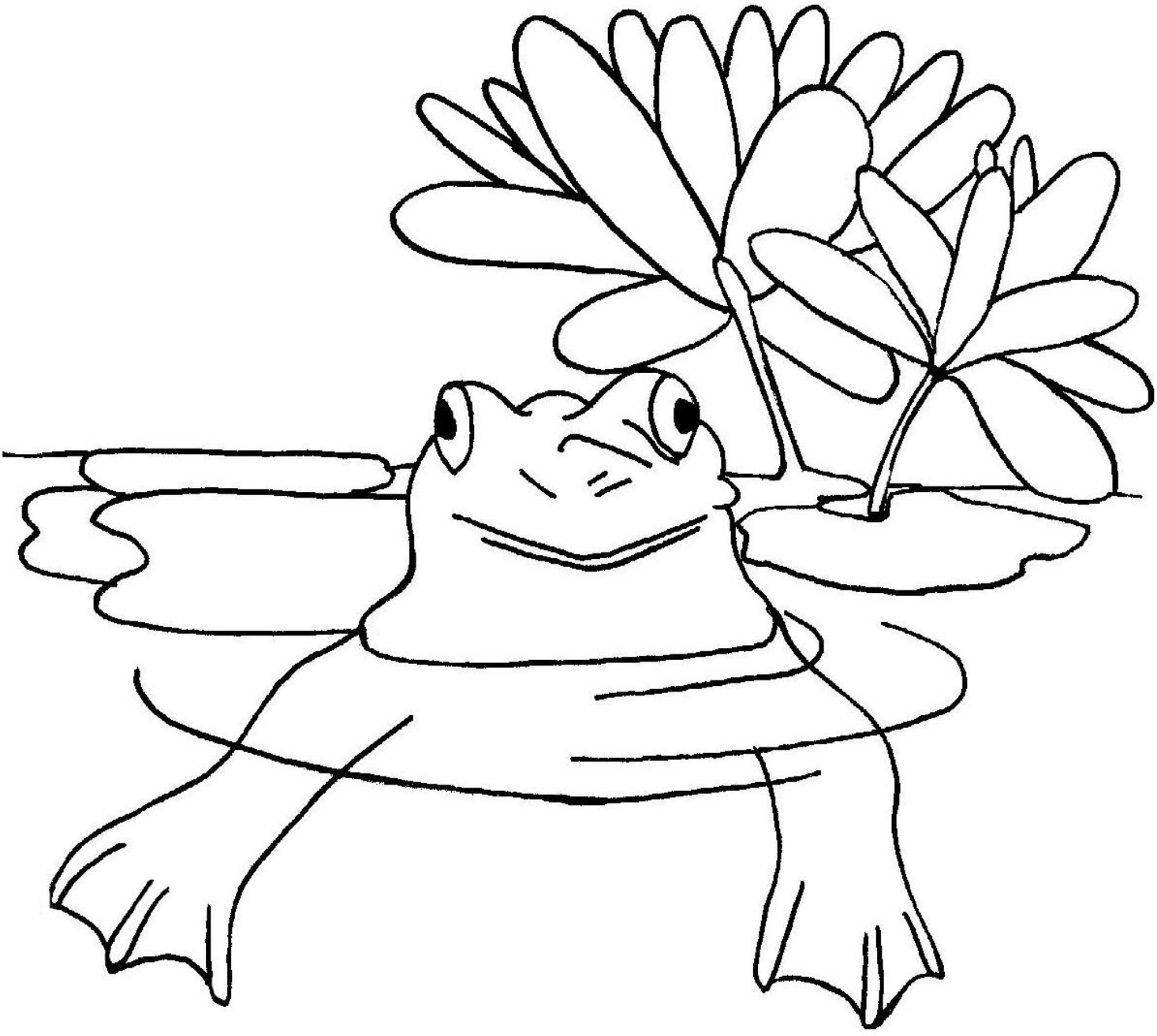
D Q S
L T C R
A W A T E R
M A Y F L Y F
I T U R T L E L
O E H O P O N D
B R C G O Z I A B
S S O I L M J B R
H N T L D D O D
E S K U F N U Q
D E R T Y N C L
R F I S H R M
V U O W Q S P
E V N A X P O
D F A N S

Soil
Watershed
Water
Pollution
Conserve
Fish
Frog
Turtle
Mayfly
Pond

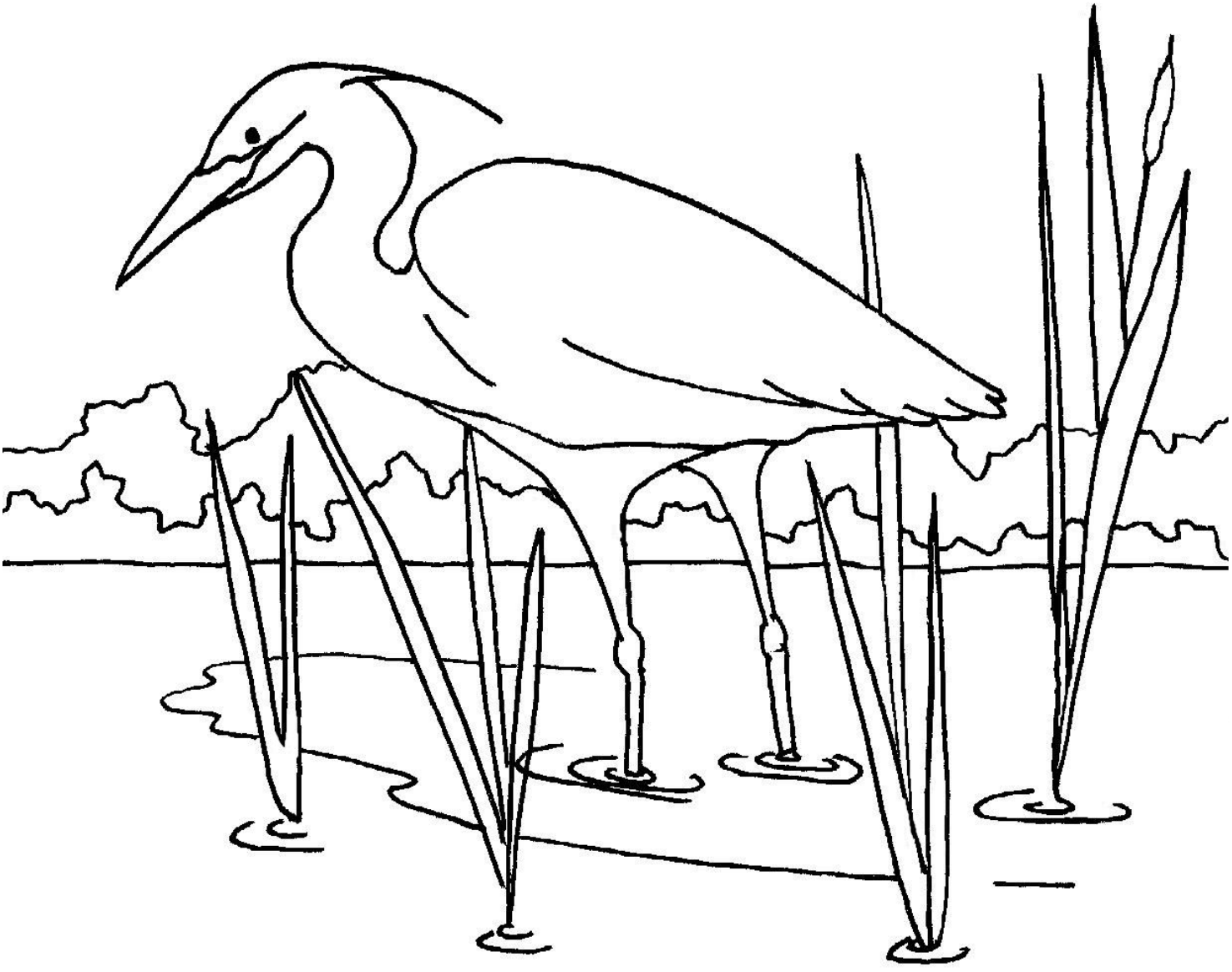
Hi! I am Karen the Kingfisher. I only eat fish. Fish need clean water to live so please keep their water clean.



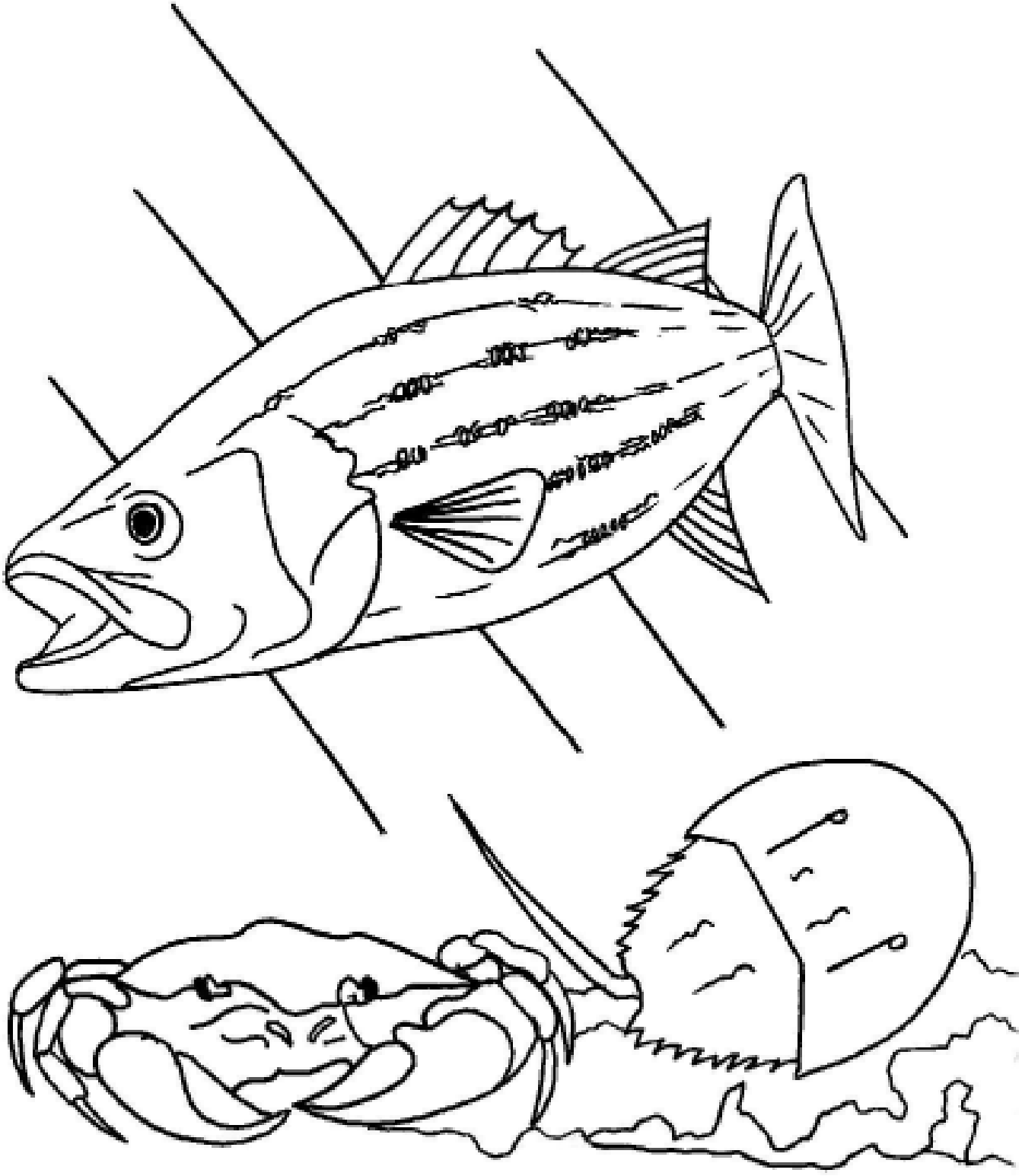
I am Frank the Frog. I need clean water to drink. I don't drink through my mouth. I drink water through my skin.



I am Henry the heron. I need clean water so that I can go fishing.



We all live in your waters and need clean water to stay healthy.



I am Ben. I need clean water to drink!

Chapter 245

STORMWATER MANAGEMENT

GENERAL REFERENCES

Drainage — See Ch. 121.

Erosion and sediment control — See Ch. 241.

Subdivision of land — See Ch. 250.

Zoning — See Ch. 286.

ARTICLE I
General Provisions

§ 245-1. Purpose.

The purpose of this ordinance is to provide for the health, safety, and general welfare of the citizens of the City of Colonial Heights through the regulation of non-storm water discharges to the storm drainage system to the maximum extent practicable as required by federal and state law. This ordinance establishes methods for controlling the introduction of pollutants into the municipal separate storm sewer system (MS4) in order to comply with requirements of the National Pollutant Discharge Elimination System (NPDES) permit process. The objectives of this ordinance are:

A. To regulate non-stormwater discharges to the municipal separate storm sewer system (MS4);

B. To prohibit Illicit Connections and Illegal Discharges to the municipal separate storm sewer system; and

C. To establish legal authority to carry out all inspection, surveillance, and monitoring procedures necessary to ensure compliance with this ordinance.

§ 245-2. Definitions.

For the purposes of this ordinance, the following shall mean:

AUTHORIZED ENFORCEMENT AGENCY — The City of Colonial Heights Department of Public Works.

BEST MANAGEMENT PRACTICES (BMPs) — Schedules of activities, prohibitions of practices, general good house keeping practices, pollution prevention and educational practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants directly or indirectly to stormwater, receiving waters, or stormwater conveyance systems. BMPs also include treatment practices, operating procedures, and practices to control site runoff, spillage or leaks, sludge or water disposal, or drainage from raw materials' storage.

CLEAN WATER ACT — The federal Water Pollution Control Act (33 U.S.C. § 1251 et seq.), and any subsequent amendments thereto.

CONSTRUCTION ACTIVITY — Construction projects resulting in land disturbance of one acre or more. Such activities include, but are not limited to, clearing and grubbing, grading, excavating and demolition.

HAZARDOUS MATERIALS — Any material, including any substance, waste, or combination thereof, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to, a substantial present or potential hazard to human health, safety, property, or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

ILLEGAL DISCHARGE — Any direct or indirect non-storm water discharge to the storm drain system, except as exempted in § 245-6 of this ordinance.

ILLICIT CONNECTIONS — An illicit connection is defined as either of the following:

Any drain or conveyance, whether on the surface or subsurface, which allows an illegal discharge to enter the storm drain system, including but not limited to any conveyances which allow any non-storm water discharge including sewage, process wastewater, and wash water to enter the storm drain system and any connections to the storm drain system from indoor drains and sinks, regardless of whether such drain or connection had been previously allowed, permitted, or approved by the authorized enforcement agency; or,

Any drain or conveyance connected from a commercial or industrial land use to the storm drain system which has not been documented in plans, maps, or equivalent records and approved by the authorized enforcement agency.

INDUSTRIAL ACTIVITY — Activities subject to NPDES Industrial Permits as defined in 40 CFR, Section 122.26(b)(14).

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORM WATER DISCHARGE PERMIT — Means a permit issued by EPA (or by a State under authority delegated pursuant to 33 USC § 1342(b)) that authorizes the discharge of pollutants to waters of the United States, whether the permit is applicable on an individual, group, or general area-wide basis.

NON-STORM WATER DISCHARGE — Any discharge to the storm drain system that is not composed entirely of storm water.

PERSON — Means any individual, association, organization, partnership, firm, corporation or other entity recognized by law and acting as either the owner or as the owner's agent.

PREMISES — Any building, lot, parcel of land, or portion of land whether improved or unimproved, including adjacent sidewalks and parking strips.

STORM DRAIN SYSTEM — Facilities by which storm water is collected and/or conveyed, including but not limited to any roads with drainage systems, municipal streets, gutters, curbs, inlets, piped storm drains, pumping facilities, retention and detention basins, natural and human-made or altered drainage channels, reservoirs, and other drainage structures.

STORM WATER — Any surface flow, runoff, and drainage consisting entirely of water from any form of natural precipitation, and resulting from such precipitation.

STORMWATER POLLUTION PREVENTION PLAN — A document which describes the Best Management Practices and activities to be implemented by a person or business to identify sources of pollution or contamination at a site and the actions to eliminate or reduce pollutant discharges to

stormwater, stormwater conveyance systems, and receiving waters to the maximum extent practicable.

WASTEWATER — Means any water or other liquid, other than uncontaminated storm water, discharged from a facility.

§ 245-3. Applicability.

This ordinance shall apply to all water entering the storm drain system generated on any developed or undeveloped lands unless explicitly exempted by the Department of Public Works.

§ 245-4. Responsibility for administration.

The Department of Public Works shall administer, implement, and enforce the provisions of this ordinance. Any powers granted or duties imposed upon the Department may be delegated in writing by the Director of the Department of Public Works to persons or entities acting in the beneficial interest of or in the employ of the City.

§ 245-5. Severability.

The provisions of this Chapter are hereby declared to be severable. If any provision, clause, sentence, or paragraph of this Chapter or the application thereof to any person, establishment, or circumstances shall be held invalid, such invalidity shall not affect the other provisions or application of this Chapter.

§ 245-6. Discharge prohibitions.

A. Prohibition of illegal discharges.

No person shall discharge or cause to be discharged into the municipal storm drain system or watercourses any materials that cause or contribute to a violation of applicable water quality standards, other than storm water.

The commencement, conduct or continuance of any illegal discharge to the storm drain system is prohibited except as follows:

(1) The following discharges are exempt from discharge prohibitions established by this Chapter: water line flushing or other potable water sources, landscape irrigation or lawn watering, diverted stream flows, rising ground water, ground water infiltration to storm drains, uncontaminated pumped ground water, foundation or footing drains (not including active groundwater dewatering systems), crawl space pumps, air conditioning condensation, springs, non-commercial washing of vehicles, natural riparian habitat or wetland flows, swimming pools (if dechlorinated - less than one PPM chlorine), fire fighting activities, and any other water source meeting applicable water quality standards.

(2) Discharges specified in writing by the authorized enforcement agency as being necessary to protect public health and safety.

(3) Dye testing is an allowable discharge, but requires a verbal notification to the Department of Public Works prior to the time of the test.

(4) The prohibition shall not apply to any non-storm water discharge permitted under an NPDES permit, waiver, or waste discharge order issued to the discharger and administered under the authority of the Federal Environmental Protection Agency, provided that the discharger is in full compliance with all requirements of the permit, waiver, or order and other applicable laws and regulations, and provided that written approval has been granted for any discharge to the storm drain system.

B. Prohibition of Illicit Connections.

(1) The construction, use, maintenance or continued existence of illicit connections to the storm drain system is prohibited.

(2) This prohibition expressly includes, without limitation, illicit connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.

(3) A person is considered to be in violation of this ordinance if the person connects a drain or conveyance to the Storm Drain System, or allows such a connection to continue.

§ 245-7. Suspension of storm drain system access.

A. Suspension of Illegal Discharges in Emergency Situations.

The Department of Public Works may, without prior notice, suspend discharge access to a person when such suspension is necessary to stop an actual or threatened discharge which presents or may present imminent and substantial danger to the environment, or to the health or welfare of persons, or to the Storm Drain System or waters of the United States. If the violator fails to comply with a suspension order issued in an emergency, the Department of Public Works may take such steps as deemed necessary to prevent or minimize damage to the Storm Drain System or waters of the United States, or to minimize danger to persons.

B. Suspension due to the Detection of Illegal Discharge.

Any person discharging to the Storm Drain System in violation of this Chapter may have its access terminated if such termination would abate or reduce an illegal discharge. The authorized enforcement agency will notify a violator of the proposed termination of its access to the Storm Drain System. The violator may petition the Department of Public Works for a reconsideration and hearing.

A person commits an offense if the person reinstates access to premises terminated pursuant to this Section, without the prior approval of the Department of Public Works.

§ 245-8. Industrial or construction activity discharges.

Any person subject to an industrial or construction activity NPDES storm water discharge permit shall comply with all provisions of such permit. Proof of compliance with such permit may be required in a form acceptable to the Department of Public Works prior to allowing discharges to the Storm Drain System.

§ 245-9. Monitoring of discharges.

A. Applicability.

This section applies to all facilities that have storm water discharges associated with industrial activity, including construction activity.

B. Access to facilities.

(1) The Department of Public Works shall be permitted to enter and inspect facilities subject to regulation under this Chapter as often as may be necessary to determine compliance with this Chapter. If a discharger has security measures in force which require proper identification and clearance before entry into its premises, the discharger shall make the necessary arrangements to allow access to representatives of the Department of Public Works.

(2) Facility operators shall allow the Department of Public Works ready access to all parts of the premises for the purposes of inspection, sampling, examination and copying of records that must be kept under the conditions of an NPDES permit to discharge storm water, and the performance of any additional duties as defined by state and federal law.

(3) The Department of Public Works shall have the right to set up on any permitted facility such devices as are necessary in the Department's opinion to conduct monitoring and/or sampling of the facility's stormwater discharge.

(4) The Department of Public Works has the right to require the discharger to install monitoring equipment as necessary. The facility's sampling and monitoring equipment shall be maintained at all times in a safe and proper operating condition by the

discharger at its own expense. All devices used to measure stormwater flow and quality shall be calibrated to ensure their accuracy.

(5) Any temporary or permanent obstruction to safe and easy access to the facility to be inspected and/or sampled shall be promptly removed by the operator at the written or oral request of the Department of Public Works and shall not be replaced. The costs of clearing such access shall be borne by the operator.

(6) Unreasonable delays in allowing the Department of Public Works access to a permitted facility is a violation of a stormwater discharge permit and of this Chapter. A person who is the operator of a facility with a NPDES permit to discharge storm water associated with industrial activity commits an offense if the person denies the Department reasonable access to the permitted facility for the purpose of conducting any activity authorized or required by this Chapter.

(7) If a representative of the Department of Public Works has been refused access to any part of the premises from which storm water is discharged, and he is able to demonstrate probable cause to believe that there may be a violation of this Chapter, or that there is a need to inspect or sample as part of a routine inspection and sampling program designed to verify compliance with this Chapter or any order issued hereunder, or to protect the overall public health, safety, and welfare of the community, then the Department may seek issuance of a search warrant from any court of competent jurisdiction.

§ 245-10. Requirement to prevent, control, and reduce storm water pollutants by the use of best management practices.

The Department of Public Works will adopt requirements identifying Best Management Practices for any activity, operation, or facility that may cause or contribute to pollution or contamination of storm water, the storm drain system, or waters of the U.S. The owner or operator of a commercial or industrial establishment shall provide, at its own expense, reasonable protection from accidental discharge of prohibited materials or other wastes into the storm drain system or watercourses through the use of these structural and non-structural BMPs. Further, any person responsible for a property or premise, which is, or may be, the source of an illegal discharge, may be required to implement, at the person's expense, additional structural and non-structural BMPs to prevent the further discharge of pollutants to the separate storm sewer system. Compliance with all terms and conditions of a valid NPDES permit authorizing the discharge of storm water associated with industrial activity, to the extent practicable, shall be deemed compliance with the provisions of this section. These BMPs shall be part of a stormwater pollution prevention plan (SWPP) as necessary for compliance with requirements of the NPDES permit.

§ 245-11. Watercourse protection.

Every person owning property through which a watercourse passes, or such person's lessee, shall keep and maintain that part of the watercourse within the property free of trash, debris, excessive vegetation, and other materials that would pollute or contaminate the watercourse. In addition, the owner or lessee shall maintain existing privately owned structures within or adjacent to a watercourse, so that such structures will not become a hazard to the use, function, or physical integrity of the watercourse.

§ 245-12. Notification of spills.

Notwithstanding other requirements of law, as soon as any person responsible for a facility or operation, or responsible for emergency response for a facility or operation, has information of any known or suspected release of materials which are resulting or may result in illegal discharges or pollutants discharging into storm water, the Storm Drain System, or water of the U.S., such person shall take all necessary steps to ensure the discovery, containment, and cleanup of the release. In the event of such a release of hazardous materials, the person shall immediately notify emergency response agencies of the occurrence via emergency dispatch services. In the event of a release of non-hazardous materials, the person shall notify the Department of Public Works in person or by phone or facsimile no later than the next business day. Notifications in person or by phone shall be confirmed by written notice addressed and mailed to the Department of Public Works within three business days of the phone notice. If the discharge of prohibited materials emanates from a commercial or industrial establishment, the owner or operator of such establishment shall also retain an on-site written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least three years.

§ 245-13. Enforcement.

Whenever the Department of Public Works finds that a person has violated a prohibition or failed to meet a requirement of this Chapter, the Department may order compliance by written notice of violation to the responsible person. Such notice may require without limitation:

A. The performance of monitoring, analyses, and reporting;

B. The elimination of illicit connections or illegal discharges;

C. That violating discharges, practices, or operations shall cease and desist;

D. The abatement or remediation of storm water pollution or contamination hazards and the restoration of any affected property;

E. Payment of a fine to cover administrative and remediation costs; and

F. The implementation of source control or treatment BMPs.

If abatement of a violation or restoration of affected property is required, the notice shall set forth a deadline within which such remediation or restoration must be completed. The notice shall further advise that, should the violator fail to remediate or restore within the established deadline, representatives of the Department of Public Works or a designated contractor shall enter upon the subject property; and they are authorized to take all measures necessary to abate the violation and/or restore the property. It shall be unlawful for any person, owner, agent or person in possession of any premises to refuse to allow a representative of the Department or its designated contractor to enter upon the premises for the purposes set forth above. The expense of such abatement and restoration shall be charged to the violator.

§ 245-14. Appeal of notice of violation.

Any person receiving a notice of violation may appeal the determination of the Department of Public Works. The notice of appeal must be received within three days from the date of the notice of violation. Hearing on the appeal before the City Manager or his designee shall take place within 12 days from the date of receipt of the notice of appeal. The City Manager or his designee shall affirm, modify, or reverse the decision of the Department of Public Works; and the decision of the City Manager or his designee shall be final.

§ 245-15. Enforcement measures after appeal.

If the City Manager's decision in an appeal is to affirm, wholly or in part, the decision of the Department of Public Works, then representatives of the Department or a designated contractor shall enter upon the subject private property and are authorized to take all measures necessary to abate the violation and/or restore the property. Provided however, the City Manager, at his sole discretion, may stay such entry and action by the Department or its contractor for a specified number of days if he determines that good cause exists for such a stay. It shall be unlawful for any person, owner, agent or person in possession of any premises to refuse to allow a representative of the Department or its designated contractor to enter upon the premises for the purposes set forth above.

§ 245-16. Cost of abatement of the violation.

Within 14 days after abatement of the violation, the owner of the property shall be notified of the cost of abatement, including administrative costs. The property owner may file a written protest objecting to the amount of the assessment within five days. If the amount due is not paid within a timely manner as determined by the decision of the City Manager or by the expiration of the time in which to file an appeal, the charges shall become a special assessment against the property and shall constitute a lien on the property for the amount of the assessment.

Any person violating any of the provisions of this article shall become liable to the City by reason of such violation. The liability shall be paid in not more than 12 equal payments. Interest at the rate of 3.5 percent per annum shall be assessed on the balance beginning on the 1st day following discovery of the violation.

§ 245-17. Compensatory action.

In lieu of enforcement proceedings, penalties, and remedies authorized by this Chapter, the Department of Public Works may impose upon a violator alternative compensatory actions, such as storm drain stenciling, attendance at compliance workshops, and creek cleanup.

§ 245-18. Penalties.

A. Any person violating any provision of this Chapter shall be subject to a civil penalty up to $32,500 for each violation; which shall be determined at the trial court's discretion. Each day of violation of any requirement shall be a separate offense. The Department of Public Works may issue a summons for collection of the civil penalty, and the case may be prosecuted in the circuit court. Any civil penalties assessed by the court as a result of a summons issued by the Department shall be paid into the City's treasury. Such civil penalties paid into the City treasury shall be used to minimize, prevent, manage, or mitigate pollution of the City's waters and abate environmental pollution in the City in such way as the court orders.

B. With the consent of any person who has violated, or failed, neglected or refused to obey this Chapter, any condition of a permit, or a regulation or order of a State agency, the Department of Public Works may provide, in an order issued against such person, for the payment of civil charges in specific sums for violations, not exceeding the limit specified in subsection A of this section. Such civil charges shall be instead of any appropriate civil penalty that can be imposed under subsection A. Any civil charges collected shall be paid to the City treasury pursuant to subsection A.

C. The Department of Public Works may apply to the circuit court to enjoin a violation or a threatened violation of this Chapter or any State statute or regulation without the necessity of showing that an adequate remedy at law does not exist.

D. Any person who willfully and knowingly violates any provision of this Chapter is guilty of a Class I misdemeanor.

§ 245-19. Remedies not exclusive.

The remedies listed in this Chapter are not exclusive of any other remedies available under any applicable federal, state or local law; and it is within the discretion of the Department of Public Works to seek cumulative remedies.

ARTICLE II
Stormwater Management Utility

§ 245-20. Findings and determinations.

A. The City of Colonial Heights has a system of manmade and natural components of a stormwater management infrastructure to both limit and manage the volume of stormwater to mitigate flood events and to minimize degradation of the City's waterways through stormwater quality management.

B. Stormwater runoff is associated with all improved properties in the City, whether residential or nonresidential, and the individual property impacts of runoff are directly related to the amount of impervious surface on the property and land-disturbing activities on property.

C. The elements of the stormwater management infrastructure provide benefit and service to properties within the City through direct protection of property, through mitigation of flooding of critical components of the infrastructure, through protection of the City's natural environment and through protection of public health and safety.

D. The costs of monitoring, operating, maintaining, and constructing the stormwater system required in the City, both to meet new regulations and to address identified flood event needs, should therefore be allocated, to the extent practicable, to all property owners based on their runoff contribution to the stormwater management system.

§ 245-21. Definitions.

The following words and terms used in this article shall have the following meanings:

AGRICULTURAL PROPERTY — Land used for the tilling, planting or harvesting of agricultural, horticultural or forest crops or land used for raising livestock.

DEVELOPED MULTI-FAMILY RESIDENTIAL PROPERTY — Developed property containing more than one residence or dwelling units, and accessory uses related to but subordinate to the purpose of providing permanent dwelling facilities. Such property shall include duplexes, triplexes, quadruplexes, townhouses apartments and condominiums.

DEVELOPED NONRESIDENTIAL PROPERTY - — Developed property which does not serve a primary purpose of providing permanent dwelling units. Such property shall include, but not be limited to, commercial properties, industrial properties, parking lots, recreational and cultural facilities, hotels, offices and churches.

DEVELOPED PROPERTY — Real property which has been altered from its "natural" state by the addition of any improvements such as buildings, structures, or other impervious surfaces. For new construction, property

shall be considered developed pursuant to this subsection upon certification of the final building permit inspection.

DEVELOPED SINGLE-FAMILY RESIDENTIAL PROPERTY — A developed lot or parcel containing one residence or dwelling unit, and accessory uses related to but subordinate to the purpose of providing permanent dwelling facilities. Such property shall include houses and mobile homes.

EQUIVALENT RESIDENTIAL UNIT or ERU — The equivalent impervious area of a developed single-family residential property per dwelling unit located within the City based on the statistical average horizontal impervious area of a single-family residence in the City. An equivalent residential unit (ERU) equals 2,656 square feet of impervious surface area.

ERU RATE — The utility fee charged on an equivalent residential unit.

IMPERVIOUS SURFACE AREA — A surface which is compacted or covered with material that is highly resistant to infiltration by water, including, but not limited to, most conventionally surfaced streets, roofs, sidewalks, parking lots, and other similar structures.

REVENUES — All rates, fees, assessments, rentals or other charges or other income received by the utility, in connection with the management and operation of the system, including amounts received from the investment or deposit of moneys in any fund or account and any amounts contributed by the City, fees-in-lieu-of provided by developers or individual residents, and the proceeds from sale of utility bonds.

STORMWATER MANAGEMENT SYSTEM or SYSTEM — The stormwater management infrastructure and equipment of the City and all improvements thereto for stormwater control in the City. Infrastructure and equipment shall include structural and natural stormwater control systems of all types, including, without limitation, retention basins, sewers, conduits, pipelines, pumping and ventilation stations, and other plants, structures, and real and personal property used for support of the system. The system does not include privately owned farm ditches and other private drainage systems.

STORMWATER MANAGEMENT UTILITY or UTILITY — The enterprise fund created by this section to operate, maintain and improve the City's stormwater management system.

UNDEVELOPED PROPERTY — Any parcel which has not been altered from its natural state to disturb or alter the topography or soils on the property in a manner which substantially reduces the rate of infiltration of stormwater into the earth.

UTILITY FEES — The monthly service charges based upon the ERU rate applied to property owners or occupants, including condominium unit owners or tenants (when the tenant or occupant is the party to whom water and sewer service is billed) of developed residential property, developed multi-family residential property and developed nonresidential property, all as more fully described in § 245-23.

§ 245-22. Establishment of stormwater management utility.

A. The stormwater management utility is established to provide for the general welfare, health, and safety of the City and its residents.

B. The utility shall deposit in a separate ledger account all revenues collected pursuant to this section. The funds deposited shall be used exclusively to provide services and facilities related to the stormwater management system. The deposited revenues may be used for the following:

(1) Acquisition of real or personal property, and interest therein necessary to construct, operate and maintain stormwater control facilities;

(2) The cost of administration of such programs, to include the establishment of reasonable operating and capital reserves to meet unanticipated or emergency requirements of the utility;

(3) Engineering and design, debt retirement, construction costs for new facilities, and enlargement or improvement of existing facilities;

(4) Facility maintenance;

(5) Monitoring of stormwater control devices; and

(6) Pollution control and abatement, consistent with City, state and federal regulations for water pollution control and abatement.

§ 245-23. Imposition of utility fee. [Amended 6-12-2018 by Ord. No. 18-21]

A monthly $4 fee shall be charged to provide for a balanced operating or capital improvement budget, or both, for maintenance and/or improvement of the stormwater management system. The monthly fee shall be charged to owners of all developed property in the City; provided, however, where a tenant or occupant is the person to whom water or sewer service, or both, are billed, the utility fee may be charged to such tenant or occupant.

A. The monthly $4 fee referenced in the preceding paragraph has been established by classifying all properties in the City into one of the following classes:

(1) Developed single-family residential property;

(2) Developed multi-family residential property;

(3) Developed nonresidential property;

(4) Undeveloped property; or

(5) Agricultural property.

B. The monthly utility fee for developed single-family residential property shall equal the ERU rate.

C. The monthly utility fee for developed multi-family residential property shall be the ERU rate multiplied by the number of residences or dwelling units located on the lot or parcel.

D. The monthly utility fee for developed nonresidential property shall be the ERU rate multiplied by the numerical factor obtained by dividing the total impervious surface area of a developed nonresidential property by one ERU (2,656 square feet). The numbered factor will be rounded to the nearest tenth of a unit. The minimum utility fee for any developed nonresidential property shall equal the ERU rate.

E. The utility fee for vacant developed property, both residential and nonresidential, shall be the same as that for occupied property of the same class.

F. Undeveloped property shall be exempt from the utility fee.

G. Agricultural property shall be exempt from the utility fee. Provided however, each developed residential unit situated on a parcel devoted to agricultural use shall be charged a fee equal to the ERU rate.

§ 245-24. Billing and payment, interest, liens.

A. The utility fee is to be paid by the owner of each lot or parcel subject to the utility fee; provided, however, where a tenant or occupant is the person to whom water or sewer service, or both, is billed, the utility fee may be charged to such tenant or occupant. In any case in which a tenant or occupant fails to pay utility fees, the delinquent utility fees shall be collected from the owner of the property. All properties, except undeveloped property, shall be rendered bills or statements for stormwater services. Such bills or statements may be combined with water and sewer bills levied pursuant to Chapter 238, Sewers and Sewage Disposal, and Chapter 277, Water, provided that all charges shall be separately stated. The combined bill shall be issued for one total amount. The Director of Finance is hereby authorized and directed to create policies and procedures for the efficient billing and collection of the combined bill, including a policy for allocating payments to the separate charges stated on the combined bill.

B. The bills or statements shall include a date by which payment shall be due. All bills for charges prescribed by this article shall be due and payable 30 days from the date of the bill and shall be deemed delinquent if not paid in full within such time.

C. Any bill which has not been paid by the due date shall be deemed delinquent and the account shall be collected by any means available to the City. Notice to the owner shall be provided in every case when stormwater charges incurred by a tenant or occupant become more than 90 days delinquent. All payments and interest due may be recovered by action at law or suit in equity. Unpaid fees and interest accrued shall constitute a lien against the property, ranking on a parity

with liens for unpaid taxes. Records of all unpaid fees and interest, indexed by the name of the record owner of the real estate, shall be maintained in the City Treasurer's Office.

D. In the event charges are not paid when due, interest thereon shall commence on the due date and accrue at the rate of 10% per annum until such time as the overdue payment and interest is paid.

E. When developed properties are brought into the utility, fees will accrue commencing with the release of the final plumbing inspection for the property. In the absence of a plumbing inspection, utility fees will accrue commencing with release of the final building inspection for the property. A bill will be issued in the next billing cycle and will be prorated for the number of days in which service was provided.

F. In the event of alterations or additions to developed multi-family property or developed nonresidential property which alter the amount of impervious surface area, the utility fees will be adjusted upon release of the final plumbing inspection. In the absence of a plumbing inspection, utility fees will be adjusted upon release of the final building inspection. A bill will be issued in the next billing cycle and will be prorated for the number of days in which service was provided.

§ 245-25. Adjustment of fees, exemptions, credits.

A. Full waiver of the utility fee shall be provided to properties owned by federal, state, and local government agencies when those agencies own and provide for maintenance of storm drainage and stormwater control facilities.

B. Any owner, tenant or occupant who has paid his utility fees and who believes his utility fees to be incorrect may submit an adjustment request to the City Manager or his designee. Adjustment requests shall be made in writing setting forth, in detail, the grounds upon which relief is sought. The responsibility for providing information that supports a change to the stormwater fee lies solely with the property owner. Any dispute of the impervious area determined for a property must be proven using drawings and measurements certified and sealed by a licensed engineer or Class B surveyor. Response to such adjustment requests, whether providing an adjustment or denying an adjustment, shall be made to the requesting person by the City Manager or his designee within 60 days of receipt of the request for adjustment.

C. The City may provide a system of credits to reduce utility fees for properties on which stormwater control measures substantially mitigate the peak discharge or runoff pollution flowing from such properties or substantially decrease the City's cost of maintaining the stormwater management system. The Department of Public Works will develop written policies to implement the credit system.

(1) No credit will be authorized until the City Council approves written policies to implement the system of credits; a copy of the approved policies shall be on file with the City Clerk. The City's policies may make credits retroactive to the date utility fees were initiated. Any bill charges requiring adjustments must be applied through the utility billing system. No credit will be granted for more than three past years. Nothing shall prevent the City Council from modifying the adopted system of credits, and such modifications may apply to holders of existing credits.

(2) Each credit allowed against the utility fee is conditioned on the continuing operation and functioning of the stormwater control measure as designed; credited stormwater control measures must comply with all applicable laws, ordinances and regulations, and credits may be rescinded for noncompliance with these standards.

(3) Each credit for which a customer applies shall be subject to review and approval by the City Manager or his designee. The City Manager may approve or reject any application for a credit in whole or in part.

(4) Credits shall only be applied to developed lands containing the credited stormwater control measure.

§ 245-26. Limitations of responsibility.

A. The City shall be responsible only for the portions of the drainage system which are in City maintained street rights-of-way and permanent storm drainage easements conveyed to and accepted by the City. Repairs and improvements to the drainage system shall be in accordance with established standards, policies, and schedules.

B. The City's acquisition of permanent storm drainage easements and/or the construction or repair by the City of stormwater control measures and drainage facilities does not constitute a warranty against stormwater hazards, including, but not limited to, flooding, erosion, or standing water.

§ 245-27. Severability.

The provisions of this article shall be deemed severable; and if any of the provisions hereof are adjudged to be invalid or unenforceable, the remaining portions of this article shall remain in full force and effect and their validity unimpaired.

ARTICLE III
Virginia Stormwater Management Program (VSMP)
[Added 6-10-2014 by Ord. No. 14-1[1]]

§ 245-28. Purpose and authority.

A. The purpose of this article is to ensure the general health, safety, and welfare of the citizens of Colonial Heights, Virginia, and protect the quality and quantity of state waters from the potential harm of unmanaged stormwater, including protection from a land-disturbing activity causing unreasonable degradation of properties, water quality, stream channels, and other natural resources, and to establish procedures whereby stormwater requirements related to water quality and quantity shall be administered and enforced.

B. This article is adopted pursuant to Article 2.3 (§ 62.1-44.15.27 et seq.) of Chapter 3.1 of Title 62.1 of the Code of Virginia.

§ 245-29. Definitions.

In addition to the definitions set forth in the Virginia Stormwater Management regulations, as amended, which are expressly adopted and incorporated herein by reference, the following words and terms used in this article have the following meanings unless otherwise specified herein. Where definitions differ, those incorporated herein shall have precedence.

AGREEMENT IN LIEU OF A STORMWATER MANAGEMENT PLAN — A contract between the VSMP authority and the owner or permittee that specifies methods that shall be implemented to comply with the requirements of a VSMP for the construction of a single-family residence; such contract may be executed by the VSMP authority in lieu of a stormwater management plan.

ADMINISTRATOR — The Virginia Stormwater Management Program ("VSMP") authority, including the City staff person or department responsible for administering the VSMP on behalf of the City of Colonial Heights, VA.

APPLICANT — Any person submitting an application for a permit or requesting issuance of a permit under this article.

BEST MANAGEMENT PRACTICE or BMP — Schedules of activities, prohibitions of both structural and nonstructural practices, maintenance procedures, and other management practices to prevent or reduce the pollution of surface waters and groundwater systems from the impacts of land-disturbing activities.

CHESAPEAKE BAY PRESERVATION ACT LAND-DISTURBING ACTIVITY — A land-disturbing activity, including clearing, grading, or excavation, that results in a land disturbance equal to or greater than 2,500 square feet and

1. **Editor's Note: This ordinance stated that it would be in full force and effect as of 7-1-2014.**

less than one acre in all areas of jurisdictions so designated as subject to the regulations adopted pursuant to the Chesapeake Bay Preservation Act, which is located in Article 2.5 of Chapter 3.1 of Title 62.1 of the Code of Virginia.

CLEAN WATER ACT or CWA — The federal Clean Water Act (33 U.S.C. 1251 et seq.), formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972, Public Law 92-500, as amended by Public Law 95-217, Public Law 95-576, Public Law 96-483, and Public Law 97-117, or any subsequent revisions thereto.

COMMON PLAN OF DEVELOPMENT OR SALE — A contiguous area where separate and distinct construction activities may be taking place at different times on different schedules.

CONTROL MEASURE — Any best management practice, or stormwater facility, or other method used to minimize discharge of pollutants to state waters.

DEPARTMENT — The State Department of Environmental Quality.

DEVELOPMENT — Land disturbance and the resulting landform associated with the construction of residential, commercial, industrial, institutional, recreational, transportation or utility facilities or structures or the clearing of land for nonagricultural or nonsilvicultural purposes.

GENERAL PERMIT — The state permit titled General Permit for Discharges of Stormwater From Construction Activities found in Part XIV (9VAC25-880-1 et seq.) of the Regulations authorizing a category of discharges under the CWA and the Act within a geographical area of the Commonwealth of Virginia.

LAND DISTURBANCE or LAND-DISTURBING ACTIVITY — A man-made change to the land surface that potentially changes its runoff characteristics, including clearing, grading, or excavation, except that the term shall not include those exemptions specified in § 245-30C of this article.

LAYOUT — A conceptual drawing sufficient to provide for the specified stormwater management facilities required at the time of approval.

MINOR MODIFICATION — An amendment to an existing General Permit before its expiration not requiring extensive review and evaluation, including, but not limited to, changes in EPA promulgated test protocols, increased monitoring frequency requirements, changes in sampling locations, and changes to compliance dates within the overall compliance schedules. A minor General Permit modification or amendment does not substantially alter General Permit conditions, substantially increase or decrease the amount of surface water impacts, increase the size of the operation, or reduce the capacity of the facility to protect human health or the environment.

OPERATOR — The owner or operator of any facility or activity subject to regulation under this article.

PERMIT or VSMP AUTHORITY PERMIT — An approval to conduct a land-disturbing activity issued by the Administrator for the initiation of a land-disturbing activity, in accordance with this article, and which may only be issued after evidence of General Permit coverage has been provided by the Department.

PERMITTEE — The person to whom the VSMP Authority Permit is issued.

PERSON — Any individual, corporation, partnership, association, state, municipality, commission, or political subdivision of a state, governmental body, including federal, state, or local entity as applicable, any interstate body or any other legal entity.

REGULATIONS — The Virginia Stormwater Management Program (VSMP) Permit Regulations, 9VAC25-870, as amended.

SITE — The land or water area where any facility or land-disturbing activity is physically located or conducted, including adjacent land used or preserved in connection with the facility or land-disturbing activity. Areas channelward of mean low water in tidal Virginia shall not be considered part of a site.

STATE — The Commonwealth of Virginia.

STATE BOARD — The State Water Control Board.

STATE PERMIT — An approval to conduct a land-disturbing activity issued by the State Board in the form of a state stormwater individual permit or coverage issued under a state General Permit or an approval issued by the State Board for stormwater discharges from an MS4. Under these state permits, the Commonwealth imposes and enforces requirements pursuant to the federal Clean Water Act and its regulations, and the Virginia Stormwater Management Act and its Regulations.

STATE WATER CONTROL LAW — Chapter 3.1 (§ 62.1-44.2 et seq.) of Title 62.1 of the Code of Virginia.

STATE WATERS — All water, on the surface and under the ground, wholly or partially within or bordering the Commonwealth or within its jurisdiction, including wetlands.

STORMWATER — Precipitation that is discharged across the land surface or through conveyances to one or more waterways and that may include stormwater runoff, snow melt runoff, and surface runoff and drainage.

STORMWATER MANAGEMENT PLAN — A document(s) containing material describing methods for complying with the requirements of § 245-33 of this article.

STORMWATER POLLUTION PREVENTION PLAN or SWPPP — A document that is prepared in accordance with good engineering practices and that identifies potential sources of pollutants that may reasonably be expected to affect the quality of stormwater discharges from the construction site, and otherwise meets the requirements of this article. In addition, the document shall identify and require the implementation of control measures, and shall include, but not be limited to, the inclusion of, or the incorporation by

reference of, an approved erosion and sediment control plan, an approved stormwater management plan, and a pollution prevention plan.

SUBDIVISION — The same as defined in § 250-2 of the City of Colonial Heights Subdivision Ordinance.

TOTAL MAXIMUM DAILY LOAD or TMDL — The sum of the individual wasteload allocations for point sources, load allocations for nonpoint sources, natural background loading and a margin of safety. TMDLs can be expressed in terms of either mass per time, toxicity, or other appropriate measure. The TMDL process provides for point versus nonpoint source tradeoffs.

VIRGINIA STORMWATER BMP CLEARINGHOUSE WEBSITE — A website that contains detailed design standards and specifications for control measures that may be used in Virginia to comply with the requirements of the Virginia Stormwater Management Act and associated regulations.

VIRGINIA STORMWATER MANAGEMENT ACT or ACT — Article 2.3 (§ 62.1-44.15:24 et seq.) of Chapter 3.1 of Title 62.1 of the Code of Virginia.

VIRGINIA STORMWATER MANAGEMENT PROGRAM AUTHORITY or VSMP AUTHORITY — An authority approved by the State Board after September 13, 2011, to operate a Virginia Stormwater Management Program.

VIRGINIA STORMWATER MANAGEMENT PROGRAM or VSMP — A program approved by the State Board after September 13, 2011, that has been established by a locality to manage the quality and quantity of runoff resulting from land-disturbing activities and shall include such items as local ordinances, rules, permit requirements, annual standards and specifications, policies and guidelines, technical materials, and requirements for plan review, inspection, enforcement, where authorized in this article, and evaluation consistent with the requirements of this article and associated regulations.

§ 245-30. Stormwater permit requirement; exemptions.

A. Except as provided herein, no person may engage in any land-disturbing activity until a permit application has been submitted to the City of Colonial Heights that includes the VSMP permit registration statement, if such statement is required; and after July 1, 2014, a stormwater management plan or an executed agreement in lieu of a stormwater management plan; and approval from the City to begin land disturbance.

B. Chesapeake Bay Preservation Act land-disturbing activities shall not require the completion of a registration statement or require coverage under the General Permit for Discharges of Stormwater from Construction Activities. A Chesapeake Bay Preservation Act land-disturbing activity shall be subject to an erosion and sediment control plan consistent with the requirements of the Erosion and Sediment Control Ordinance, a stormwater management plan as outlined under

Section 16, the technical criteria and administrative requirements for land-disturbing activities outlined in § 245-36, and the requirements for control measures' long-term maintenance outlined under § 245-37. Exceptions to these technical criteria and administrative requirements may be requested.

C. Notwithstanding any other provisions of this article, the following activities are exempt, unless otherwise required by federal law:

(1) Permitted surface or deep mining operations and projects, or oil and gas operations and projects conducted under the provisions of Title 45.1 of the Code of Virginia;

(2) Clearing of lands specifically for agricultural purposes and the management, tilling, planting, or harvesting of agricultural, horticultural, or forest crops, livestock feedlot operations, or as additionally set forth by the State Board in regulations, including engineering operations as follows: construction of terraces, terrace outlets, check dams, desilting basins, dikes, ponds, ditches, strip cropping, lister furrowing, contour cultivating, contour furrowing, land drainage, and land irrigation; however, this exception shall not apply to harvesting of forest crops unless the area on which harvesting occurs is reforested artificially or naturally in accordance with the provisions of Chapter 11 (§ 10.1-1100 et seq.) of Title 10.1 of the Code of Virginia or is converted to a bona fide agricultural or improved pasture use as described in Subsection B of § 10.1-1163 of Article 9 of Chapter 11 of Title 10.1 of the Code of Virginia;

(3) Single-family residences separately built, including additions or modifications to existing single-family detached residential structures, within or outside of a common plan of development or sale are hereby exempt from having a registration statement; however, such projects must adhere to the requirements of the General Permit. The City may regulate single-family residences in Chesapeake Bay Protection areas where land disturbance exceeds 2,500 square feet in accordance with the Chesapeake Bay Preservation Act (§ 62.1-44.15:67 et seq.);

(4) Land-disturbing activities that disturb less than one acre of land area except for land-disturbing activity exceeding an area of 2,500 square feet in all areas of the City designated as subject to the Chesapeake Bay Preservation area Designation and Management Regulation (9VAC25-830) adopted pursuant to the Chesapeake Bay Preservation Act (§ 62.1-44.15:67 et seq.) or activities that are part of a larger common plan of development or sale that is one acre or greater of disturbance;

(5) Discharges to a sanitary sewer or a combined sewer system;

(6) Activities under a state or federal reclamation program to return an abandoned property to an agricultural or open land use;

(7) Routine maintenance that is performed to maintain the original line and grade, hydraulic capacity or original construction of the project. The paving of an existing road with a compacted or impervious surface and reestablishment of existing associated ditches and shoulders shall be deemed routine maintenance if performed in accordance with this subsection; and

(8) Conducting land-disturbing activities in response to a public emergency where the related work requires immediate authorization to avoid imminent endangerment to human health or the environment. In such situations, the Administrator shall be advised of the disturbance within seven days of commencing the land-disturbing activity; and compliance with the administrative requirements of Subsection A is required within 30 days of commencing the land-disturbing activity.

§ 245-31. Stormwater Management Program established; submission and approval of plans; prohibitions.

A. The City of Colonial Heights hereby establishes a Virginia Stormwater Management Program for land-disturbing activities and adopts the applicable regulations that specify standards and specifications for VSMPs promulgated by the State Board for the purposes set out in § 245-28 of this article.

B. The Colonial Heights City Council hereby designates the Director of Public Works as the Administrator of the Virginia Stormwater Management Program.

C. No VSMP authority permit shall be issued by the Administrator until the following items have been submitted to and approved by the Administrator as prescribed herein:

(1) A permit application that includes a General Permit registration statement;

(2) An erosion and sediment control plan approved in accordance with Chapter 241 of the Code of the City of Colonial Heights; and

(3) A Stormwater Management Plan that meets the requirements of § 245-33 of this article.

D. No VSMP authority permit shall be issued until evidence of General Permit coverage is obtained.

E. No VSMP authority permit shall be issued until the fees required to be paid pursuant to § 245-42, are received.

F. No VSMP authority permit shall be issued unless and until the permit application and attendant materials and supporting documentation demonstrate that all land clearing, construction, disturbance, land

development and drainage will be done according to the approved permit.

G. No grading, building or other local permit shall be issued for a property unless a VSMP authority permit has been issued by the Administrator.

§ 245-32. Stormwater Pollution Prevention Plan; contents of plans.

A. The Stormwater Pollution Prevention Plan (SWPPP) shall include the content specified by Section 9VAC25-870-54 and must also comply with the requirements and general information set forth in Section 9VAC25-880-70, Section II [Stormwater Pollution Prevention Plan] of the General Permit.

B. The SWPPP shall be amended by the operator whenever there is a change in design, construction, operation, or maintenance that has a significant effect on the discharge of pollutants to state waters which is not addressed by the existing SWPPP.

C. The SWPPP must be maintained by the operator at a central location on site. If an on-site location is unavailable, notice of the SWPPP's location must be posted near the main entrance at the construction site. Operators shall make the SWPPP available for public review in accordance with Section II of the General Permit, either electronically or in hard copy.

§ 245-33. Stormwater Management Plan; contents of plan.

A. The Stormwater Management Plan required in § 245-31 of this article must apply the stormwater management technical criteria set forth in § 245-36 of this article to the entire land-disturbing activity (individual lots in new residential, commercial, or industrial developments shall not be considered separate land-disturbing activities), consider all sources of surface runoff and all sources of subsurface and groundwater flows converted to surface runoff, and include the following information:

(1) Information on the type and location of stormwater discharges; information on the features of the stormwater being discharged, including surface waters or karst features, if present; and the predevelopment and post-development drainage areas;

(2) Contact information including the name, address, and telephone number of the owner and the tax reference number and parcel number of the property or properties affected;

(3) A narrative that includes a description of current site conditions and final site conditions;

(4) A general description of the proposed stormwater management facilities and the mechanism through which the facilities will be operated and maintained after construction is complete;

(5) Information on the proposed stormwater management facilities, including the type of facilities, location (including geographical coordinates), acres treated, and the surface waters into which the facility will discharge;

(6) Hydrologic and hydraulic computations, including runoff characteristics;

(7) Documentation and calculations verifying compliance with the water quality and quantity requirements of § 245-36 of this article;

(8) A map or maps of the site that depicts the topography of the site and includes:

(a) All contributing drainage areas;

(b) Existing streams, ponds, culverts, ditches, wetlands, other water bodies, and floodplains;

(c) Soil types, forest cover, and other vegetative areas;

(d) Current land use, including existing structures, roads, and locations of known utilities and easements;

(e) Sufficient information on adjoining parcels to assess the impacts of stormwater from the site on these parcels;

(f) The limits of clearing and grading, and the proposed drainage patterns on the site;

(g) Proposed buildings, roads, parking areas, utilities, and stormwater management facilities; and

(h) Proposed land use with tabulation of the percentage of surface area to be adapted to various uses, including but not limited to planned location of utilities, roads, and easements.

B. If an operator intends to meet the water quality and/or quantity requirements set forth in § 245-36 of this article through the use of off-site compliance options, where applicable, then a letter of availability from the off-site provider must be included. Approved off-site options must achieve the necessary nutrient reductions prior to the commencement of the applicant's land-disturbing activity except as otherwise allowed by § 62.1-44, 15:35 of the Code of Virginia.

C. Elements of the stormwater management plans that include activities regulated under Chapter 4 (§ 54.1-400 et seq.) of Title 54.1 of the Code of Virginia shall be appropriately sealed and signed by a professional engineer registered in the Commonwealth of Virginia pursuant to Article 1 (§ 54.1-400 et seq.) of Chapter 4 of Title 54.1 of the Code of Virginia.

D. A construction record drawing for permanent stormwater management facilities shall be submitted to the Administrator. The construction

record drawing shall be appropriately sealed and signed by a professional registered in the Commonwealth of Virginia, certifying that the stormwater management facilities have been constructed in accordance with the approved plan.

§ 245-34. Pollution Prevention Plan; contents of plans.

A. A Pollution Prevention Plan, required by 4VAC50-60-56, shall be developed, implemented, and updated as necessary and must detail the design, installation, implementation, and maintenance of effective pollution prevention measures to minimize the discharge of pollutants. At a minimum, such measures must be designed, installed, implemented, and maintained to:

(1) Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;

(2) Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, and other materials present on the site to precipitation and to stormwater; and

(3) Minimize the discharge of pollutants from spills and leaks and implement chemical spill and leak prevention and response procedures.

B. The Pollution Prevention Plan shall include effective best management practices to prohibit the following discharges:

(1) Wastewater from washout of concrete, unless managed by an appropriate control;

(2) Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials;

(3) Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance; and

(4) Soaps or solvents used in vehicle and equipment washing.

C. Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, are prohibited unless managed by appropriate controls.

§ 245-35. Review of Stormwater Management Plan.

A. Stormwater Management Plans approved for residential, commercial, or industrial subdivisions shall govern the development of the individual parcels and shall be binding upon any subsequent owner. The Administrator shall review stormwater management plans and shall

approve or disapprove a Stormwater Management Plan according to the following:

(1) The Administrator shall determine the completeness of a plan in accordance with § 245-32 of this article, and shall notify the applicant, in writing, of such determination within 15 calendar days of receipt. If the plan is deemed to be incomplete, the written notification shall contain the reasons the plan is deemed incomplete.

(2) The Administrator shall have an additional 60 calendar days from the date of the communication of completeness to review the plan, except that if a determination of completeness is not made within the time prescribed in Subsection A(1), then the plan shall be deemed complete and the Administrator shall have 60 calendar days from the date of submission to review the plan.

(3) The Administrator shall review any plan that has been previously disapproved within 45 calendar days of the date of resubmission.

(4) During the review period, the plan shall be approved or disapproved and the decision communicated in writing to the person responsible for the land-disturbing activity or his designated agent. If the plan is not approved, the reasons for not approving the plan shall be provided in writing. Approval or denial shall be based on the plan's compliance with the requirements of this article.

(5) If a plan meeting all requirements of this article is submitted and no action is taken within the time provided above in Subsection A(2) for review, the plan shall be deemed approved.

B. Approved stormwater plans may be modified as follows:

(1) Modifications to an approved Stormwater Management Plan shall be allowed only after review and written approval by the Administrator. The Administrator shall have 60 calendar days to respond in writing either approving or disapproving such request.

(2) The Administrator may require that an approved Stormwater Management Plan be amended, within a time prescribed by the Administrator, to address and deficiencies noted during inspections.

C. The Administrator shall require the submission of a construction record drawing for permanent stormwater management facilities. The Administrator may elect not to require construction record drawings for stormwater management facilities for which recorded maintenance agreements are not required pursuant to § 245-30.

§ 245-36. Technical criteria for regulated land-disturbing activities.

A. To protect the quality and quantity of state water from the potential harm of unmanaged stormwater runoff from land-disturbing activities, the City of Colonial Heights, VA, hereby adopts the technical criteria for regulated land-disturbing activities set forth in Part IIB of the Regulations, as amended, expressly to include 9VAC25-870-62 [technical criteria for land-disturbing activities]; 9VAC25-870-63 [water quality design criteria requirements]; 9VAC25-870-65 [water quality compliance]; 9VAC25-870-66 [water quantity]; 9VAC25-870-69 [offsite compliance options]; 9VAC25-870-72 [design storms and hydrologic methods]; 9VAC25-870-74 [stormwater harvesting]; 9VAC25-870-76 [linear development projects]; 9VAC25-870-85 [stormwater management impoundment structures or facilities]; 9VAC25-870-92 [comprehensive stormwater management plans]; 9VAC25-870-93 [technical criteria for regulated land-disturbing activities; grandfathered projects and projects subject to the provisions of 9VAC25-870-47B]; 9VAC25-870-94 [applicability]; 9VAC25-870-95 [general]; 9VAC25-870-96 [water quality]; 9VAC25-870-97 [stream channel erosion]; 9VAC25-870-98 [flooding]; 9VAC25-870-99 [regional (watershed-wide) stormwater management plans], which shall apply to all land-disturbing activities regulated pursuant to this article, except as expressly set forth in Subsection B of this section.

B. Any land-disturbing activity shall be considered grandfathered by the VSMP authority and shall be subject to the Part IIC technical criteria of the VSMP Regulation provided:

(1) A proffered or conditional zoning plan, zoning with a plan of development, preliminary or final subdivision plat, preliminary or final site plan, or any document determined by the locality to be equivalent thereto, (i) was approved by the locality prior to July 1, 2012, (ii) provided a layout as defined in 9VAC25-870-10, (iii) will comply with the Part IIC technical criteria of the VSMP Regulation, and (iv) has not been subsequently modified or amended in a manner resulting in an increase in the amount of phosphorus leaving each point of discharge, and such that there is no increase in the volume or rate of runoff;

(2) A state permit has not been issued prior to July 1, 2014; and

(3) Land disturbance did not commence prior to July 1, 2014.

Land-disturbing activities grandfathered under Subsections A and B of this section shall remain subject to the Part IIC technical criteria of the VSMP Regulation for one additional state permit cycle. After such time, portions of the project not under construction shall become subject to any new technical criteria adopted by the Board.

In cases where governmental bonding or public debt financing has been issued for a project prior to July 1, 2012, such project shall be subject to the technical criteria of Part IIC of the Regulations.

Nothing in this section shall preclude an operator from constructing to a more stringent standard at his discretion.

C. In cases where governmental bonding or public debt financing has been issued for a project prior to July 1, 2012, such project shall be subject to the technical requirements of Part IIC of the Regulations, as adopted by the City of Colonial Heights in Subsection A above.

D. The Administrator may grant exceptions to the technical requirements of Part IIB or Part IIC of the Regulations, provided that (i) the exception is the minimum necessary to afford relief, (ii) reasonable and appropriate conditions are imposed so that the intent of the Act, the Regulations, and this article are preserved, (iii) granting the exception will not confer any special privileges that are denied in other similar circumstances, and (iv) exception requests are not based upon conditions or circumstances that are self-imposed or self-created. Economic hardship alone is not sufficient reason to grant an exception from the requirements of this article.

(1) Exceptions to the requirement that the land-disturbing activity obtain required VSMP authority permit shall not be given by the Administrator, nor shall the Administrator approve the use of a BMP not found on the Virginia Stormwater BMP Clearinghouse Website, or any other control measure duly approved by the Director.

(2) Exceptions to requirements for phosphorus reductions shall not be allowed unless off-site options otherwise permitted pursuant to 4VAC50-60-69 have been considered and found not available.

E. Nothing in this section shall preclude an operator from constructing to a more stringent standard at its discretion.

§ 245-37. Long-term maintenance of permanent stormwater facilities.

A. The Administrator shall require the provision of long-term responsibility for maintenance of stormwater management facilities and other techniques specified to manage the quality and quantity of runoff. Such requirements shall be set forth in an instrument recorded in the local land records prior to General Permit termination or earlier as required by the Administrator and shall at a minimum:

(1) Be submitted to the Administrator for review and approval prior to the approval of the stormwater management plan;

(2) Be stated to run with the land;

(3) Provide for all necessary access to the property for purposes of maintenance and regulatory inspections;

(4) Provide for inspections and maintenance and the submission of inspection and maintenance reports to the Administrator; and

(5) Be enforceable by all appropriate governmental parties.

§ 245-38. Monitoring and inspections.

A. The Administrator shall inspect the land-disturbing activity during construction for:

(1) Compliance with the approved erosion and sediment control plan;

(2) Compliance with the approved stormwater management plan;

(3) Development, updating, and implementation of a pollution prevention plan; and

(4) Development and implementation of any additional control measure necessary to address a TMDL.

B. The Administrator or any duly authorized agent of the Administrator may, at reasonable times and under reasonable circumstances, enter any establishment or upon any property, public or private, for the purpose of obtaining information or conducting surveys or investigations necessary in the enforcement of the provisions of this article.

C. In accordance with a performance bond, cash escrow, letter of credit, any combination thereof, or such other legal arrangement or instrument, the Administrator may also enter any establishment or upon any property, public or private, for the purpose of initiating or maintaining appropriate actions which are required by the permit conditions associated with a land-disturbing activity when a permittee, after proper notice, has failed to take acceptable action within the time specified.

D. The Administrator may require every VSMP authority permit applicant or permittee, or any such person subject to VSMP authority permit requirements under this article, to furnish when requested such application materials, plan, specifications, and other pertinent information as may be necessary to accomplish the purposes of this article.

E. Post-construction inspections of stormwater management facilities required by the provisions of this article shall be conducted by the Administrator or any duly authorized agent of the Administrator pursuant to the City's adopted and State Board approved inspection program and shall occur, at minimum, at least once every five years except as may otherwise be provided for in § 245-37.

§ 245-39. Hearings.

A. Any permit applicant or permittee, or person subject to this article's requirements, aggrieved by any action of the City of Colonial Heights taken without formal hearing, or by inaction of the City of Colonial Heights, may demand in writing a formal hearing by the Colonial Heights City Council provided a petition requesting such hearing is filed with the Administrator within 30 days after notice of the adverse action, or, in the case of inaction, within 30 days after the City should have acted.

B. The hearings held under this section shall be conducted by the Colonial Heights City Council at a regular or special meeting of Council, or by at least one member of the City Council as designated to conduct such hearings on behalf of City Council, at a time and place authorized by the City Council.

C. A verbatim record of such hearing's proceedings shall be taken and filed with the City Clerk.

D. The Colonial Heights City Council or its designated member, as the case may be, shall have power to issue subpoenas and subpoenas duce tecum; and at the request of any party shall issue such subpoenas. The failure of a witness without legal excuse to appear or to testify or to produce documents shall be acted upon by the local governing body, or its designated member, whose action may include the procurement of an order of enforcement from the circuit court. Witnesses who are subpoenaed shall receive the same fees and reimbursement for car mileage as in civil actions.

§ 245-40. Appeals.

A. Any applicant who seeks an appeal hearing before the City Council shall be heard at the next regularly scheduled City Council regular meeting, provided that the City Council and other involved parties have at least 30 days' prior notice. In reviewing the Administrator's actions, the City Council shall consider evidence and opinions presented by the aggrieved applicant and Administrator. After considering the evidence and opinions, the City Council may affirm, reverse, or modify the action. The City Council's decision shall be final, subject only to review by the Circuit Court of the City.

B. Final decisions of the City Council under this article shall be subject to review by the City of Colonial Heights Circuit Court, provided an appeal is filed within 30 days from the date of any written decision adversely affecting the rights, duties, or privileges of the person engaging in or proposing to engage in land-disturbing activities.

§ 245-41. Enforcement.

A. If the Administrator determines that there is a failure to comply with the VSMP authority permit conditions or determines there is an unauthorized discharge, notice shall be served upon the permittee or

person responsible for carrying out the permit conditions by any of the following means: verbal warnings and inspection reports, notices of corrective action, consent special orders, and notices to comply. Written notices shall be served by registered or certified mail to the address specified in the permit application or by delivery at the site of the development activities to the agent or employee supervising such activities.

(1) The notice shall specify the measures needed to comply with the permit conditions and shall specify the time within which such measures shall be completed. Upon failure to comply within the time specified, a stop-work order may be issued in accordance with Subsection B or the permit may be revoked by the Administrator;

(2) If a permittee fails to comply with a notice issued in accordance with this section within the time specified, the Administrator may issue an order requiring the owner, permittee, person responsible for carrying out an approved plan, or the person conducting the land-disturbing activities without an approved plan or required permit to cease all land-disturbing activities until the permit violation has ceased, or an approved plan and required permits are obtained, and specified corrective measures have been completed;

(3) Such orders shall be issued in accordance with Chapter 241 of the Colonial Heights City Code. The orders shall become effective upon service on the person by certified mail, return receipt requested, sent to his address specified in the City's land records, or by personal delivery by an agent of the Administrator. However, if the Administrator finds that any such violation is grossly affecting or presents an imminent and substantial danger of causing harmful erosion of land or sediment deposition in waters within the Commonwealth's watersheds or otherwise substantially impacting water quality, it may issue, without advance notice or hearing, an emergency order directing such person to cease immediately all land-disturbing activities on the site and shall provide an opportunity for a hearing, after reasonable notice as to the time and place thereof, to such person, to affirm, modify, amend, or cancel such emergency order. If a person who has been issued an order is not complying with the terms thereof, the Administrator may institute a proceeding for an injunction, mandamus, or other appropriate remedy in accordance with § 245-41C.

B. In addition to any other remedy this article provides, if the Administrator or his designee determines that there is a failure to comply with the provisions of this article, he may initiate such informal and/or formal administrative enforcement procedures in a manner that is consistent with City Code § 241-3.

C. Any person violating or failing, neglecting, or refusing to obey any rule, regulation, ordinance, order, approved standard or specification, or any permit condition issued by the Administrator may be compelled in a

proceeding instituted by the City in Colonial Heights Circuit Court to obey same and to comply therewith by injunction, mandamus, or other appropriate remedy.

D. Any person who violates any provision of this article, or who fails, neglects, or refuses to comply with any order of the Administrator, shall be subject to a civil penalty not to exceed $32,500 for each violation. Each day a requirement is violated shall constitute a separate offense.

(1) Violations for which a penalty may be imposed under this subsection shall include but not be limited to the following:

(a) No state permit registration;

(b) No SWPPP;

(c) Incomplete SWPPP;

(d) SWPP not available for review;

(e) No approved erosion and sediment control plan;

(f) Failure to install stormwater BMPs or erosion and sediment controls;

(g) Stormwater BMPs or erosion and sediment controls improperly installed or maintained;

(h) Operational deficiencies;

(i) Failure to conduct required inspections;

(j) Incomplete, improper, or missed inspections; and

(k) Discharges not in compliance with the permit requirements of Section 4VAC 50-60-1170 of the General Permit.

(2) The Administrator may issue a summons for collection of the civil penalty and the action may be prosecuted in the appropriate court.

(3) In imposing a civil penalty pursuant to this subsection, the court may consider the degree of harm caused by the violation and also the economic benefit to the violator from noncompliance.

(4) Any civil penalties assessed by a court as a result of a summons the City issues shall be paid into the treasury of the City of Colonial Heights to be used for the purpose of minimizing, preventing, managing, or mitigating pollution of the waters of the City and abating environmental pollution therein in such manner as the court may, by order, direct.

E. Notwithstanding any other civil or equitable remedy provided by this section or by law, any person who willfully or negligently violates any provision of this article, any order of the Administrator, any condition of a permit, or any order of a court shall be guilty of a misdemeanor

punishable by confinement in jail for not more than 12 months or a fine of not less than $2,500 nor more than $32,500, or both.

§ 245-42. Fees.

A. Fees for coverage under the General Permit shall be imposed in accordance with Table 1. When a site or sites has been purchased for development within a previously permitted common plan of development or sale, the applicant shall be subject to fees in accordance with the disturbed acreage of its site or sites according to Table 1.

Table 1: Fees for Permit Coverage

Type of Permit	Fee Amount
VSMP General/Stormwater Management	
Small construction activity/land clearing: areas within common plans of development or sale with land disturbance acreage less than 1 acre	$290
Small construction activity/land clearing: Sites within locally designated Chesapeake Bay Preservation Areas (CBPAs) with land-disturbance acreage greater than or equal to 2,500 SF and less than 0.5 acre	$290
Small construction activity/land clearing: sites or areas within common plans of development or sale with land disturbance acreage equal to or greater than 1 acre and less than 5 acres	$2,700
Large construction activity/land clearing: sites or areas within common plans of development or sale with land disturbance acreage equal to or greater than 5 acres and less than 10 acres	$3,400
Large construction activity/land clearing: sites or areas within common plans of development or sale with land disturbance acreage equal to or greater than 10 acres and less than 50 acres	$4,500
Large construction activity/land clearing: Sites or areas within common plans of development or sale with land disturbance acreage equal to or greater than 50 acres and less than 100 acres	$6,100
Large construction activity/land clearing: sites or areas within common plans of development or sale with land disturbance acreage equal to or greater than 100 acres	$9,600

B. Fees for the modification or transfer of registration statements from the General Permit issued by Colonial Heights shall be imposed in accordance with Table 2. If the permit modifications result in changes

to stormwater management plans that require the City's additional review, such review shall be subject to the fees set out in Table 2. The fee assessed shall be based on total disturbed acreage of the site.

Table 2: Fees for the Modification or Transfer of Registration Statements for the General Permit for Discharges of Stormwater from Construction Activities

Type of Permit	Fee Amount
VSMP General/Stormwater Management	
Small construction activity/land clearing: areas within common plans of development or sale with land disturbance acreage less than 1 acre	$20
Small construction activity/land clearing: sites within locally designated CBPAs with land-disturbance acreage greater than or equal to 2,500 SF and less than 0.5 acre	$20
Small construction activity/land clearing: sites or areas within common plans of development or sale with land disturbance acreage equal to or greater than 1 acre and less than 5 acres	$200
Large construction activity/land clearing: sites or areas within common plans of development or sale with land disturbance acreage equal to or greater than 5 acres and less than 10 acres	$250
Large construction activity/land clearing: sites or areas within common plans of development or sale with land disturbance acreage equal to or greater than 10 acres and less than 50 acres	$300
Large construction activity/land clearing: sites or areas within common plans of development or sale with land disturbance acreage equal to or greater than 50 acres and less than 100 acres	$450
Large construction activity/land clearing: sites or areas within common plans of development or sale with land disturbance acreage equal to or greater than 100 acres	$700

C. The following annual maintenance fees shall be imposed in accordance with Table 3, including fees imposed on expired permits that have been administratively continued. With respect to the General Permit, these fees shall apply until the permit coverage is terminated.

Table 3: Permit Maintenance Fees

Type of Permit	Fee Amount
VSMP General/Stormwater Management	
Small construction activity/land clearing: areas within common plans of development or sale with land disturbance acreage less than 1 acre	$50
Small construction activity/land clearing: sites within locally designated CBPAs with land-disturbance acreage greater than or equal to 2,500 SF and less than 0.5 acre	$50
Small construction activity/land clearing: sites or areas within common plans of development or sale with land disturbance acreage equal to or greater than 1 acre and less than 5 acres	$400
Large construction activity/land clearing: sites or areas within common plans of development or sale with land disturbance acreage equal to or greater than 5 acres and less than 10 acres	$500
Large construction activity/land clearing: sites or areas within common plans of development or sale with land disturbance acreage equal to or greater than 10 acres and less than 50 acres	$650
Large construction activity/land clearing: sites or areas within common plans of development or sale with land disturbance acreage equal to or greater than 50 acres and less than 100 acres	$900
Large construction activity/land clearing: sites or areas within common plans of development or sale with land disturbance acreage equal to or greater than 100 acres	$1,400

General Permit coverage maintenance fees shall be paid annually to the City of Colonial Heights, by the anniversary date of the General Permit coverage. No permit will be reissued or automatically continued without payment of the required fee. General Permit coverage maintenance fees shall be applied until notice of termination is effective.

D. The fees set forth in Subsections A, B and C above shall apply to:

(1) All persons seeking coverage under the General Permit;

(2) All permittees who request modifications to or transfers of their existing registration statement for coverage under a General Permit;

(3) Persons whose coverage under the General Permit has been revoked shall reapply for an individual Permit for Discharges of Stormwater from Construction Activities; and

(4) Permit and permit coverage maintenance fees outlined under § 245-42 shall apply to each General Permit holder.

E. No permit application fees will be assessed to:

(1) Permittees who request minor modifications to permits as defined in § 245-30 of this article. Permit modification at the request of the permittee resulting in changes to stormwater management plans that require the Administrator's additional review shall not be exempt.

(2) Permittees whose permits are modified or amended at the Department's initiative, excluding errors in the registration statement identified by the Administrator or errors related to the site's acreage.

F. All insufficient payments will be deemed nonpayments, and the applicant shall be notified of any incomplete payments. Interest shall be charged for late payments at the underpayment rate set forth in § 58.1-15 of the Code of Virginia and is calculated on a monthly basis at the applicable periodic rate. A 10% late payment fee shall be charged to any delinquent (over 90 days past due) account. The City of Colonial Heights shall be entitled to all remedies available under the Code of Virginia in collecting any past due amount.

§ 245-43. Performance bond.

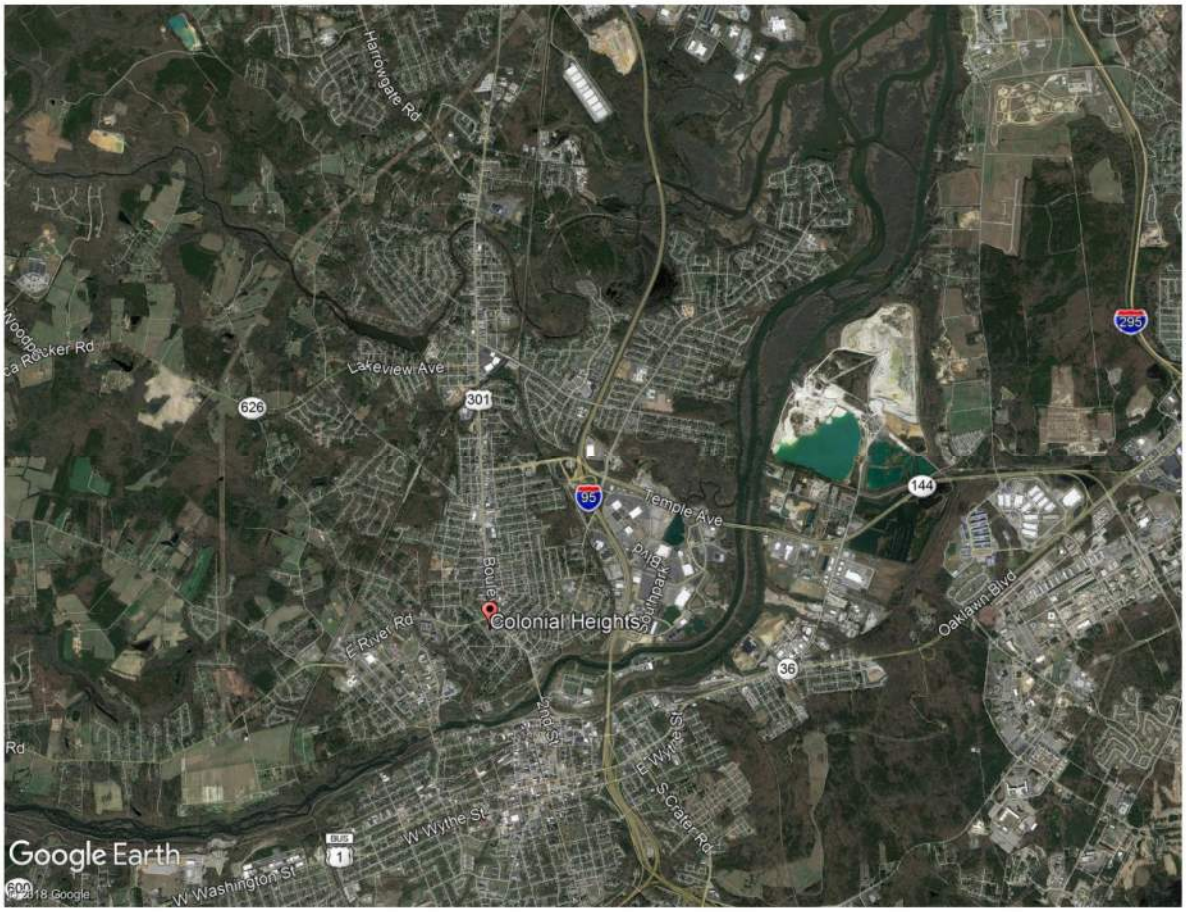
A. Prior to the issuance of any permit, the applicant shall be required to submit a reasonable performance bond with surety, cash escrow, letter of credit, any combination thereof, or such other legal arrangement acceptable to the Colonial Heights City Attorney, for the full costs of the anticipated work, to ensure that measures could be taken by the City of Colonial Heights at the applicant's expense should he fail, after proper notice, within the time specified to initiate or maintain appropriate actions the permit requires of him. If the City of Colonial Heights takes such action upon the applicant's failure, the City may collect from the applicant for the difference should the cost of the action and any needed corrective action exceed the amount of the security held. Within 60 days of the completion of the permit conditions, such bond, cash escrow, letter of credit or other legal arrangement, or unexpended or any unobligated portion thereof, shall be refunded to the applicant or terminated.

May 4th, 2018

TECHNICAL REPORT

OUTFALL DELINEATION SUMMARY REPORT

MS 4 Outfall Delineation – Colonial Heights, VA



I. PROJECT OBJECTIVES

The City of Colonial Heights is an MS4 permittee and needs to address the following requirement in the MS4 General Permit, Section II B.3.a.(2)(b):

> "The associated information table shall include for each outfall the following: The estimated MS4 acreage served."

The City has mapped the locations of their outfalls but does not currently have the estimated acreage of MS4 served by each outfall. Currently, the City has mapped 90 outfalls. The City has also mapped their inlets and other stormwater features. JMT has been contracted by the City to perform a desktop analysis to estimate the drainage area to the City's outfalls using currently available information and the methodology described in the subsequent section. The goal of the outfall drainage area mapping, aside for permit compliance, is to aid the City in their illicit discharge detection and elimination (IDDE) investigations, giving them a tool to aid in tracing sources for identified illicit discharges.

This report summarizes the methodology employed to determine the drainage areas for the outfalls and a summary table of the outfalls with the drainage area information. JMT will provide the City with the A GIS layer of the delineation of the City's 90 outfalls is also provided to the City as part of this report.

II. METHODOLOGY

The preliminary steps taken to obtain initial drainage area (DA) information was completed using USGS Streamstats 4.0. This program delineates DA information to a selected point on a basemap, which can be downloaded in various formats and utilized in other programs. This data provided us with a basic understanding of drainage patterns to the 90 outfall locations provided by the City and was compiled using ArcGIS 10.3. Please see Figure 1.

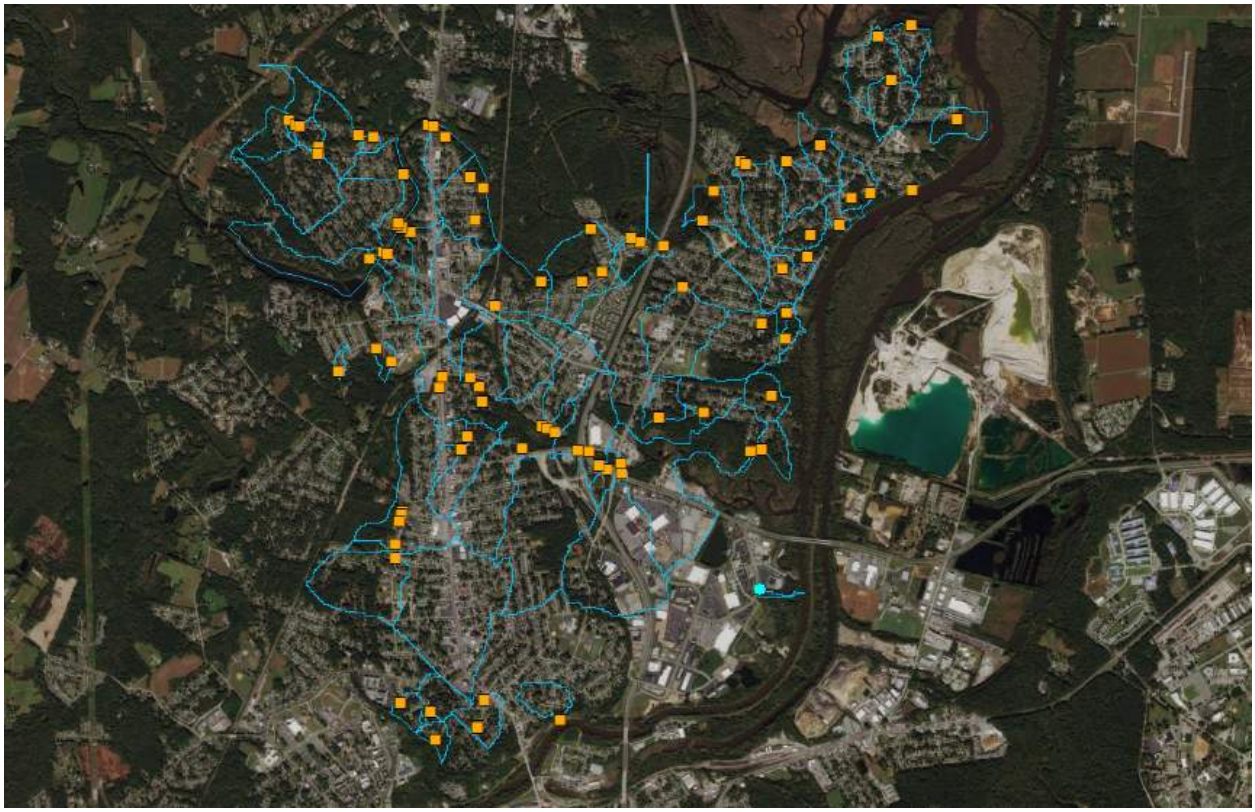


Figure 1

Subsequently, JMT utilized a combination of different methods to further refine the Streamstats DA information to each of the 90 outfall locations provided by the City. One method was the utilization of some Engineering plans (provided as pdfs by the City). These plans were only utilized for several locations including Southpark Mall and Snead Avenue where either a storm sewer (SSW) network or DA were more clearly defined and showed how existing infrastructure physically connected to one of the outfalls provided by the City. These pdfs were imported into ArcGIS and utilized where possible. Please see Figure 2.

Figure 2

The remainder of the refined outfall delineations were determined by utilizing a few GIS files provided by the City – 2' contours, SSW inlet locations – as well as the aforementioned outfall locations. Next, a map was created using ArcGIS, which incorporated the aforementioned data as well as aerial information as a basemap (see Figure 3). The ArcGIS map was used in conjunction with a Microstation file that referenced the same information without the inlet information and this is where the refined DA's were delineated. As a supplementary tool, Google Earth was used to attempt to trace SSW networks and confirm other drainage information where possible.

Figure 3

Meetings and discussions with JMT and the City were held to discuss 15 outfall locations that were evaluated and required further information to finalize the area delineations. Input from the City's knowledge about the City's topography and infrastructures were used to refine the delineations for several of these outfalls. The City performed field reconnaissance for the remaining outfalls to further assist with the refinement of the delineations.

All the information contained within the Microstation file was imported into ArcGIS to create the final GIS layer which is being provided as part of this report.

III. RESULTS

The DA delineation and size in acres for 90 outfalls has been quantified and provided in a table for your use. Also, an 11 x 17 map depicting the delineated DA's to each outfall has been provided in conjunction with the GIS layer for your use.

SWM ID	D A (sq ft)	D A (ac)	Subwatershed	Nearest Road	Outfall Type	Pipe Mat'l	Pipe Dia.	Pipe Shape	# of Pipes	Notes
OF-001	63,085.4	1.4	Oldtown Creek	Old Town	Pipe	RCP	36 in.	Circular	Single	
OF-002	908,669.8	20.9	Swift Creek	Nantucket Ct	Pipe	RCP	15 in.	Circular	Double	
OF-003	259,951.9	6.0	Appomattox	Kennon Point	Pipe	RCP	36 in.	Circular	Single	
OF-004	685,962.2	15.7	Oldtown Creek	Temple	Pipe	RCP	24 in.	Circular	Single	
OF-005	1,426,201.4	32.7	Swift Creek	Forest View	Pipe	CMP	36 in.	Circular	Single	
OF-006	881,220.3	20.2	Appomattox	Clifton Drive	Pipe	RCP	36 in.	Circular	Single	
OF-007	109,448.2	2.5	Oldtown Creek	Temple	Pipe	RCP	24 in.	Circular	Single	
OF-008	909,343.9	20.9	Swift Creek	Forest View	Pipe	N/A	24 in.	Circular	Single	
OF-009	493,630.9	11.3	Appomattox	Yacht Basin Drive	Pipe	RCP	48 in.	Circular	Single	
OF-010	773,707.1	17.8	Oldtown Creek	Old Town	Pipe	RCP	24 in.	Eliptical	Single	
OF-011	614,490.2	14.1	Swift Creek	Sherwood at Springdale	Pipe	Steel	21 in.	Circular	Single	
OF-012	1,527,678.2	35.1	Appomattox	Royal Oak	Pipe	RCP	36 in.	Circular	Double	
OF-013	9,619.9	0.2	Swift Creek	Sherwood Drive	Pipe	RCP	24 in.	Circular	Single	
OF-014	92,391.2	2.1	Oldtown Creek	Conduit	Pipe	RCP	48 in.	Circular	Single	
OF-015	8,432.9	0.2	Swift Creek	Sherwood Drive	Pipe	RCP	24 in.	Circular	Single	
OF-016	7,213,148.2	165.6	Oldtown Creek	Temple at Conduit	Pipe	RCP	96 in.	Box	Double	
OF-017	202,792.8	4.7	Swift Creek	Sherwood Drive	Pipe	RCP	30 in.	Circular	Single	
OF-018	2,220,914.0	51.0	Oldtown Creek	Old Town	Pipe	CMP	18 in. x 11 in.	Arch	Single	
OF-019	956,164.7	22.0	Oldtown Creek	Old Town	Pipe	RCP	24 in.	Circular	Single	
OF-020	2,375,824.9	54.5	Swift Creek	Forest View	Pipe	CMP	36 in.	Circular	Single	
OF-021	422,895.3	9.7	Oldtown Creek	Old Town	Pipe	RCP	18 in.		Double	
OF-022	707,402.2	16.2	Oldtown Creek	Newcastle	Pipe	N/A	N/A	N/A	N/A	
OF-023	598,580.0	13.7	Swift Creek	Springdale	Pipe	RCP	36 in.	Circular	Single	
OF-024	288,907.7	6.6	Oldtown Creek	Boulevard	Pipe	RCP	18 in.	Circular	Single	
OF-025	634,534.3	14.6	Swift Creek	Boulevard	Pipe	RCP	30 in.	Circular	Single	
OF-026	370,813.8	8.5	Oldtown Creek	Cedar Lane	Pipe	RCP	30 in.	Circular	Single	
OF-027	86,921.7	2.0	Swift Creek	Boulevard	Pipe	RCP	18 in.	Circular	Single	
OF-028	962,471.7	22.1	Swift Creek	Longhorn Drive	Pipe	RCP	48 in.	Circular	Single	
OF-029	328,353.6	7.5	Swift Creek	Bearchase Court	Pipe	RCP	24 in.	Circular	Single	
OF-030	1,898,897.4	43.6	Swift Creek	Waterfront Drive	Pipe	RCP	48 in.	Circular	Single	
OF-031	325,867.5	7.5	Swift Creek	Ellerslie	Pipe	RCP	18 in.	Circular	Single	
OF-032	75,346.5	1.7	Swift Creek	Taylor	Pipe	RCP	15 in.	Circular	Single	
OF-033	1,423,150.4	32.7	Swift Creek	Taylor	Pipe	RCP	36 in.	Circular	Single	
OF-034	228,017.2	5.2	Swift Creek	Huntington	Pipe	RCP	15 in.	Circular	Single	
OF-035	1,622,277.1	37.2	Swift Creek	Huntington	Pipe	RCP	42 in.	Circular	Single	
OF-036	1,612,938.9	37.0	Swift Creek	Comstock Drive	Pipe	RCP	36 in.	Circular	Single	
OF-037	732,162.9	16.8	Appomattox	Waterfront	Pipe	RCP	24 in.	Eliptical	Single	
OF-038	71,112.9	1.6	Swift Creek	Sherwood Drive	Pipe	RCP	24 in.	Circular	Single	
OF-039	208,764.4	4.8	Fleets Branch	Bradsher Ave	Pipe	RCP	54 in.	Circular	Single	
OF-040	1,960,938.7	45.0	Oldtown Creek	Snead	Pipe	CMP	36 in.	Circular	Single	
OF-041	3,509,092.4	80.6	Oldtown Creek	Ridge	Pipe	CMP	36 in.	Eliptical	Triple	
OF-042	1,748,914.5	40.1	Fleets Branch	Chesterfield Ave	Pipe	RCP	48 in.	Circular	Single	
OF-043	13,434,182.9	308.4	Oldtown Creek	Meridian	Box culvert	RCP	54 in.	Box	Double	
OF-044	954,789.6	21.9	Swift Creek	Ayrshire	Pipe	RCP	24 in.	Circular	Single	
OF-045	604,983.0	13.9	Fleets Branch	Cambridge	Box, Pipe	RCP	48 in.	Box	Double	
OF-046	315,418.2	7.2	Oldtown Creek	Wildwood	Pipe	RCP	24 in.	Circular	Single	
OF-047	476,044.6	10.9	Oldtown Creek	Driftwood	Pipe	RCP	18 in.	Circular	Single	
OF-048	99,973.1	2.3	Oldtown Creek	Snead	Pipe	RCP	12 in.	Circular	Single	
OF-049	261,179.3	6.0	Appomattox	Covington	Ditch					2 concrete lined ditches converging
OF-051	4,515,612.7	103.7	Swift Creek	Pertshire	Pipe	CMP	60 in.	Circular	Single	
OF-052	95,275.6	2.2	Oldtown Creek	Concord	Pipe	RCP	18 in.	Circular	Single	
OF-053	84,118.8	1.9	Oldtown Creek	Concord	Pipe	RCP	18 in.	Circular	Single	
OF-054	839,956.8	19.3	Oldtown Creek	Concord	Pipe	RCP	18 in.	Circular	Single	
OF-055	91,879.9	2.1	Fleets Branch	Orchard	Pipe	RCP	12 in.	Circular	Single	
OF-056	1,361,977.7	31.3	Appomattox	Duke of Gloucester	Pipe	RCP	27 in.	Circular	Single	
OF-057	3,346,120.7	76.8	Swift Creek	Fairmont/Winston	Pipe	CMP	48 in.	Circular	Single	
OF-058	203,838.0	4.7	Swift Creek	Nottingham (end)	Pipe	RCP	15 in.	Circular	Single	
OF-059	1,568,055.5	36.0	Swift Creek	Shade Tree	Pipe	RCP	54 in.	Circular	Single	
OF-060	500,559.7	11.5	Swift Creek	Hemlock (end)	Pipe	RCP	18 in.	Circular	Single	
OF-061	307,350.9	7.1	Appomattox	breezy hill	Pipe	RCP	15 in.	Circular	Single	
OF-062	169,236.4	3.9	Appomattox	Charles Dimmock	Pipe	RCP	15 in.			
OF-063	311,891.8	7.2	Oldtown Creek	Fairfax Ave	Pipe	RCP	18 in.		Single	

OF-064	364,529.4	8.4	Oldtown Creek	Fairfax Ave (in culvert)	Pipe	RCP	15 in.		Single	
OF-065	473,023.9	10.9	Swift Creek	hargrave	Pipe	RCP	24 in.	Circular	Single	duplicate OF-75 relabeled
OF-066	319,614.1	7.3	Swift Creek	yew	Pipe	RCP	18 in.	Circular	Single	duplicate OF-76 relabeled
OF-070	103,206.3	2.4	Swift Creek	camelot	Pipe	RCP	18 in.	Circular	Single	
OF-071	349,549.7	8.0	Swift Creek	seaton	Pipe	RCP	18 in.	Circular	Single	
OF-072	64,557.1	1.5	Swift Creek	tudor	Pipe	RCP	15 in.	Circular	Single	
OF-073	93,147.6	2.1	Swift Creek	nottingham	Pipe	RCP	15 in.	Circular	Single	
OF-074	201,112.8	4.6	Swift Creek	taswell	Pipe	RCP	18 in.	Circular	Single	
OF-075	494,086.4	11.3	Oldtown Creek	taswell	Pipe	RCP	18 in.	Circular	Single	
OF-076	700,608.2	16.1	Oldtown Creek	sadler	Pipe	RCP	18 in.	Circular	Single	
OF-077	729,230.4	16.7	Swift Creek	east	Pipe	RCP	18 in.	Circular	Single	
OF-078	382,004.9	8.8	Oldtown Creek	brookedge	Pipe	RCP	24 in.	Circular	Single	
OF-079	464,540.7	10.7	Oldtown Creek	brookedge	Pipe	RCP	24 in.	Circular	Single	
OF-080	230,484.0	5.3	Appomattox	chesterfield	Pipe	RCP	15 in.	Circular	Single	
OF-081	377,572.9	8.7	Appomattox	chesterfield	Pipe	RCP	15 in.	Circular	Single	
OF-082	497,526.4	11.4	Swift Creek	dunlop farms blvd	Pipe	PVC	18 in.	Circular	Single	
OF-083	406,792.8	9.3	Swift Creek	bluffs	Pipe	RCP	24 in.	Circular	Single	
OF-084	184,234.5	4.2	Swift Creek	bluffs	Pipe	RCP	27 in.	Circular	Single	
OF-085	509,690.2	11.7	Swift Creek	windmere	Pipe	RCP	30 in.	Circular	Single	
OF-086	209,977.1	4.8	Swift Creek	heroda	Pipe	RCP	15 in.	Circular	Single	
OF-088	146,829.1	3.4	Appomattox	whipporwill	Pipe	PVC	15 in.	Circular	Single	
OF-090	416,943.8	9.6	Appomattox	deerwood	Pipe	PVC	24 in.	Circular	Single	
OF-091	490,404.3	11.3	Appomattox	lexington dr	Pipe	RCP	18 in.	Circular	Single	
OF-092	351,327.3	8.1	Appomattox	choptank	Pipe	RCP	15 in.	Circular	Single	
OF-093	162,331.5	3.7	Appomattox	whitehall	Pipe	Steel	15 in.	Circular	Single	
OF-094	412,609.1	9.5	Appomattox	duke of gloucester	Pipe	RCP	18 in.	Circular	Single	
OF-095	784,546.9	18.0	Appomattox	elmwood	Pipe	Steel	18 in.	Circular	Single	previously unlabeled outfall
OF-096	1,084,052.9	24.9	Appomattox	cedarwood	Pipe	RCP	24 in.	Circular	Single	previously unlabeled outfall

Colonial Heights Drainage Areas Map

0 0.275 0.55 1.1 Miles

N

Legend

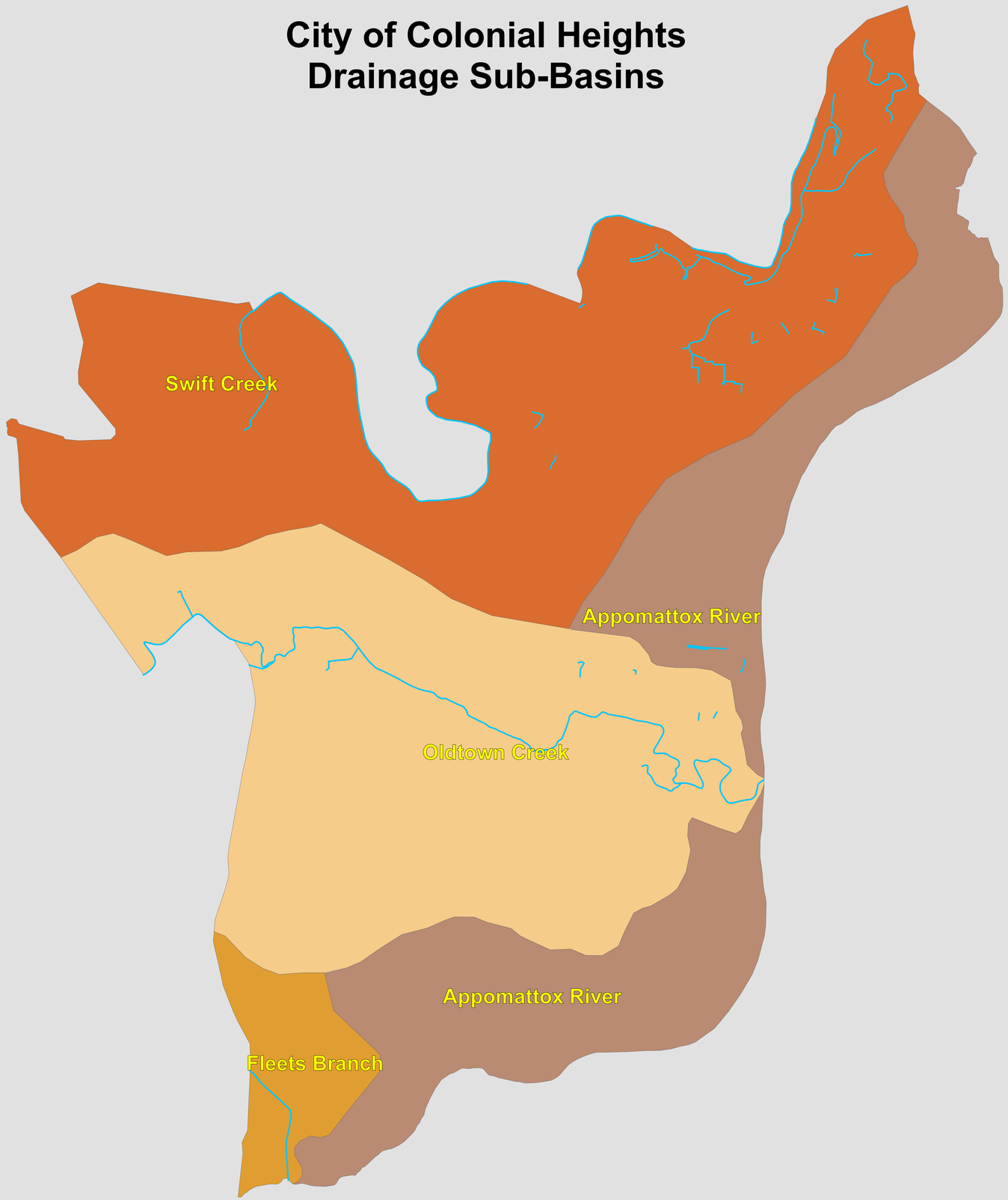
Outfalls - Labelled with SWM ID

Subwatershed

- Appomattox
- Fleets Branch
- Oldtown Creek
- Swift Creek

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

City of Colonial Heights
Drainage Sub-Basins



Legend

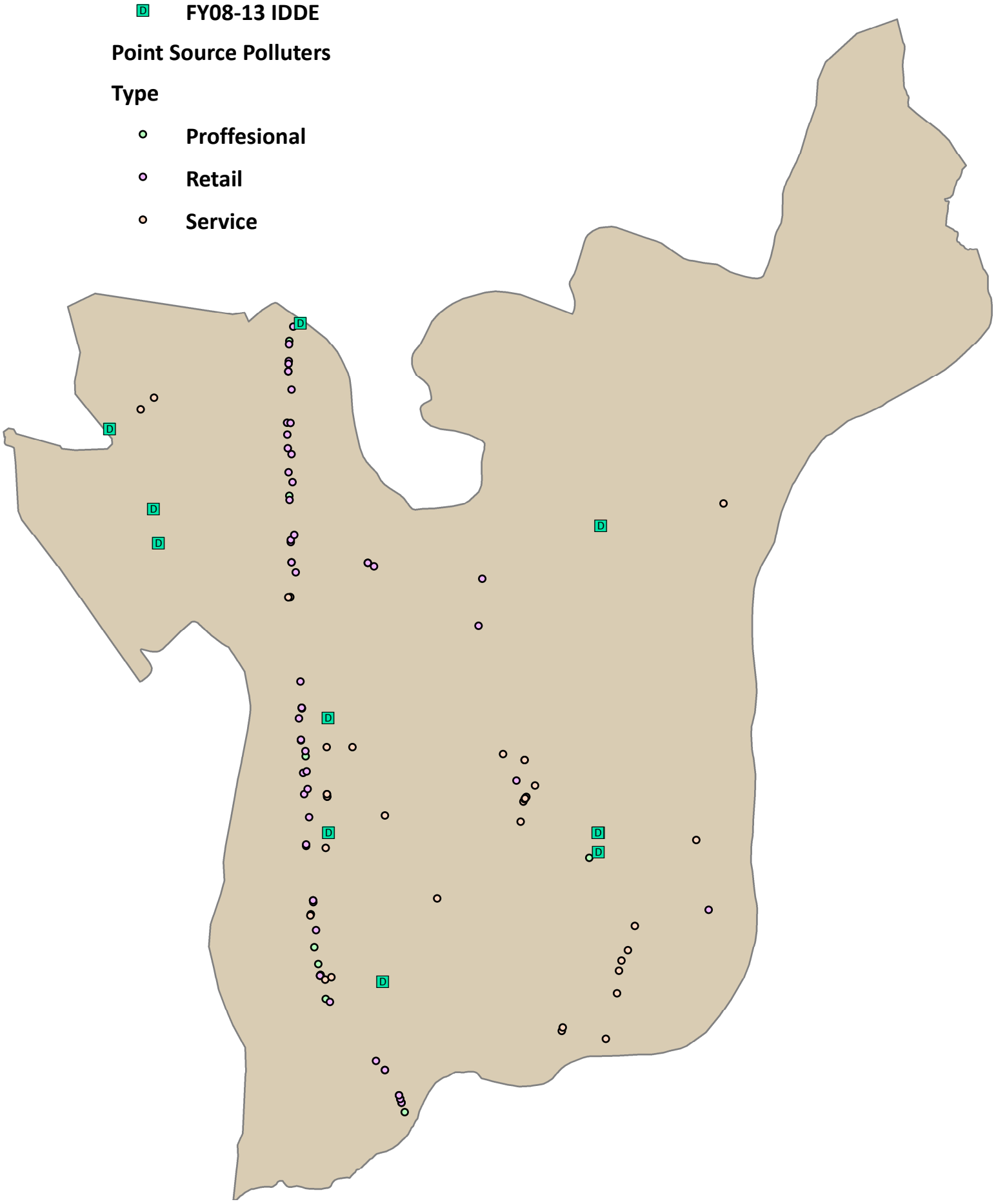
Drainage Sub-Basins

NAME

- Appomattox River
- Fleets Branch
- Oldtown Creek
- Swift Creek

Potential Illicit Dischargers by Industry

Potential & Recorded Dischargers



www.colonial-heights.com/PublicWorksStormWaterManagement

Department of Public Works
201 James Avenue
Colonial Heights, VA 23834

What your business needs to know about

Colonial Heights Stormwater Management Ordinance

Department of Public Works
City of Colonial Heights
201 James Avenue
Colonial Heights, Virginia 23834
(804) 520-9334

STORMWATER & YOUR BUSINESS

Stormwater Ordinance

Colonial Heights Stormwater Ordinance, driven by clean water regulations like the Clean Water Act, seeks to protect the City's receiving waters as well as the integrity and efficiency of the City's storm sewage system. As everyone operating or living in the City contributes to the storm sewer system, your business may be affected by the ordinance in some important ways.

What does the ordinance prohibit?

The ordinance is intended to prohibit two categories of activity: illicit connections and illegal discharges. An illicit connection is any drain or conveyance, either surface or subsurface, which allows an illegal discharge to enter the storm drain system, including any conveyances which allow any non-storm water discharge including sewage, wastewater, and wash water to enter the storm drain system and any connections to the system from indoor drains and sinks, regardless of whether such drain or connection had been previously allowed, permitted, or approved by the authorized enforcement agency. Any drain or conveyance connected from a commercial or industrial land use to the storm drain system which has not been documented in plans, maps, or equivalent records and approved by the authorized enforcement agency. An illegal discharge is any direct or indirect non-storm water discharge to the storm drain system. The only permitted illegal discharge exemptions are water line flushing , landscape irrigation or lawn watering, rising ground water, ground water infiltration to storm drains, uncontaminated pumped ground water, foundation or footing drains (not including active groundwater dewatering systems), crawl space pumps, air conditioning condensation, non-commercial washing of vehicles, swimming pools (if dechlorinated - less than one PPM chlorine), fire fighting activities, discharges authorized by the enforcement agency as being necessary to protect public health and safety, and any other water source meeting applicable water quality standards. Dye testing, as well, is an allowable discharge, but requires a verbal notification to the Department of Public Works prior to the time of the test.

How does the ordinance impact my business?

Many businesses, as a natural byproduct of their daily business operations, produce or handle materials that are or will become waste. This is true particularly in the service industry. As well, many service business facilities have drains and other outlets that could be discharging wastes or be illegally connected to the storm sewer system. Penalties for violations include fines as high as $30,000 dollars and revocation of access to the storm sewer system, so having an illegal discharge could greatly impact your business.

Ordinance Enforcement

Department of Public Works staff periodically inspect areas of the City for violations of the Stormwater Ordinance. Testing and reconnaissance of the storm sewer system allow Department personnel to understand if and where illicit connections have been made, and personnel routinely consider discharge practices and their adherence to the ordinance restrictions. Taking proactive steps to monitor and correct, if necessary, your business's discharges will save you time and monetary penalties in the future.

Preventing discharges before they begin…

Whether or not your operate an automotive service, a laundromat, a restaurant or a landscape service, there are several strategies you can employ to help eliminate the possibility of illegal discharges at your business. If your business, whatever its type, has facilities with floor drains, ask the Department of Public Works' Engineering Division if floor plans for your facilities exist. With these you may be able to determine if the floor drains are connected to the sanitary or storm sewer. Two other steps you can take follow below.

1. Keep water from contacting work areas

Work areas can be contaminated by raw materials, processed liquids, grease, oily wastes, heavy metals, and automotive and chemical fluids. Surfaces used for storing outdoor equipment or materials and for maintaining vehicles, for example, could all be sources of illegal discharges. As water runs across these work areas, it picks up contaminants as it flows. If that water reaches a storm drain or ditch, those contaminants will be discharged to the storm sewer system and are then considered illegal discharges. To prevent these, consider the following:

- Keep stormwater from contacting any industrial areas, either indoors or out.

- Install roofs or move industrial operations indoors to keep rain from falling onto work areas.

- Avoid practices like hosing down outdoor areas or washing commercial vehicles where the waste water will enter the storm sewer system.

2. Educate employees about preventing stormwater pollution

The first strategy won't work unless your employees and coworkers accurately understand that improper disposal of materials into the storm sewer system endangers it and pollutes the City's waters, and could result in penalties. Inform and remind your coworkers and employees that:

- Proper equipment washing procedures at designated washing areas prevents illegal discharges

- Closing all covers at dumpsters and other storage areas helps ensure compliance

- 'Topping-off' or overfilling fuel tanks increases the chances that you are illegally discharging

Illegal discharges at your business…

Different businesses, by discharging larger quantities or different types of wastewater and utilizing varied waste disposal practices, affect the storm sewer system in different ways. You can take business-specific prevention measures to decrease the chances that your business will be penalized for an illegal discharge.

⊕ Automotive Services

Vehicle maintenance, by its nature, involves circumstances that make illegal discharges possible. Take steps to eliminate discharges by disconnecting and covering any floor drains that are not necessary for your operation. Use absorbents for spills and sweep these up instead of hosing the areas down. Make sure that any chemicals and fluids are closed properly, stored above ground level either inside or out of any weather. Have any underground storage tanks evaluated for leaks or seepage, and maintain any grease or sand traps on a regular basis. If your facility produces untreated wash water, you will need to have some means to capture and treat it on-site.

⊕ Restaurants

Food preparation and dish washing also produce large amounts of waste water. As with automotive services, your business's wash water must discharge to the sanitary sewer, and not the storm sewer. Be certain that grease is disposed of in compliance with applicable law, and make certain that employees understand that pouring any greases or wastes down storm drains constitutes an ordinance violation.

⊕ Landscapers and Lawn Services

Landscaping services often produce large amounts of brush and other debris. If you own or operate such a service, you'll need to ensure that no brush, leaves, debris or topsoil are being stored or disposed of in or near stream banks or other stormwater conveyance channels. Excess fertilizers or pesticides should never be disposed of in or around storm drains or stored where they will be exposed to rainfall and stormwater runoff.

⊕ Laundromats

Laundry and washing services, as well, need to take measures to ensure that wash water and cleaning agents and contaminants are not entering the storm sewer and are not being improperly stored, where they might come in contact with stormwater runoff.

Saving time and money…

Understanding the intent and the restrictions of the Stormwater Ordinance will save you time and money. Knowing what is prohibited and what is allowable will help determine your site's layout, how you'll need to retrofit your existing site, or what practices will prevent ordinance violations and fines.

Department of Public Works
201 James Avenue
Colonial Heights, VA 23834
(804) 520-9334

Our City, Our Waters, Our World

Department of Public Works
Construction Site Plan Review Checklist

Plan Name: _____

Date Submitted: _____ **Project Contact:** _____

Plan Format:
Construction Site Plans shall be submitted to the Department of Public Works (DPW). Provide six (6) paper copies and one (1) PDF format copy to DPW to be dispersed for review among City departments.

All construction site plan sheets must be submitted in the proper order on the City of Colonial Heights border sheets (24 in x 36 in), which may be obtained from the City's website at www.colonialheightsva.gov.

Program Administration and Erosion and Sediment Control Plan Fees:
A fee must accompany the initial final plan submission in the amount of $ 750.00 plus $ 35.00 per each additional acre or portion thereof, not to exceed the amount of $ 1,100. There is an additional fee for the review of the E&SC plan of $ 500.00 plus $ 25.00 per each additional acre or portion thereof, not to exceed the amount of $ 750.00, §241-5.C. Checks are to be made payable to the City of Colonial Heights. *All plan checklist items below are shown as minimum requirements only. Additional information may be required based upon each individual site or subdivision plan.

All applicable items listed below must be submitted prior to issuance of Land Disturbance Permit:

____ 1. Estimate of the cost of all erosion and sediment control measures.
____ 2. Erosion and Sediment Control Surety for the amount of the approved estimate + 10%.
____ 3. A completed Land Disturbance Permit application.
____ 4. An engineer's cost estimate for all improvements within public easements and RoW.
____ 5. Public Improvements Performance Surety for the amount of the approved estimate.
____ 6. Completed Development Agreement form to cover work performed on City RoW or easements.
____ 7. Completed Right-of-Way Permit application if any work is to be performed within the City RoW. A separate surety may be required for multiple or substantial RoW disturbances.
____ 8. Submit a VPDES (stormwater) registration statement to the city if the disturbance area will be one (1) acre or greater, or 2,500 ft^2 or greater in a designated Chesapeake Bay Protection Act area. This and the corresponding fee should be submitted after the plan has been approved.
____ 9. Submit the VPDES (stormwater) Program Administration Fee along with the Registration Statement. The City delivers the VSMP data to DEQ for their approval. DEQ has two (2) weeks to review and provide the City with proof of coverage.
___ 10. The Stormwater Pollution Prevention Plan (SWPPP) should be submitted to and reviewed by the City prior to breaking ground.
___ 11. Supply a copy of the Army Corp of Engineers and DEQ approval for wetland disturbances.
___ 12. A signed copy of the Street/Ornamental Light Notification Letter.
___ 13. Any offsite easement plats need to be recorded and a copy submitted.
___ 14. Copy of notification letters that are to be sent to all adjacent property owners regarding the project and/or to obtain permission allowing for any land disturbance activity on their property.

All applicable items listed below must be submitted prior to receiving Final Approval for C/O:

____ 1. A CD, SD card, or USB storage device the format of which shall be AutoCAD dwg (2015 version or newer), must be submitted to the Department of Public Works with each of the following as a separate layer:
   A. Existing site conditions
   B. Final grading contour lines (min. 2 ft intervals)
   C. Proposed building footprint(s)
   D. All impervious area (parking lots, driveways, roads, etc)
   E. The storm sewer system
   F. Water and waste water systems
   G. All easements. Easements should be labelled as public or private.

____ 2. A layer report printed from AutoCAD must be submitted with the CD, SD card, or USB storage device. Both the storage device and the report must be labeled with the plan name, city project number, and the name of the engineering firm. All AutoCAD files must be referenced directly to the Virginia State Plane Coordinate system, South Zone, in the NAD83 Datum.

____ 3. As-Built plans will need to be submitted as one (1) paper copy of the full plan set and a copy of the approved plans in a PDF format. This information can be added to the same CD, SD card, or USB storage device as the AutoCAD layer files.

____ 4. Submit the following stormwater management items:
   ___ A. SWM/BMP certification form to be signed/sealed by certified professional engineer.
   ___ B. SWM/BMP maintenance agreement form with approved easement plat.

____ 5. SWM/BMP maintenance and access easement plat has been recorded. (if applicable)

____ 6. All other on-site easement plats have been recorded.

____ 7. Submit Backflow Prevention Assembly Test Report to the City Cross Connection Inspector for review and approval.

____ 8. Installation and approval on all construction related items shown on the approved plans.

____ 9. Installation and energization of any required street/ornamental lighting. (if applicable)

All applicable items listed below must be submitted prior to Final Construction Plan approval:

____ 1. All Planning Commission and Zoning requirements have been addressed.

____ 2. Received Planning/Building Inspection, Fire and Maintenance & Operations approvals prior to Department of Public Works plan approval.

____ 3. Provide a signed, sealed and bound copy of the traffic study to show the traffic impact at the nearest intersection or entrance of site onto public roadway, as well as the adequacy of the existing signal system and the left/right turn lanes.

____ 4. Provide a Water Quality Impact Assessment for any disturbance activity within the RMA Limits. The report shall be submitted to the Planning Department for review and approval.

____ 5. Any existing perennial (continuous flowing) streams or ravine areas will require a perennial stream flow determination to be performed, and report forwarded to the Planning Department for review and approval.

____ 6. Street construction must use the most current VDOT Subdivision Street Acceptance Requirements and City standards. The owner's licensed geotechnical inspector (OLGI) shall submit to the City Engineer a geotechnical analysis of in-situ soil properties, at least two (2) CBRs within the proposed roadway, and final pavement design recommendation for City approval. The OLGI shall provide test results for all materials within the Public Roadway including characteristics of existing fill materials.

Plan of Development Standard City Cover Sheet

____ 1. Site Data contact information shown for the following:
___ A. Owner ___ B. Developer ___ C. Engineer
____ 2. Site Address
____ 3. Tax Map #
____ 4. Acreage shown:
___ A. Total Site ___ B. Total Disturbed ___ C. Total Impervious
____ 5. Zoning shown
____ 6. Use of development
____ 7. Previous Approval Information shown for the following:
___ A. Date of Conditional Approval
___ B. Date of Final Approval (leave blank until plans are likely to be approved)
___ C. Administrative # (PoD Approval No.)
___ D. Zoning Case # (if applicable)
___ E. Variance Case # (if applicable)
___ F. Provisional Use permit # (if applicable)
___ G. Special Exemption Use # (if applicable)
____ 8. Utility contact information shown for all effected utilities within the project limits.
____ 9. Flood Plain Information
___ 10. Topographical Information
___ 11. Wetland Information
___ A. Resource Protection Area ___ B. Resource Management Area
___ 12. Project Requires VSMP permit coverage? VSMP permit # (if applicable).
___ 13. Note stating how Chesapeake Bay Protection Act compliance has been achieved for this project.
___ 14. City Project Number shown at lower left corner of sheet.
___ 15. Commercial Section information shown
___ 16. Residential Section information shown
___ 17. Check Title Sheet Index for completeness. Sheets should match in name, order, and numbering.
___ 18. Plan Name and Section at top of sheet
___ 19. Vicinity Map showing existing road names, waterways, etc…
___ 20. Submittal Date and revision dates shown
___ 21. Responsible Land Disturber Certification block filled in and signed.
___ 22. Engineers Certification block filled in and signed.
___ 23. Check all sheets for Engineer's/Surveyor's seal, seal should be signed and dated.
___ 24. Check that Engineering/Surveying Company's name, address, phone number, and other useful contact information is shown on side panel of this sheet and on all sheets of the plan set.
___ 25. Check all sheets for North Arrow and its proper orientation.

Plan of Development Standard Notes Sheet

____ 1. Use City provided notes from the Documents Online page of the City's website.
____ 2. Sheet properly labeled as Plan of Development Standard Notes.
____ 3. Add project specific notes to the end of City provided notes.

Standard Details Sheet

____ 1. Sheet properly labeled as Standard Details.
____ 2. Include all city details that pertain to this project site.

Additional Detail Sheet(s)

____ 1. Show details of proposed structures for which there is no standard city drawing. This includes fencing/screening, retaining walls, dumpster pads, concrete pillars or bollards.
____ 2. Any additional city details that didn't fit on the initial details sheet.
____ 3. If a VDOT or City standard is modified, a detail must be shown with all applicable dimensions drawn to scale and the number assigned to that structure which corresponds to its detail.
____ 4. Number assigned to any structure shall be shown with detail.

Standard Utility Notes and Details Sheet

____ 1. Sheet properly labeled as Standard Utility Notes and Details.
____ 2. Show only notes and details that pertain to this site.

Additional Utility Detail Sheet(s) shall be added to contain the following information:

____ 1. Sheet properly labeled as Utility Notes and Details
____ 2. Show additional City utility details not shown on standard Utility Detail Sheet of any proposed utility work. (fire vaults, sampling manhole, lowering water main, etc…)
____ 3. Number assigned to each utility shall be shown with a detail.

Erosion and Sediment Control Notes Sheet

____ 1. Sheet properly labeled as Erosion and Sediment Control Notes.
____ 2. Environmental Assessment Information has been filled out and signed.
____ 3. Acknowledgements section has been signed by owner/operator.
____ 4. The City's provided notes sheet has been used. This can be found on our Documents Online.

Erosion and Sediment Control Detail Sheet(s)

____ 1. Sheet properly labeled as Erosion and Sediment Control Details.
____ 2. Temporary silt trap schedule completed if contributing drainage area is less than 3 acres.
____ 3. Temporary sediment basin schedule completed if contributing drainage area is > 3 acres.
____ 4. Outfall Adequacy schedule has been completed.
____ 5. Any additional E&SC details not already shown anywhere else. Provide applicable information for erosion control measures that are specified to be used on this particular site such as enlarged views and cross-sections of proposed silt traps and/or sediment basins.

Erosion and Sediment Control (E&SC) Plan Sheet(s)

____ 1. Sheet(s) properly labeled as Erosion and Sediment Control Plan.
____ 2. Graphic Scale shown.
____ 3. E&SC Legend shows erosion and sediment control standard VESCH abbreviations, symbols and specification numbers. Control measure labels match the symbols on the legend.
____ 4. A multi-phase plan is being used for large sites and subdivisions.
____ 5. The phase-one clearing limits need to be restricted to only those necessary to install the perimeter erosion control measures which are limited to: Safety Fence, CE, Silt Fence, and DD.
____ 6. Show secondary features shaded black (proposed building, property lines, adjacent roadways, parking areas, etc…) such that the E&SC measures and related activities standout on the sheet in darker ink.
____ 7. Proposed slopes greater than 3:1 ratio need to be shown with permanent slope stabilization.
____ 8. The exact limits of the following must be shown and labeled on the E&SC plan
___ A. Limits of Dist. ___ B. 100-year flood plain ___ C. Resource Protection Area (RPA)
___ D. Limits of Resource Management Area (RMA) ___ E. Limits of Wetlands Area(s)
____ 9. The Construction Entrance (VESCH 3.02) should be shown on the plan, to scale, and meet the minimum dimensions of 12 ft x 70 ft.

___ 10. If a wash rack is required, add the following note: "Installation of a wash rack is required for this site. All equipment and vehicles must clear mud and debris from tires prior to leaving the construction area. Positive drainage must be maintained to a sediment trapping device."
___ 11. Soil Stockpiles are logically located at up-slope areas and with proper E&SC measures
___ 12. Existing contours are shown with dashed lines shaded black. (maximum contour interval of 2 ft)
___ 13. Proposed grading contours are shown with solid lines. (maximum contour interval of 2 ft)
___ 14. Safety Fence (VESCH 3.01) is required around the perimeter of any site that is directly adjacent to pedestrian or vehicular traffic.
___ 15. Temporary Slope Drains (VESCH 3.15) are being used on steep slopes
___ 16. Temporary Sediment Traps(s) (VESCH 3.13) is properly designed
___ 17. Temporary Sediment Basin(s) (VESCH 3.14) is properly designed
___ 18. Construction Narrative is required which includes the following:
- ___ A. Project Description to briefly describe the nature and purpose of the land disturbing activity and the area (acres) to be disturbed.
- ___ B. Existing Site Conditions
- ___ C. Adjacent Areas, should describe neighboring areas such as streams, lakes, roads, residential areas, etc… which might be affected by the land disturbance.
- ___ D. Offsite Areas to be disturbed with construction of the site.
- ___ E. Soils, give a brief description of the soils on the site giving such information as soil name, mapping unit, erodibility, permeability, depth, texture and soil structure.
- ___ F. Critical Areas is a description of areas on the site which have potentially serious erosion problems (e.g. steep slopes, channels, shallow water table, underground springs, etc…)
- ___ G. Erosion and Sediment Control Measures gives a description of which E&SC measures will be used to control siltation during the land disturbance activity.
- ___ H. Permanent stabilization a brief description including specifications of how the site will become stabilized after construction is completed.
- ___ I. Stormwater Runoff Considerations to describe the strategy to control stormwater runoff and prevent flooding or channel degradation downstream.
- ___ J. Maintenance to note that all E&SC measures will be checked daily and after each significant rainfall and all sediment traps and gravel outlets will be cleaned, etc…

___ 19. Erosion Control Sequence of Construction must be shown to include some of the following:
- ___ A. The first step in the erosion control construction sequence requires the owner to give the City inspector 48 hours notification to schedule an on-site pre-construction meeting for the issuance of the LDP permit.
- ___ B. The second step should indicate that the wetlands and RPA are to be staked/flagged in the field by a qualified land surveyor or environmental scientist.
- ___ C. The next steps in the sequence must include the installation of the construction entrance, silt fence, diversion dikes, silt traps and/or all other applicable E&SC measures to be installed on-site in their proper order.
- ___ D. All actual construction items must be shown in their proper sequence of events, such as demolition, excavation, utilities, storm sewer/inlets, curb & gutter, sidewalks, stone base, asphalt pavement, building construction, etc…
- ___ E. Steps must be shown to include the installation of inlet protection and/or the removal of temporary E&SC devices as site construction progresses.
- ___ F. One step must be added which states that all proposed sediment traps and basins are to remain in place until all on-site contributing areas are stabilized.
- ___ G. Explain how the sediment basin will be converted into a stormwater BMP facility, and is <u>required</u> to be certified by a professional engineer as properly constructed.
- ___ H. Additional notes that may be necessary to explain the intent and purpose of the plans.

Stormwater Management and BMP Notes, Details, and Calculations Sheet

____ 1. Sheet properly labeled as SWM/BMP Notes, Details, and Calculations.
____ 2. VRRM spreadsheets for performance-based water quality calculations are given
____ 3. Culverts downstream of the site outfall(s) must be analyzed for adequacy based on the 10-year storm event. Existing inadequate culverts must be reconstructed and/or on-site detention must provide the capability to handle the design storm event.
____ 4. Provide BMP facility detail(s) at a scale (1"=20') large enough to show fine details
____ 5. Clearly show and label the total drainage area for each BMP.
___ A. Show/label all basin inflow/outfall pipes with dimensions (length, size, type, grade)
___ B. Show/label the outlet protection at the end of the outfall pipe. (length, width, size)
___ C. Give the elevation and length and width dimensions of the bottom of the basin
___ D. Provide emergency spillway detail to show height, width, side slopes and type of lining. The lining may be grass or rip-rap on natural/cut ground, but must be concrete in a fill area.
___ E. Show/label water surface elevations at the 2, 10, and 100-yr storm events.
___ F. Top of dam elevation providing minimum 1 ft freeboard above 100-year storm elevation
___ G. Top of dam width should be 8 ft min and maximum side slopes steepness of 3:1
___ H. Show/label the riser, base, orifice (with detail), trash rack (with fastening detail), outfall pipe, etc… along with all proposed elevations, material types, and sizes.
____ 6. SWM/BMP maintenance and access easement must be shown enclosing the entire facility
___ A. Established 25 ft off 100-yr storm event or toe of dam.
___ B. Provide minimum of 20 ft wide access easement from basin to nearest City RoW.
___ C. Is an access road to the BMP provided?
____ 7. SWM/BMP safety measures are required for slopes steeper than 6:1.
___ A. Basins 4 ft or less in depth and < 1 acre surface area require a safety bench.
___ B. Basins greater than 4 ft in depth or more than 1 acre surface area, require both a safety bench and an aquatic bench.
___ 1. Safety Bench shown as a minimum of 10 ft wide at a 10:1 slope
___ 2. Aquatic Bench shown as a minimum of 6 ft wide at a 6:1 slope
___ C. Fencing shown around basin, include type of material and height (minimum 6 ft tall)
___ D. Show location of access gate(s) for fencing (minimum 12 ft wide opening)
____ 8. Dam embankment section needs to specify that it must be built using impermeable clay.
____ 9. All permanent riser barrels and basin outfalls need to be O-ring RCP pipe.
___ 10. Provide screening around perimeter of basin as indicated by the City's landscaping code section
___ 11. Check all BMP construction details using the DEQ's BMP Clearinghouse design guidelines
___ 12. Nutrient off-set credits purchase has been arranged and documentation has been provided?

Demolition Plan Sheet

____ 1. Sheet properly labeled as Demolition Plan.
____ 2. Plans shall be to a maximum zoomed out scale of 1 in = 50 ft.
____ 3. Shade black all secondary site features so that all proposed primary demolition plans stand out.
____ 4. Hatch all existing structures that are being removed.
____ 5. Show the location of existing storm and sanitary sewer systems, water mains, fire hydrants, service lines, etc… Provide a note for all structures to be removed, replaced or relocated.
____ 6. Show the location of all other existing utilities, light poles and fixtures on-site and directly adjacent to the proposed site. Note all utilities to be removed, replaced or relocated.
____ 7. Show/indicate all existing buildings, curbing, sidewalk, pavement, fencing, and all other miscellaneous structures to be removed from site prior to construction.
____ 8. List any additional demolition notes or legends necessary to explain the intent of the work.
____ 9. Provide documentation for closure of wells, grease traps, AST/UST's, abandoned utilities, etc.

Site Plan Sheet(s)

____ 1. Sheet properly labeled as Site Plan.
____ 2. Plans shall be to a maximum zoomed out scale of 1 in = 50 ft
____ 3. Indicate all street names, RoW widths, and existing State route numbers if applicable
____ 4. Show/indicate all lot lines and block/lot numbers. Show information for all adjacent properties including GPIN's/Tax ID's (shaded black)
____ 5. Show all proposed and existing easements with deed book and page number
____ 6. Show coordinate points on at least two (2) property corners
____ 7. Show bearings and distances along all proposed and existing property lines.
____ 8. Show/indicate location and description of at least two (2) elevation benchmarks/monuments
____ 9. Dimensions and square footage of all proposed buildings must be shown.
___ 10. Setback distances from proposed building(s) to RoW line must be shown with a dashed line depicting the physical location of the setback line.
___ 11. Show a minimum 10 ft setback from the 100-yr flood plain, wetlands, and RPA line (whichever is most restrictive) must be part of the site design.
___ 12. The exact limits of the following must be shown and labeled on the plan sheet(s)
    ___ A. Limits of Disturbance ___ B. 100-yr flood plain ___ C. RPA
    ___ D. Limits of the Resource Management Area ___ E. Limits of Wetland Areas
___ 13. Indicate proposed and existing waterways on-site or in the vicinity of the site.
___ 14. Show the location, size, and type of existing and proposed utilities including storm and sanitary sewer systems, water mains, fire hydrants, service lines, street lighting, etc…
___ 15. Indicate the location and dimensions of all proposed entrances, exits, inter-parking connectors, off-street parking areas, loading zones, handicapped spaces, interior drives, sidewalks, etc…
___ 16. Show existing site features shaded black or dashed to differentiate between pre and post construction
___ 17. Stipple all areas proposed to be paved. Differentiate between types of pavement if applicable.
___ 18. Does it meet Americans with Disability Act (ADA) Accessibility Guidelines standards?
    ___ A. There is at least one logical access route from city RoW to main entrance of building
    ___ B. CG-12 ramps are shown at every intersection and sidewalk driveway crossing
    ___ C. ADA ramps need to be shown at all entrances to proposed commercial/public buildings
    ___ D. ADA ramps must lead to a flat landing of proper dimensions, has a lateral slope of ≤ 2%, has a maximum grade of ≤ 5%.
    ___ E. Sidewalks/ramps must be shown adjacent to proposed handicapped parking spaces.
    ___ F. Handicapped parking spaces with at least one van accessible space has been provided with appropriate signage and pavement markings.
    ___ G. All ADA parking spaces and aisles adjacent to parking spaces shall comply with the minimum dimensions shown under Section 286-518.14 of the City Zoning Ordinance.
___ 19. Show the dimensions for the dumpster pad along with required screening/fencing.
___ 20. Sidewalk connects parking lots and adjoining sites.
___ 21. 10 ft landscaping strip needs to be shown around any proposed buildings.
___ 22. Shared entrances need to be shown with ingress/egress easements to adjoining sites.
___ 23. At least one cross easement should be provided to link adjoining parking lots.
___ 24. All curb radius is shown at entrances and throughout parking areas.
___ 25. All Traffic control markings and signage shown.
___ 26. Dry Gutter is not allowed within City RoW.
___ 27. Bituminous curbing (Std. MC-3A) and Type III barricades are required along the edge of pavement for entrances to future areas of development.
___ 28. Bumper blocks provided on all parking spaces that are directly adjacent to sidewalks. If bumper blocks are not provided, then a minimum 2 ft grass strip must be added between curb and sidewalk, or the width of proposed sidewalk must be increased to 7 ft.

___ 29. Fencing must be shown on the plans along the top of any proposed retaining wall(s) exceeding a height of 30 inches above ground elevation. Fencing detail must be added to plans.
___ 30. The maximum allowable grade for a subdivision/commercial entrance in the first 25 ft should be no more than 3%. The maximum allowable grade for the next 40 ft is no more than 6%.
___ 31. Provide design vehicle (road tractor w/ 53 ft trailer) turning radius details using the latest AASHTO design standards. Include reference dimensions as set by Fire and Rescue advice
___ 32. List any additional construction notes necessary to explain the intent of the work.

Utility Plan Sheet(s)

____ 1. Sheet properly labeled as Utility Plan.
____ 2. Plans shall be to a maximum zoomed out scale of 1 in = 50 ft.
____ 3. Includes the overall water and sewer layouts. Has phasing of the development if more than one section is being proposed.
____ 4. Includes basic layout of general utilities such as gas, electric, etc.
____ 5. Utility plan needs to show all other features shaded black (property lines/information, contours, buildings, drainage structures, adjacent roadways, etc…) such that all proposed utility items and related activities standout on the sheet in darker print.
____ 6. Indicate with arrows the flow direction of utilities, subsurface drains, streams, etc…
____ 7. All existing water and sewer lines properly labeled with material type, pipe diameter, and with profile drawing for distance reference.
____ 8. A minimum of 10 ft horizontal separation is required between sewer and waterlines.
____ 9. If a horizontal bore is shown provide the following information: pit location (average size 8' x 35'), proposed bore location, length of bore.
___ 10. If any private force main and/or pump station are to be installed for the development, add a note stating: "The Owner(s) or Home Owner's Association will be responsible for maintaining the sanitary sewer pump station and the private force main."
___ 11. The plan must show all fire hydrants, meter settings, blow-offs, manholes, tees, bends, valves, and reducers, with each appurtenance properly labeled by size and material type. Note that the location of any proposed fire hydrant(s) must comply with all design guidelines and will need to be approved through the Fire Department.
___ 12. All sanitary sewer pipes, manholes, clean-outs, tees, bends, connections, etc…, must be labeled with the proper size, grade, length, direction of flow, material type, and pipe class.
___ 13. Indicate the location and dimensions of all proposed water and sewer service connections.
___ A. Size/type of proposed sewer lateral pipe and cleanout(s)
___ B. Size/type of proposed water service line(s). Show the tap/corporation stop or saddle, the stub line and material type, the size of water meter setter yoke, and meter box. The tap, stub, setter, and meter must be matching diameter and labeled on sheet
___ 14. All valve sizes must match the size of the pipe.
___ 15. There must be a <u>separate tap and meter</u> installed for any irrigation lines at the site. If there is no proposed irrigation for the site, then add a note stating: "a separate meter and service will be required should an underground irrigation system be installed in the future."
___ 16. Any sewer/water line stubs for future extensions need to be shown installed beyond edge of pavement, curb or sidewalk.
___ 17. A cutoff valve must be installed at the end of any proposed waterline that will be extended for future phases of development.
___ 18. Proposed water main tie-ins must show the valve to be used for cut off during the tie-in.
___ 19. Proposed water system must be designed in accordance with available pressures. Fire flow and pressure calculations must be provided in accordance with Appendix 14.

___ 20. Add a note (if applicable) stating: "Any proposed water connection tie-in requiring the water service for an existing business to be cutoff must occur during non-business hours and be coordinated with the business owner."
___ 21. All proposed water meter boxes must be shown at the edge of the right of way, outside of vehicular travel areas. A cast iron box must be specified at locations where it is not possible to locate the boxes out of the driveways, and/or vehicular travel areas.
___ 22. All private manholes must be shown on private property and not within the City's RoW.
___ 23. Manholes have been designed to an elevation above the 100-yr flood plain elevation as set forth in the design standards.
___ 24. Manholes have been labeled with top and invert elevations, coordinates, locations, size, and inverts of drop stacks.
___ 25. Pipes between manholes must be of the same material and class.
___ 26. All proposed manholes to be located downstream of force mains need to be shown with acid resistant linings for a distance of up to 1,200 ft downstream from the force main discharge.
___ 27. Sewer line connections at manholes by the proposed new line must be at an angle of 90° or more obtuse. If an exception has been granted, the engineer may increase the drop through the manhole riser to compensate for the reduced angle. Include a detail showing the appropriate invert shape that will achieve a similar flow result
___ 28. Sanitary sewer manholes that are proposed within public or private RoW areas should be located either on the center line, or the center of a travel lane where tires are less likely to strike it.
___ 29. Whenever connecting sewer laterals to an existing sewer line, proper notation must be put on the plans stating: "The contractor must use a mechanical hole cutter when tapping the existing sewer line and that an approved saddle shall be used, and that parcels potentially affected by this activity have been identified and notified."
___ 30. Where new manholes are proposed over existing lines, the distances from the new manhole to the two existing manholes needs to be shown along with inverts of each existing manhole and the slope of existing line from new manhole to the existing upstream/downstream manholes.
___ 31. Sampling manholes are required to be provided at the property line to facilitate random 24-hour sampling for new facilities (restaurants, carwashes, auto repair shops, laundromats, etc…) currently regulated by local or federal industrial waste pretreatment laws.
___ 32. Finished floor/basement elevations will need to be shown on the plan.
___ 33. Have corresponding easements been shown for all utilities and marked as public or private?
___ 34. Additional notes that may be necessary to explain the intent and purpose of the plans.

Utility Profile Sheet(s)

____ 1. Sheet properly labeled as Utility Profile Sheet.
____ 2. Proposed, existing, and original ground elevations are shown.
____ 3. Centerline profiles for existing and proposed stations must be shown for all water and sewer lines. They should also show existing and proposed ground surface grades over centerline of system(s).
____ 4. Stations shown on profile(s) must agree with stations shown on plan.
____ 5. Profile(s) should show all proposed and existing utility crossings at proper locations and grades
____ 6. Each utility system (water and sewer) should be shown in its entirety to include at a minimum, a unique number for each structure, gradient and length of each pipe section, and the size and type of material being used.
____ 7. Show valve, T's, meters, blow-offs, hydrants, manholes, clean-outs, bends, grinder pumps, flushing connections, etc., with proposed elevations for tops and inverts.
____ 8. Show existing and proposed drainage improvements passing perpendicular to the system or that share a common easement (include outer elevations).
____ 9. All slope grades are shown to the nearest hundredth of a percent.

___ 10. Gravity flow sewer systems must be ≥ 0.4% minimum slope. …Variance requests can only be granted by the Director of Public Works.
___ 11. A legend must be provided for sewer and water lines, other utilities, structures, existing and proposed ground and pavement profiles.
___ 12. All water lines must have a minimum cover of 3.5 ft for frost reasons.
___ 13. The crowns of all sewer lines enter the manholes at crown level or higher as specified in the design standards.
___ 14. A minimum of 18 in. vertical clearance must be designed and provided at crossings with all other non-essential utilities, or as otherwise specified by Public Works.

Grading and Drainage Plan Sheet(s)

____ 1. Sheet properly labeled as Grading and Drainage Plan.
____ 2. Plans shall be to a scale of 1 in = 50 ft or drawn to a more zoomed-in scale.
____ 3. A Legend should explain all appropriate symbols for items shown on the plan.
____ 4. Plan sheet needs to show secondary features shaded black such that all proposed grading and drainage features and related activity standout on the sheet.
____ 5. A Drainage Summary table is shown (Str. #, Type/Size pipe or inlet, Inv. Elevations).
____ 6. Indicate all proposed and existing storm sewers, culverts, and appurtenances. Identify by structure number, type, size, slot length, material, inverts, etc...
____ 7. Indicate with arrows the direction of flow in all gutters, storm sewers, subsurface drains, ditches, streams, etc.
____ 8. Indicate location and description of all benchmarks. Reference elevations to mean sea level.
____ 9. Finished floor elevation(s) of all proposed and existing buildings must be shown.
___ 10. Existing contours shown as dashed lines with 5' maximum intervals shown in shaded black.
___ 11. Proposed contours shown as solid lines with 5' maximum intervals shown in black.
___ 12. Top of Curb elevations must be shown at the nose of all radial curbing and at all appreciable breaks in horizontal or vertical alignment.
___ 13. Dry gutter is required where runoff flows away from the face of curbing. Show with cross-hatch symbol and provide a dry gutter construction detail on the plan. Note: Dry Gutter is not allowed within City RoW's.
___ 14. The exact limits of the following must be shown; Limits of Disturbance, Limits of 100-yr flood plain, Limits of Resource Protection Area (R.P.A.), Limits of Resource Management Area (R.M.A.) Limits of Wetland Area(s).
___ 15. Any additional notes that may be necessary to explain the intent and purpose of the plan.

Roadway and Storm Sewer Profile Sheet(s)

____ 1. Show existing centerline profiles and stations on proposed streets, storm sewers, stream relocations and outfall ditches.
____ 2. The finished grade line of all streets must show complete street curve data to include percent of grade, stationing, elevations, L, K, A, R, Delta, Chord Distance, and Bearing.
____ 3. Centerline grades on major streets shall ≤ 5% and minor street grades shall be ≤ 7%. Centerline grades less than three-tenths percent (0.3%) are not allowed.
____ 4. Stations shown on the profile sheet must agree in all ways with stations shown on the plan.
____ 5. Show proposed culverts, utilities, and storm sewer crossings at the proper locations and grades.
____ 6. Each storm sewer system and open-channel system must be shown in its entirety and include the following information; structure number(s), gradient and length of run, pipe diameter and material, 10-yr storm hydraulic design depth.
____ 7. Show existing and proposed ground surface elevations over centerline of system(s)
____ 8. Provide a symbol legend for structures, ground elevations, pavement profiles, utilities, etc.

Drainage Area(s) Sheet(s)

____ 1. Information for each situation (2-yr 24-hr Pre and Post, 10-yr 24-hr Pre and Post) should be given for each outfall.

____ 2. The following information for each drainage area (DA) should be given

___ A. CN, weighted for each DA ___ B. Q, runoff volume inches ___ C. T_c, hours

___ D. q_u, unit peak discharge ___ E. q_p, peak discharge, cfs ___ F. F_p, pond/swamp adj. factor

____ 3. Provide contrasting data maps for pre and post-development showing the following:

___ A. Outlined drainage areas ___ B. Total acres of drainage area to each outfall

___ C. Existing/Created impervious area, ft^2 ___ E. Hydrologic soil group for each DA

____ 4. Show existing and proposed contours using an appropriate interval.

____ 5. Include important pre and post-development site features for reference.

____ 6. Use arrows to indicate direction of flow on all roads, ditches, pipes, rivers, etc.

____ 7. Provide the VRRM spreadsheet for each drainage to show required quality compliance

Hydraulics: Manmade Conveyance System design meets 9VAC25-870-66.1 minimum criteria?

____ 1. Enclosed channel system(s) (Piping)

___ A. 10-yr storm event peak discharge is less than pipe capacity

___ B. All pipes within the City RoW are Class III RCP or higher rated

___ C. Manhole steps required in structures 4 feet and greater in depth

___ D. Inlet/Outlet protection is specified at storm sewer culverts and outfalls

___ E. Pipe grades exceeding 15% require pipe anchors at 10 ft on-center

____ 2. Open channel system(s)

___ A. Paved channels exceeding 15% require anchor lugs at 10 ft on-center.

___ B. The maximum permissible velocity allowable on bare earth is 3.5 fps. Velocities between 3.5-4.0 fps require jute mesh lining and velocities greater than 4.0 fps require structural lining of either rip-rap or concrete.

___ C. Open channel depths shall be less than 3 ft, otherwise channels shall be piped

___ D. Side slopes shall not be steeper than 2:1 ratio

___ E. Open channel slopes less than 0.75% shall be paved.

___ F. Open channel storm sewer minimum allowable slope is $\geq 0.2\%$

____ 3. Show hydraulic grade line calculations for the 10-yr and 100-yr storm events.

____ 4. All roof water and downspouts are collected and discharged in a non-erodible manner?

____ 5. Headwalls/End-walls are required for pipes $\geq$ 24 in, multiple barrels, or slopes > 15%.

Fire Plan Sheet(s)

____ 1. Plans shall be to a maximum zoomed out scale of 1 in = 50 ft.

____ 2. Shade black all secondary site features so that all proposed fire lane markings, signage, turn radii, and other related primary fire plan information stands out.

____ 3. Indicate curbing or edge of pavement that is to be painted yellow to mark fire lanes. Yellow thermoplastic Type B Class 1 striping can be substituted for painting the face of curb.

____ 4. Show location(s) of "No Parking Fire Lane" signs to be installed along fire lanes.

____ 5. Fire lane signs shown with 60 ft spacing between posts, or as approved by the Fire Marshal.

____ 6. Show the location of existing and proposed fire hydrants. Clearly label the difference.

____ 7. No trees or bushes shall be located within 3 ft of <u>any</u> Fire Department apparatus.

____ 8. Label Fire Vault. Indicate FDC location with signage. Give additional notes if necessary.

____ 9. Show a turning radius diagram for fire vehicle apparatus travelling through fire lane(s).

Traffic Control Plan Sheet(s)

____ 1. Plans shall be to a maximum zoomed out scale of 1 in = 50 ft.
____ 2. Shade black all secondary site features so that proposed traffic control improvements stand out.
____ 3. Include a temporary traffic control plan for the construction phase of project according to the Virginia Work Area Protection manual. Give applicable details.
____ 4. Show permanent vehicle detection device(s) (PVDD), show modifications to existing PVDDs. The city prefers inset wire loops.
____ 5. Show proposed and existing traffic control boxes, associated wiring, and associated easements.
____ 6. Show modifications to existing traffic signals, overhead signage, and other roadway markings.
____ 7. Include applicable notes and details pertinent to traffic control improvements and modifications to existing traffic signals/signage to explain the intent of the work.
____ 8. Site work involving lane closures along primary routes must add the following note: "Allowable work time shall be from 9:00 am - 3:00 pm Monday through Friday for any lane closure(s) in the RoW of (insert road name)."
____ 9. Show transitional pavement markings such that new blend into existing markings or vice-versa.
___ 10. Directional arrows must be shown on pavement for all turning lanes.
___ 11. Address the safety of vehicular traffic movement at site entrances and exits.
___ 12. Mini skip lines need to be shown for dual turn lanes.
___ 13. New entrances or roadways must be properly aligned with existing roadways and intersections.
___ 14. Show dimensions of entrances and lane widths from curb face to curb face, and lane lengths.
___ 15. All pavement markings within city RoW must be Thermoplastic, Type B, Class I.
___ 16. 30" minimum R1-1 stop signs, and 24" stop bars need to be shown at all exits and intersections.

Lighting Plan

____ 1. Shade black all secondary site features. Use bold black for existing and proposed lighting.
____ 2. Show schematics for proposed and existing underground wiring for streetlights and cabinets.
____ 3. Include a note for installing streetlights and cabinets stating "Exact location of proposed light pole(s) and cabinet(s) to be staked out and approved by Public Works prior to field installation."
____ 4. Provide a description of the luminaries, including lamps, poles/supports, and shielding devices. Standard detail catalogue cut sheets from the manufacturer are sufficient.
____ 5. Include required easement(s) necessary for wiring or placement of light fixture(s).
____ 6. Ornamental streetlights along Boulevard must include the City's standard detail in the plan.
____ 7. Ornamental light cabinets must have 4 ft^2 min. concrete pad, and have a direct on/off switch.
____ 8. Exterior fixtures shall be shielded so that light is directed toward the ground only and should not glare onto adjoining streets or residential properties. Light intensity along property lines of any civic, office, commercial, or industrial use type shall not exceed one foot-candle.
____ 9. Include photometric analysis on the sheet, shown as individual point values in a grid pattern, covering the entire site.
___ 10. Freestanding parking lot light fixture shall not exceed 20 ft in height above grade.

Chesapeake Bay Preservation Areas (requirements if present on site)

____ 1. A site specific RPA and RMA delineation has been performed by a licensed professional qualified to perform such work in VA and has submitted a certified delineation report for review.
____ 2. Verify that the findings of the delineation correctly identify and locate critical areas, and that the site plan correctly and clearly depicts the critical areas as identified.
____ 3. Depiction of existing vegetation has been shown on the site plan with specific instruction as to how the chosen preservation method is to be performed.
____ 4. Pictorial and/or video evidence of pre-development conditions of the undisturbed RPA have been submitted for record.

____ 5. All RPA features shall be shown. See city code §286-326.12. B.
- ___ A. Tidal wetlands
- ___ B. Non-tidal wetlands connected by surface flow and contiguous to tidal wetlands or water bodies with perennial flow
- ___ C. Tidal shores
- ___ D. Such other lands considered by the City to be necessary to protect the quality of state waters, including highly erodible soils and slopes in excess of 25%
- ___ E. A vegetated buffer area not less than 100 feet in width located adjacent to and landward of a component of an RPA feature listed above, and along both sides of any water body with perennial flow.

____ 6. The RMA shall be shown. See city code §286-326.14 for definition.
____ 7. City staff has confirmed by use of maps, physical site visit, available data, or state agency consultant that the site plan designer has properly shown the lines as delineated.
____ 8. If required by the Director of Planning, a Water Quality Impact Assessment shall be performed. (The Director of Planning determines if the WQIA will be a major or minor study)
____ 9. The plan shows the required 10' setback line from the RPA feature.
___ 10. Encroachment(s) of the proposed site into designated CBPA is clearly identified and shown.
___ 11. All approved encroachments must meet the standards and requirements of the *Riparian Buffer Modification and Mitigation Manual*.
___ 12. As a part of the initial phase of the E&SC plan, a step in the sequence of construction shall specifically include a statement that wetlands must be identified and flagged for preservation.
___ 13. For E&SC, Stormwater, and Landscaping requirements, refer to previous checklist sections.

All City of Colonial Heights standard sheets, details, notes, forms, and applications may be obtained from the City's website **www.colonialheightsva.gov** under Public Works, Documents Online.

Stormwater Training 2020 – 2021

No stormwater training occurred due to COVID-19.

Meeting Initiation Checklist

Project Name *(where applicable)*:

Facilitator:

Meeting Date:

Background				
Reason for meeting:				
Objectives				
	Yes	**No**	**N/A**	**Explain if applicable:**
Did *prior* meeting objectives exist?	☐	☐	☐	
Did these objectives change throughout the course of the meeting?	☐	☐	☐	
Were the objectives of the meeting prioritized?	☐	☐	☐	
Have action items been associated to these objectives?	☐	☐	☐	*If yes, explain under* **Action** *section, below.*
Constraint(s)				
	Yes	**No**	**N/A**	**Comments**
Do the objectives/action items have time limits or deadlines attached to them?	☐	☐	☐	
Have interdependencies between other projects or continuing objectives been identified?	☐	☐	☐	
Have community constraints been identified?	☐	☐	☐	
Have administrative constraints been identified?	☐	☐	☐	

Meeting Deliverables				
	Yes	**No**	**N/A**	**Comments**
Were deliverables defined during the meeting?	☐	☐	☐	
Has acceptance criteria been established for each deliverable?	☐	☐	☐	
Implementation Estimates				
	Yes	**No**	**N/A**	**Comments**
Proposed start date of action items	☐	☐	☐	
Proposed end date	☐	☐	☐	

Actions:

Use this section to identify the meeting's action items and to assign an action item ID, if applicable.

ID	Action Item	Assigned To	Due By

Attendants:

Name: _____ **Department:** _____ **Date:** ___/___/____

Name: _____ **Department:** _____ **Date:** ___/___/____

Name: _____ **Department:** _____ **Date:** ___/___/____

Name: _____ **Department:** _____ **Date:** ___/___/____

Name: _____ **Department:** _____ **Date:** ___/___/____

CITY OF COLONIAL HEIGHTS
DEPARTMENT OF PUBLIC WORKS
OPERATION AND MAINTENANCE INSPECTION RECORD

1. **A licensed professional engineer must conduct all inspections utilizing the approved construction plans.**
2. **As a minimum, all items must be inspected and any discrepancies and necessary repairs noted. Include estimated cost of necessary repairs or actions.**
3. **Upon completion of the inspection, one (1) copy, indicating estimated completion date and cost of noted discrepancies and repairs, is to be forwarded by the inspection firm to the: City of Colonial Heights, Department of Public Works, Attn: SWM/BMP Inspection Report, P. O. Box 3401 Colonial Heights, VA 23834. The original form must be forwarded to the owner of the facility.**
4. **The facility owner's representative must indicate on the original form the actual completion date and actual cost of acquired repairs, after which the facility owner must sign and return one (1) copy of the form to the: City of Colonial Heights, Department of Public Works, Attn: SWM/BMPInspection Report, P.O. Box 3401 Colonial Heights, VA 23834.**

Name of Project:				**Location Project:**	
Owner of Facility:				**Date of Inspection:**	
Inspection Item	Acceptable?		N/A	If Not Acceptable Describe Repairs Needed	Estimated Cost of Repairs
	Yes	No			
I. DAM / EMBANKMENT					
A. Vegetation					
1.) Trees					
2.) Bare Spots					
B. Settlement/Stabilization					
1.) Cracks					
2.) Depressions					
3.) Erosion					
C. Rodent/Wildlife Damage					
D. Evidence of seepage					
E. Bridges					
II. PRINCIPAL SPILLWAY					
A. Obstructions in Spillway					
B. Inlet and Outlet Structures					
1.) Signs of seepage					
2.) Separation of joints					
3.) Cracks, Breaks, or Deterioration of Concrete					
4.) Differential Settlement					
5.) Undermining					

FORM REVISED FEBRUARY 2009. OTHER VERSIONS OF THIS FORM ARE OBSOLETE AND WILL NOT BE ACCEPTED.

OPERATIONS AND MAINTENANCE INSPECTION RECORD					**Page 2**
Name of Project:					
Inspection Item	Acceptable?		N/A	If Not Acceptable Describe Repairs Needed	Estimated Cost of Repairs
	Yes	No			
II. PRINCIPAL SPILLWAY (cont'd)					
C. Settlement Buildup					
D. Scour at Inlet					
E. Riser and Trash Rack					
1.) Vertical Position					
2.) Securely Attached					
3.) Stone Cone Functional					
4.) Low Flow Perforations Functional					
5.) No Accumulated Debris					
III. GATES OR VALVES					
A. Fully Functional					
B. No Rust Damage					
C. No Evidence of Leaking					
VI. RESERVOIR AREA					
A. Inlet Structures					
1.) No Erosion					
2.) No Settlement					
3.) No Undermining					
4.) No Silt Buildup in Forebays					
B. No Silt Buildup in Entire Basin					
C. Wet Volume per Design					
V. LOW FLOW CHANNELS					
A. No Sediment Buildup					
B. No Accumulated Debris					
C. No Undermining					
D. No Other Damage of Deterioration					
VI. WETLAND GRASSES					
A. If Required by Plan, Present Where So Required					

OPERATIONS AND MAINTENANCE INSPECTION RECORD **Page 3**

Name of Project:

Inspection Item	Acceptable? Yes	Acceptable? No	N/A	If Not Acceptable Describe Repairs Needed	Estimated Cost of Repairs
II. FENCES					
A. Posts in Place and Secure					
B. Fencing in Place and Secure					
C. No Accumulated Debris					
D. Access Gate Functions					
E. Vegetative Barriers in Place					

Note Any Other Discrepancies Observed and Necessary Repairs (attach separate page if necessary). Attach Pictures of Condition at Time of Inspection.

Estimate Repairs Completion Date:		**Total Estimated Cost of All Repairs:**	

The Professional Engineer's Information:

Inspection Conducted by: _____ P.E.

Firm: _____

Address: _____

_____

_____

Phone: _____

Signature of P.E.
Performing the Inspection: _____

Place signed, Professional Stamp Here

Facility Owner Information:

Owner's Representative: _____

Representative's Title: _____

Mailing Address: _____

_____

_____

Phone: _____

ACTUAL DATE All REPAIRS COMPLETED:

ACTUAL TOTAL COST OF ALL REPAIRS

Attach pictures of completed repairs

Representative's Signature: _____

Maintaining Your BMP

Stormwater Management ▪ Department of Public Works ▪ City of Colonial Heights

BMPs, or Best Management Practices, are facilities designed to reduce the impacts of pollutants and increased stormwater, caused by development, on local streams. They are an essential part of a region's efforts to restore aquatic habitats in, and protect the health of, its waters. However, BMPs will fail if not properly maintained. Once a BMP fails, it will no longer perform its intended functions and is often very expensive to replace. The following is information that will help you maintain your BMP and potentially avoid expensive long-term repairs.

Which type of BMP do you have?

BMPs exist in several types and various sizes. ***Dry ponds*** retain water for a specified period of time (usually 48 hours) after a storm. ***Infiltration trenches*** are gravel-filled excavations that temporarily store stormwater and allow it to slowly sink into the underlying soil. ***Wet ponds*** contain a permanent pool of water much like a lake. ***Grassed swales*** are earthen, hill-like conveyance systems designed to simply transfer runoff to areas that will allow stormwater to soak into the soil where particles are trapped by the groundcover. ***Sand filtration systems*** (sand filters) are used to treat runoff from highly impervious areas like paved parking lots and high density residential areas, usually constructed inside a concrete shell and placed underground. ***Bioretention facilities***, or rain gardens as they are often called, are basins designed to mimic the conditions found on a mature forest floor by being planted with specific types of vegetation, some of which are selected because of their ability to hold and convert pollutants to biomass.

Routine Maintenance...

While actual maintenance needs will vary according to the specific facility and site conditions, the following are a few routine steps you can take to ensure the proper function of your BMP.

Mowing

Most grass is hardiest if it is maintained as an upland meadow, cut no shorter than 6 to 8 inches. If a more manicured look is desired, special attention to the health of the turf is needed and professional landscapers should be consulted. Grass should never be cut below 4 inches. Grass on embankments should be cut at least twice during both growing seasons and once during the summer.

Sediment Build-Up

Because vegetation surrounding a BMP is designed to trap sediment, it is likely to become laden with sediment causing bare spots to emerge. Bare areas should be vigorously raked, backfilled if needed, and covered with top soil. Disturbed areas should be seeded with a tall fescue grass seed. Excess material should be taken off-site and can be used as a mulch or soil supplement. If the soil becomes compacted, it will require aeration by a landscape company.

Unwanted Vegetation

Certain types of vegetation are destructive to a BMP. Keeping the dam and bottom areas of your BMP free of deep-rooted vegetation (trees and bushes) is critical because roots can destabilize the structure. Consistent mowing and monitoring will control any unwanted vegetation.

No-Mowing Zones

For wet ponds, a 10 foot un-mowed vegetated buffer around the perimeter of the facility (exclusive of the dam embankment) may be established to filter pollutants from adjacent properties and to help prevent shoreline erosion.

Structural Stabilization

Animal burrows, in addition to the deep-rooted trees and bushes mentioned above, will also deteriorate the structural integrity of an embankment. Muskrats in particular, will burrow tunnels up to 6 inches in

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201 James Avenue
Colonial Heights, VA 23834-9001

www.colonial-heights.com/StormWaterManagement

diameter into pond and dam walls. Efforts should be made to control excessive animal burrowing, and existing burrows should be filled as soon as they are discovered.

Mechanical Components

Some BMPs have mechanical components that need periodic attention (valves, sluice gates, pumps, fence gates, locks, etc) and should be functional at all times. This type of routine maintenance is best left to a BMP professional.

Insect Control

Mosquitoes are not a common problem in regularly maintained BMPs since they are designed to let the water escape. Regular maintenance then, is the best way to prevent mosquito issues. The best control technique for ensuring that stagnant pools of water do not develop is debris control. For BMPs that have a permanent pool of water, this means the prompt removal of floatable debris wherein stagnant pools could collect.

Debris & Litter Control

Regular removal of debris and litter can help reduce the chance of clogging in outlet structures, prevent damage to vegetated areas, reduce mosquito breeding habitats, maintain facility appearance and reduce conditions for excessive algae growth. Special attention should be given to the removal of floating debris which can clog inlet and outlet devices.

When to call a professional...

Self-inspection of your BMP should be able to identify unexpected or irregular ponding, improper health of vegetation or growth of unwanted vegetation, obstructions of the inlet or outlet, excessive erosion or sedimentation, signs of dumping or pollutants other than sediment, cracking or settling of the BMP's structural components, wetness on the downstream side of the dam (indicating seepage), low spots or sinkholes in bottom areas, deterioration of pipes, condition of the emergency spillway, condition of fences, shore erosion, stability of the side-slopes and downstream channel conditions, as well as signs of vandalism. Inspection of underground systems like sand filtration systems or infiltration trenches are obviously more difficult. A non-professional should never enter confined spaces meant for maintenance personnel. However, circumstances like water remaining in the system longer than designed draw down time, obvious signs of excessive sediment build up or debris around the facility and signs of disturbance of manholes or damage to the structure caused by vehicles or settling are indications that your BMP could benefit from a professional's services. Though Colonial Heights requires biannual inspections of your BMP, in many instances, an annual inspection will benefit your facility by decreasing the potential for development of serious maintenance concerns.

Remember...

Routine and scheduled maintenance will help keep your BMP operating to its design, help ensure that our City and its waters are a healthier place to live, and could help save you some costly maintenance or repair bills.

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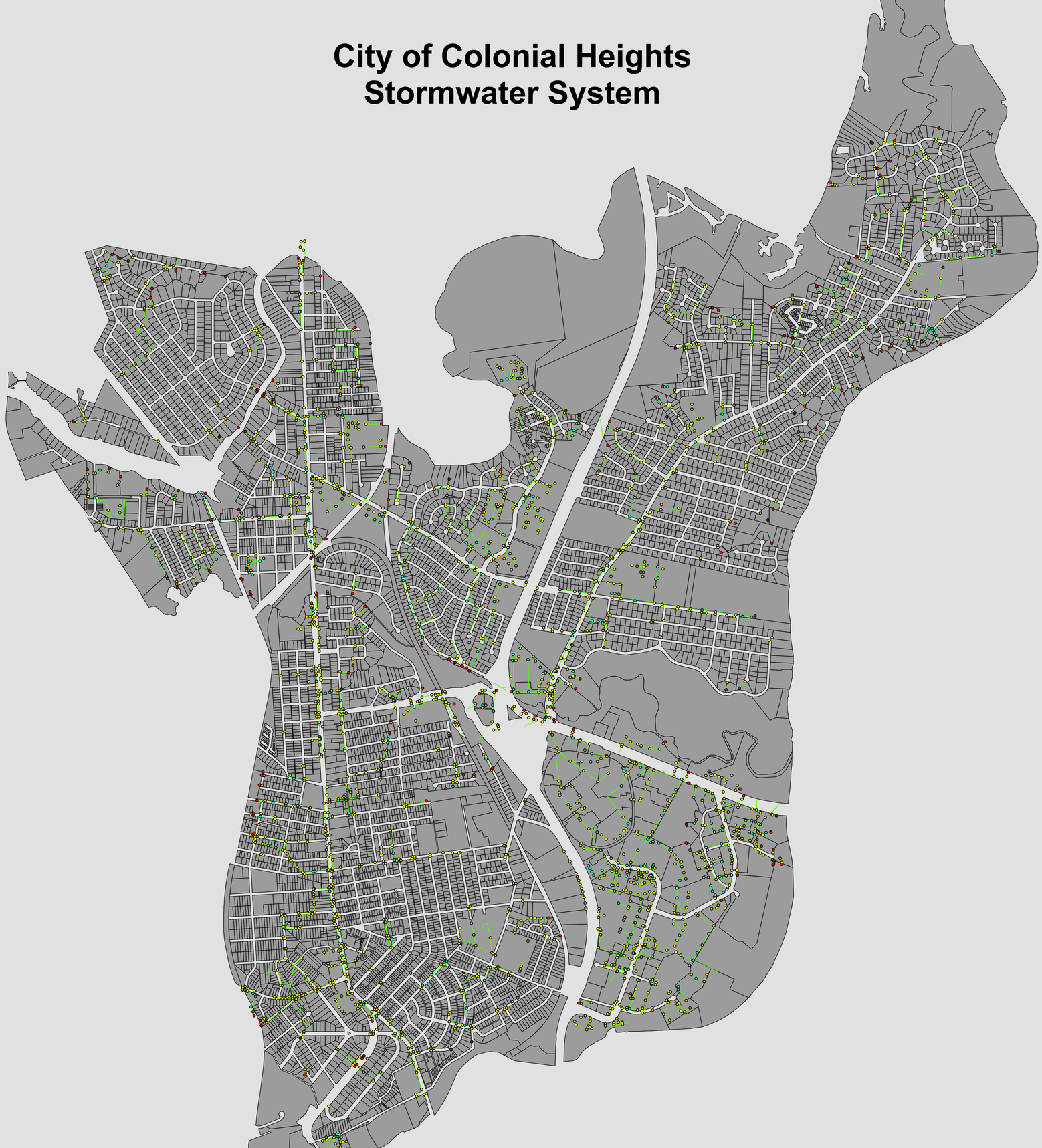
City of Colonial Heights
Stormwater System



Legend

- Storm_Inlet
- Storm_MH
- COH_Stormwater_Oufall_Master
- Stormwater_System

Storm Water Pollution Prevention Training

For Municipal Facilities

In the City of Colonial Heights

BMP PT01

What is Storm Water?

- Storm water is water flowing over the land during and immediately after a rain storm.

- Storm water does not flow into a wastewater treatment system, it flows into our surface waters. The Appomattox River, Swift Creek and Old Town Creek receive approximately 159,000 gallons of storm water runoff each year.

- What we do on the land affects the water quality and the habitat of our creeks and rivers. It also affects our quality of life, our fisheries, our recreation and our drinking water.

Why we're required to improve our storm water discharges:

- In 1972, Congress passed the Clean Water Act (CWA), focusing on point source pollution discharges to surface waters.
- In 1990, the EPA began National Pollutant Discharge Elimination System (NPDES) permitting to address both point and non-point sources of pollution.
- Municipalities are required to have an NPDES Permit for their storm water discharges. The permit stipulates that any municipal facilities have a Storm Water Pollution Prevention Plan (SWPPP), observe their discharges (some also have to sample) and work to implement Best Management Practices (BMPs) to minimize the pollutants leaving their facilities.

City of Colonial Heights' Storm Water Program

- Per the City's NPDES Permit, and as a result of a Consent Special Order (CSO) issued to the City of Colonial Heights, the City is responsible for enforcing storm water pollution prevention requirements.
- The City is committed to an active role in the reduction of pollution and the protection of human health and the environment.
- City facilities with industrial or O&M activities are required to comply with the NPDES industrial permit regulations.

How do we achieve compliance with the NPDES permit?

- Facilities must have a SWPPP that 1) addresses all potential pollutant sources, and 2) has measures and controls needed to prevent pollution.
- Administrators must conduct an annual facility inspection and document the inspections in an annual comprehensive site evaluation report, updating the SWPPP with new BMPs.
- The facility must visually, and in some cases chemically, analyze its storm water runoff for signs of pollution.
- BMPs must be implemented in order to prevent pollution from your facility and employees must be trained.

What is the goal of training employees about storm water?

To stress the importance of being AWARE of and ALERT to conditions that could result in the discharge of pollutants to storm water sources.

To make employees aware of the BMPs utilized at City facilities and help them understand what is expected of them.

TRAINING TOPICS
Why Storm Water?
BMPs
Vehicle Washing
Chemical Storage Activities
Sand/Soil Stockpiling
Vehicle Fueling & Parking
Waste Containers & Drum Management
Outdoor Storage
Preventive Maintenance
Spill Prevention & Response

Why storm water?

Storm water is -

…the #1 source of nonpoint source pollution.

…an untreated source of pollution, unlike many forms of air and municipal water discharges.

…a three-fold concern for our water sources, carrying chemical, solid wastes and ‘natural’ (sediments & brush) pollutants into our water sources.

…responsible for as much as 75% of the average water body’s pollution.

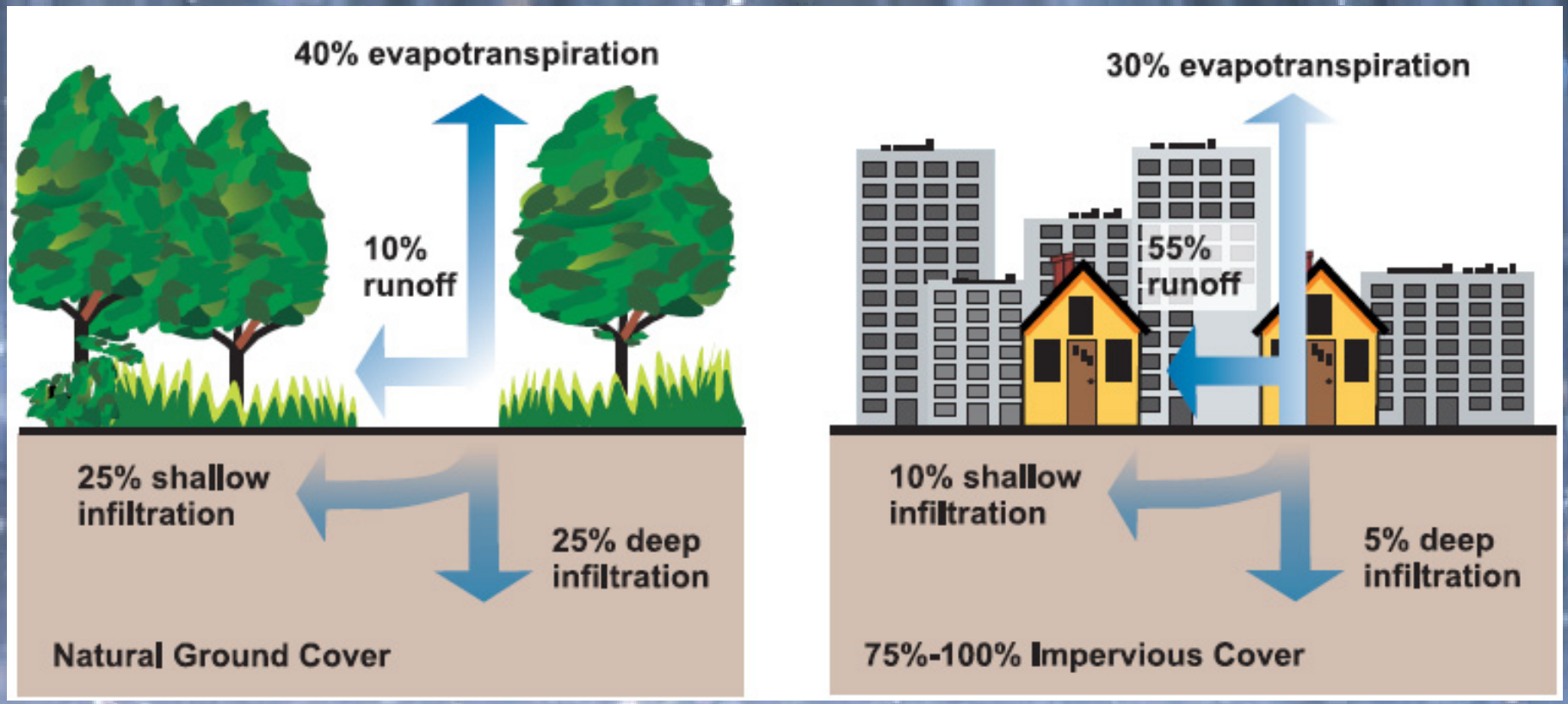
Storm water causes -

…vital plant species to be choked of essential oxygen and light.

…excessive growth of algal species that starve plants and micro-organisms of their food and light.

…human drinking water sources to be contaminated with e.coli, fecal coliform, PCBs and other potentially fatal bacteria.

…significant alterations of fish and amphibian reproductive capability and behavior.



When land is converted from its natural cover to such impervious covers as stone and asphalt, storm water runoff increases exponentially…

Don’t forget about the dangers of runoff *VOLUME*…

Best Management Practices (BMPs)

"A BMP is a technique, process, activity, or structure used to reduce the pollutant content of a storm water discharge. BMPs include simple nonstructural methods, such as good housekeeping and preventive maintenance. BMPs may also include structural modifications, such as the installation of bioretention measures."

Environmental Protection Agency

BMPs can be…

1. ***Behavioral changes***
2. ***Procedural changes***

and

3. ***Structural controls***

…that are implemented or practiced with the goal of reducing the pollutants in storm water runoff.

BMP: Vehicle Washing

Washing equipment & vehicles is often a vital part of municipal operations. Washing operations that take place outside & without appropriate controls, however, contribute oils & salts from the equipment, detergents & phosphorous from the washes, & sands, sediments & grass clippings to our water sources via catch basins & other water conveyances.

Washing DO's & DON'Ts :

✗ Washing vehicles & equipment outside, on paved or graveled areas

✓ Vehicles should be washed inside of facilities fitted with floor drains that drain to appropriate treatment systems. If such facilities do not exist, vehicles & equipment should be washed on flat, grassy areas away from other water courses.

✗ Rinsing debris & unused materials from vehicles or equipment prior to washing

✓ Any unused materials should be scraped, shoveled or broomed from vehicles & equipment and properly collected for disposal. Rinsing unused sediments and materials onto the ground only means that those materials will end up in our water sources.

BMP: Chemical Storage

Improper chemical storage contributes ethylene glycol, diesel fuels, oils, antifreeze and heavy metals, arsenic and alkaline wastes to our water sources.

Inadequate storage containers directly adjacent to concrete valley gutter.

BMP: Chemical Storage

Containers should be sound, sealed, non-corrosive & leak-proof, & should be stored above ground level in a covered area.

Improper chemical storage contributes ethylene glycol, diesel fuels, oils, antifreeze & heavy metals, arsenic & alkaline wastes to our water sources. All portable containers should be tightly sealed & clearly labeled. Tanks & other more permanent storage containers must be kept in good working order, free of leaks or other deficiencies. Berm areas around permanent storage facilities to avoid contamination & recycle all appropriate materials as soon as possible.

BMP: Sand/Soil Stockpiling

Sands, soils & aggregates are used for a wide variety of municipal activities and are thus an integral part of any municipality's day-to-day operations. This makes stockpiles of these materials an essential part of any municipal operations yard.

Runoff from these stockpiles, however, is often a significant source of pollution. Salt & sand application mixtures, in particular, can contribute large amounts of leachate to nearby water bodies.

BMP: Sand/Soil Stockpiling

These materials should be stockpiled in an enclosed, roofed facility that prevents runoff from the access bays. Where this is not possible, stockpiles should remain tarped at all times. The perimeters of all stockpiles should be bermed to prevent sediment & chemical runoff. Consider checkdams in the drainage courses of these stockpiles.

BMP: Sand/Soil Stockpiling

Checkdams in the drainage courses of stockpiles are a good way to redirect undirected runoff and capture many of the sediments the runoff will contain.

BMP: Vehicle Fueling & Parking

Since multiple departments traditionally use a single municipal fueling station, these in particular can be a significant source of storm water runoff pollution. Fuels and oils spill onto the surrounding impervious surfaces to be tracked throughout by the tires of multiple vehicles per day, and what remains is carried into nearby water courses.

Parking areas contribute large amounts of pollutants to our waters annually.

BMP: Vehicle Fueling & Parking

As well, numerous vehicles are frequently parked at municipal facilities. The cumulative contribution of these parked vehicles can have a damaging impact on water resources.

BMP: Vehicle Fueling & Parking

IMPROPER

- fueling areas without curbs or barriers
- fueling areas without spill rags or absorbents readily available
- no or irregular cleaning & maintenance of fueling areas
- vehicle\machinery parking on paved surfaces
- leaky vehicles or machinery parked without drip pans
- vehicles or machinery parked near runoff or water courses

PROPER

- daily cleanup of fueling areas
- covered fueling areas
- spill cleanup using granular absorbents, swept up and <u>not</u> hosed down
- spill rags available at every fueling station
- vehicle & machinery parked with drip pans
- parking on pervious areas like grass away from any drainage or water courses

BMP: Waste Containers & Drum Management

Barrels & drums are commonly used for containment & storage in municipal activities. If not done properly, these containers often become sources of stormwater pollution. Make sure:

- All containers are appropriate for their use (no caustic chemicals in plastic drums)

- All containers are properly lidded & sealed

- Containers are stored well above ground level in a covered area

- Containers are regularly inspected for leakage or spillage

BMP: Waste Containers & Drum Management

Any hazardous waste products must be stored in covered drums & staged in an assigned area with secondary containment to prevent containment.

BMP: Outdoor Storage

Storing equipment in enclosed facilities fitted with proper drainage & catchment systems is ideal, but this is not always feasible or affordable.

Even where it is not, taking measures to avoid and\or prevent pollutant exposure such as that seen here is necessary.

BMP: Outdoor Storage

Consider the following BMPs for outdoor storage…

- ✓ Confine storage of raw materials, parts, and equipment to designated areas away from high traffic, outside drainage pathways and away from surface waters.
- ✓ Provide secondary containment around chemical storage areas.
- ✓ Provide diversion berms, dikes or grassed swales around the perimeter of the area to limit run-on and runoff.
- ✓ Direct storm water runoff to an on-site retention pond.
- ✓ Use drip pans\drums under parts & equipment during storage.

BMP: Preventative Maintenance

Preventative maintenance can be applied as a BMP across many areas of municipal operations. Implementing a system of regular & preventative vehicle & equipment maintenance will keep many avoidable pollutants out of the City's watercourses. Determine which vehicles & equipment require maintenance & construct a program that encompasses routine preventative maintenance of these.

BMP: Preventative Maintenance

Make sure your Preventative Maintenance program encapsulates the following:

- ✓ An exhaustive list of all equipment & vehicles that require maintenance
- ✓ Schedules of how often each item requires maintenance
- ✓ The type of maintenance each item requires
- ✓ Designates an individual or individuals responsible for performing the necessary maintenance
- ✓ Designates an individual who will be responsible for administration of the Preventative Maintenance program
- ✓ Provides a documentation log for the program

BMP: Spill Prevention & Response

Spill prevention and response is an integral BMP for municipal facilities. Anything that is not swept up and cleaned entirely will end up at the outfall! Some key practices for this BMP are:

- Identifying areas where significant materials can spill into or enter your storm water discharge systems

- Ensuring that employees are aware of emergency response procedures, including material handling and storage

- Ensuring that appropriate spill clean-up equipment is accessible

BMP: Spill Prevention & Response

SPILL PREVENTION & RESPONSE PLAN

2. Spill Control Techniques Once a spill has occurred, the employee needs to decide whether the spill is small enough to handle without outside assistance. Only employees with training in spill response should attempt to contain or clean up a spill.
NOTE: If you are cleaning up a spill yourself, make sure you are aware of the hazards associated with the materials spilled, have adequate ventilation, and proper personal protective equipment. Treat all residual chemical and cleanup materials as hazardous waste.
Spill control equipment should be located wherever significant quantities of hazardous materials are received or stored. MSDSs, absorbents, over-pack containers, container patch kits, spill dams, shovels, floor dry, acid/base neutralizers, and "caution-keep out" signs are common spill response items.

3. Spill Response and Cleanup
Chemical spills are divided into three categories: Small, Medium and Large. Response and cleanup procedures vary depending on the size of the spill.
Small Spills: Any spill where the major dimension is less than 18 inches in diameter. Small spills are generally handled by internal personnel and usually do not require an emergency response by police or fire department HAZMAT teams.

- Quickly control the spill by stopping or securing the spill source. This could be as simple as uprighting a container and using floor-dry or absorbent pads to soak up spilled material. Wear gloves and protective clothing, if necessary.
- Put spill material and absorbents in secure containers if any are available.
- Consult with the Facility Responsible Person and the MSDS for spill and waste disposal procedures.
- In some instances, the area of the spill should not be washed with water. Use Dry Cleanup Methods and **never** wash spills down the drain, onto a storm drain or onto the driveway or parking lot.
- Both the spilled material and the absorbent may be considered hazardous waste and must be disposed of in compliance with state and federal environmental regulations.

Medium Spills: Spills where the major dimension exceeds 18 inches, but is less than 6 feet. Outside emergency response personnel (police and fire department HAZMAT teams) should usually be called for medium spills. Common sense, however, will dictate when it is necessary to call them.

- Immediately try to help contain the spill at its source by simple measures only. This means quickly uprighting a container, or putting a lid on a container, if possible. Do not use absorbents unless they are immediately available. Once you have made a quick attempt to contain the spill, or once you have quickly determined you cannot take any brief containment measures, leave the area and alert Emergency Responders at 911. Closing doors behind you while leaving helps contain fumes from spills. Give police accurate information as to the location, chemical, and estimated amount of the spill.
- Evaluate the area outside the spill. Engines and electrical equipment near the spill area must be turned off. This eliminates various sources of ignition in the area. Advise Emergency Responders on how to turn off engines or electrical sources. Do not go back into the spill area once you have left. Help emergency responders by trying to determine how to shut off heating, air conditioning equipment, or air circulating equipment, if necessary.
- If emergency responders evacuate the spill area, follow their instructions in leaving the area.
- After emergency responders have contained the spill, be prepared to assist them with any other information that may be necessary, such as MSDSs and questions about the facility. Emergency responders or trained personnel with proper personal protective equipment will then clean up the spill residue. Do not re-enter the area until the responder in charge gives the all clear. Be prepared to assist these persons from outside the spill area with MSDSs, absorbents, and containers.
- Reports must be filed with proper authorities. It is the responsibility of the spiller to inform both his/her supervisor and the emergency responders as to what caused the spill. The response for large spills is similar to the procedures for medium spills, except that the exposure danger is greater.

Make sure your facility has an updated Spill Prevention & Response Plan (SPRP). All employees should be familiar with the SPRP and any primary roles they may occupy in the Plan's administration.

"Good Housekeeping" *IS* a BMP

Remember that pollution prevention at municipal facilities is essentially a "good housekeeping" effort. Examining and subsequently altering your own actions to ensure a reduction in the amount and type of pollution that results from your activities and is discharged into local waterways is good housekeeping, in a nutshell. Be proactive: look for problems and address them before they get worse.

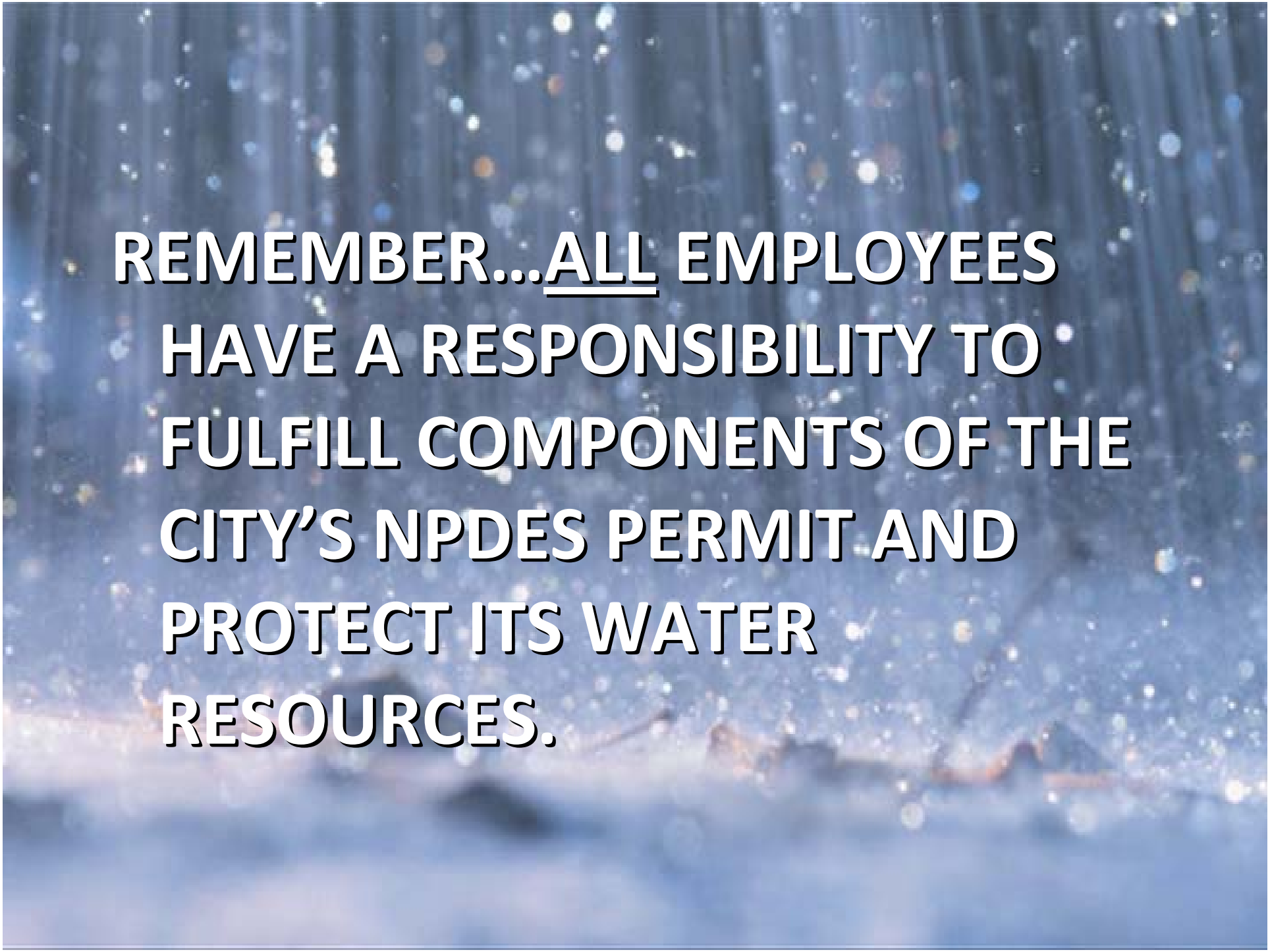
Storage near an outfall

Untreated spill

"Good Housekeeping" things to remember…

- Make sure that there are no discharges from building bay doors or other pathways
- Disconnect downspouts, particularly those to paved areas or near water courses
- Make sure that spill response equipment is readily available throughout buildings & that all employees are familiar with it
- Sweep floors & spills instead of washing
- Designate individuals to periodically inspect 'hotspots' for pollution

Downspouts contribute pollutants and to runoff velocity of stormwater


REMEMBER…ALL EMPLOYEES HAVE A RESPONSIBILITY TO FULFILL COMPONENTS OF THE CITY'S NPDES PERMIT AND PROTECT ITS WATER RESOURCES.

BMP PT02

EROSION & SEDIMENT CONTROLS IN ROAD, UTILITY AND BRIDGE MAINTENANCE

STD & SPEC 3.07

STORM DRAIN INLET PROTECTION

IP

Definition

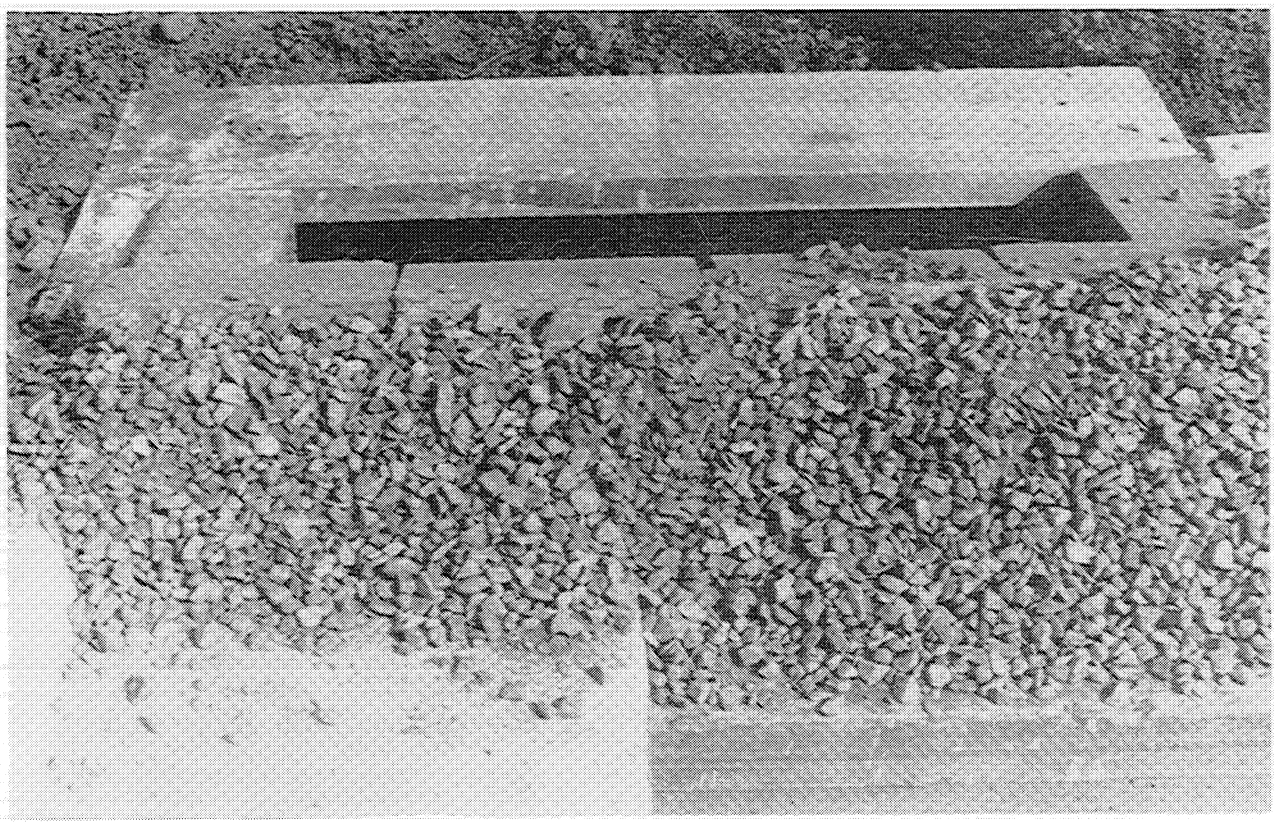
A sediment filter or an excavated impounding area around a storm drain drop inlet or curb inlet.

Purpose

To prevent sediment from entering storm drainage systems prior to permanent stabilization of the disturbed area.

Conditions Where Practice Applies

Where storm drain inlets are to be made operational before permanent stabilization of the corresponding disturbed drainage area. Different types of structures are applicable to different conditions (see Plates 3.07-1 through 3.07-8).



Planning Considerations

Storm sewers which are made operational prior to stabilization of the associated drainage areas can convey large amounts of sediment to natural drainageways. In case of extreme sediment loading, the storm sewer itself may clog and lose a major portion of its capacity. To avoid these problems, it is necessary to prevent sediment from entering the system at the inlets.

This practice contains several types of inlet filters and traps which have different applications dependent upon site conditions and type of inlet. Other innovative techniques for accomplishing the same purpose are encouraged, but only after specific plans and details are submitted to and approved by the appropriate Plan-Approving Authority.

Care should be taken when choosing a specific type of inlet protection. Field experience has shown that inlet protection which causes excessive ponding in an area of high construction activity may become so inconvenient that it is removed or bypassed, thus transmitting sediment-laden flows unchecked. In such situations, a structure with an adequate overflow mechanism should be utilized.

The following inlet protection devices are for drainage areas of one acre or less. Runoff from larger disturbed areas should be routed to a TEMPORARY SEDIMENT TRAP (Std. & Spec. 3.13) or a TEMPORARY SEDIMENT BASIN (Std. & Spec. 3.14).

The best way to prevent sediment from entering the storm sewer system is to stabilize the site as quickly as possible, preventing erosion and stopping sediment at its source.

Stone is utilized as the chief ponding/filtering agent in most of the inlet protection types described in this specification. The various types of "coarse aggregates" which are depicted are able to filter out sediment mainly through slowing down flows directed to the inlet by creating an increased flow path for the stormwater (through void space in the respective stone). The stone filtering medium by no means slows stormwater flowrate as does filter cloth and therefore cannot provide the same degree of filter efficiency when smaller silt and clay particles are introduced into stormwater flows. However, as mentioned earlier, excessive ponding in busy areas adjacent to stormwater inlets is in many cases unacceptable - that is why stone must be utilized with many installations.

Fortunately, in most instances, inlet protection utilizing stone should not be the sole control measure. At the time that storm sewer inlet and associated appurtances become operational, areas adjacent to the structures are most likely at final grade or will not be altered for extended periods; this is the time when TEMPORARY SEEDING (Std. & Spec. 3.31) and other appropriate controls should be implemented to enhance sediment-loss mitigation. In addition, by varying stone sizes used in the construction of inlet protection, a greater degree of sediment removal can be obtained. As an option, filter cloth can be used with the stone in these devices to further enhance sediment removal. Notably, the potential inconvenience of excessive ponding must be examined with these choices, especially the latter.

Design Criteria

1. The drainage area shall be no greater than 1 acre.

2. The inlet protection device shall be constructed in a manner that will facilitate clean-out and disposal of trapped sediment and minimize interference with construction activities.

3. The inlet protection devices shall be constructed in such a manner that any resultant ponding of stormwater will not cause excessive inconvenience or damage to adjacent areas or structures.

4. Design criteria more specific to each particular inlet protection device will be found on Plates 3.07-1 through 3.07-8.

5. For the inlet protection devices which utilize stone as the chief ponding/filtering medium, a range of stone sizes is offered; VDOT #3, #357, or #5 Coarse Aggregate should be used. The designer/plan reviewer should attempt to get the greatest amount of filtering action possible (by using smaller-sized stone), while not creating significant ponding problems.

6. In all designs which utilize stone with a wire-mesh support as a filtering mechanism, the stone can be completely wrapped with the wire mesh to improve stability and provide easier cleaning.

7. Filter Fabric may be added to any of the devices which utilize "coarse aggregate" stone to significantly enhance sediment removal. The fabric, which must meet the physical requirements noted for "extra strength" found in Table 3.05-B, should be secured between the stone and the inlet (on wire-mesh if it is present). As a result of the significant increase in filter efficiency provided by the fabric, a larger range of stone sizes (VDOT #1, #2 or #3 Coarse Aggregate) may be utilized with such a configuration. The larger stone will help keep larger sediment masses from clogging the cloth. Notably, significant ponding may occur at the inlet if filter cloth is utilized in this manner.

Construction Specifications

1. Silt Fence Drop Inlet Protection

   a. Silt Fence shall conform to the construction specifications for "extra strength" found in Table 3.05-B and shall be cut from a continuous roll to avoid joints.

   b. For stakes, use 2 x 4-inch wood (preferred) or equivalent metal with a minimum length of 3 feet.

c. Space stakes evenly around the perimeter of the inlet a maximum of 3-feet apart, and securely drive them into the ground, approximately 18-inches deep (see Plate 3.07-1).

d. To provide needed stability to the installation, frame with 2 x 4-inch wood strips around the crest of the overflow area at a maximum of 1½ feet above the drop inlet crest.

e. Place the bottom 12 inches of the fabric in a trench (see Plate 3.07-1) and backfill the trench with 12 inches of compacted soil.

f. Fasten fabric securely by staples or wire to the stakes and frame. Joints must be overlapped to the next stake.

g. It may be necessary to build a temporary dike on the downslope side of the structure to prevent bypass flow.

2. Gravel and Wire Mesh Drop Inlet Sediment Filter

a. Wire mesh shall be laid over the drop inlet so that the wire extends a minimum of 1 foot beyond each side of the inlet structure. Wire mesh with 1/2-inch openings shall be used. If more than one strip of mesh is necessary, the strips shall be overlapped.

b. Coarse aggregate shall be placed over the wire mesh as indicated on Plate 3.07-2. The depth of stone shall be at least 12 inches over the entire inlet opening. The stone shall extend beyond the inlet opening at least 18 inches on all sides.

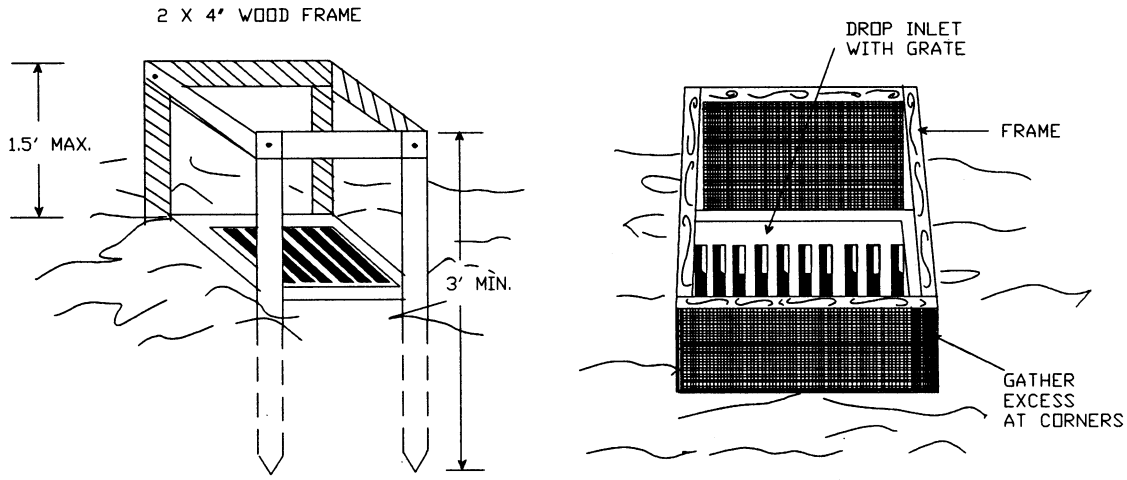
c. If the stone filter becomes clogged with sediment so that it no longer adequately performs its function, the stones must be pulled away from the inlet, cleaned and/or replaced.

Note: This filtering device has no overflow mechanism; therefore, ponding is likely especially if sediment is not removed regularly. This type of device must never be used where overflow may endanger an exposed fill slope. Consideration should also be given to the possible effects of ponding on traffic movement, nearby structures, working areas, adjacent property, etc.

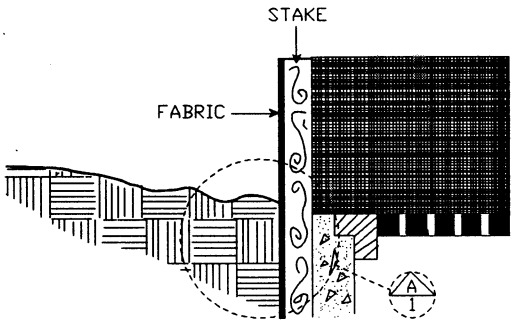
3. Block and Gravel Drop Inlet Sediment Filter

a. Place concrete blocks lengthwise on their sides in a single row around the perimeter of the inlet, with the ends of adjacent blocks abutting. The height of the barrier can be varied, depending on design needs, by stacking combinations of 4-inch, 8-inch and 12-inch wide blocks. The barrier of blocks shall be at least 12-inches high and no greater than 24-inches high.

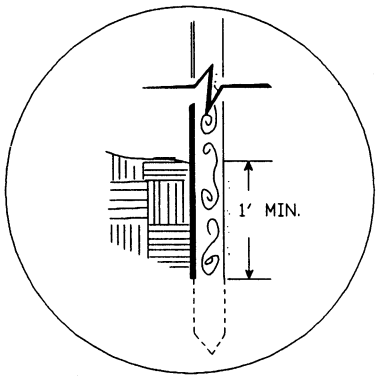
SILT FENCE DROP INLET PROTECTION



PERSPECTIVE VIEWS



ELEVATION OF STAKE AND FABRIC ORIENTATION



DETAIL A

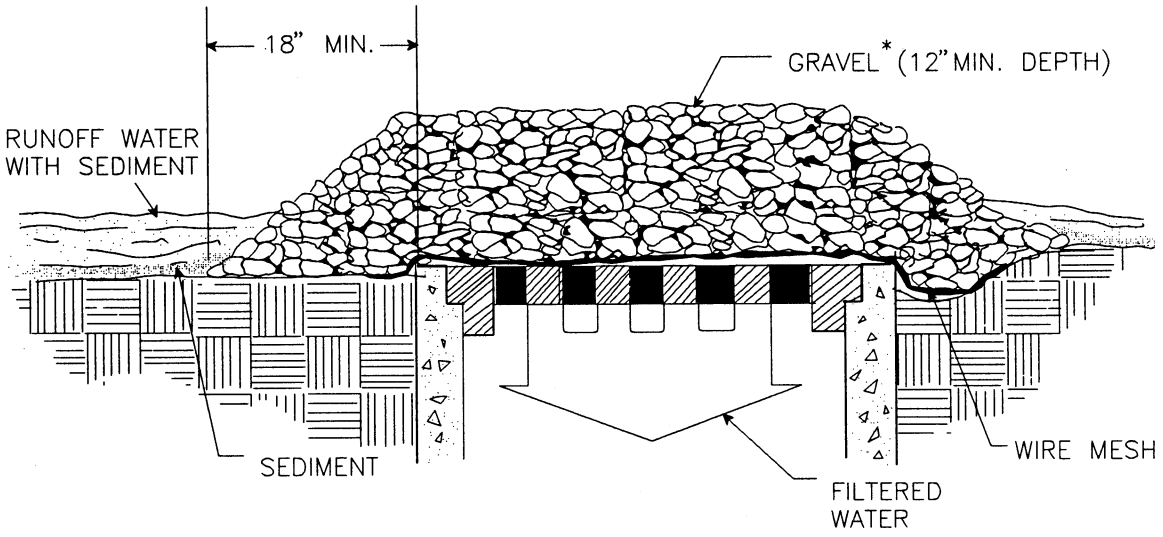
SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPE NO GREATER THAN 5%) WHERE THE INLET SHEET OR OVERLAND FLOWS (NOT EXCEEDING 1 C.F.S.) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS, SUCH AS IN STREET OR HIGHWAY MEDIANS.

Source: N.C. Erosion and Sediment Control Planning and Design Manual, 1988

Plate 3.07-1

GRAVEL AND WIRE MESH DROP INLET SEDIMENT FILTER



SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY CONCENTRATED FLOWS ARE EXPECTED, BUT NOT WHERE PONDING AROUND THE STRUCTURE MIGHT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

* GRAVEL SHALL BE VDOT #3, #357 OR #5 COARSE AGGREGATE.

Source: Va. DSWC

Plate 3.07-2

b. Wire mesh shall be placed over the outside vertical face (webbing) of the concrete blocks to prevent stone from being washed through the holes in the blocks. Wire mesh with 1/2-inch openings shall be used.

c. Stone shall be piled against the wire to the top of the block barrier, as shown in Plate 3.07-3.

d. If the stone filter becomes clogged with sediment so that it no longer adequately performs its function, the stone must be pulled away from the blocks, cleaned and replaced.

4. Excavated Drop Inlet Sediment Trap

a. The excavated trap shall be sized to provide a minimum storage capacity calculated at the rate of 134 cubic yards per acre of drainage area. A trap shall be no less than 1-foot nor more than 2-feet deep measured from the top of the inlet structure. Side slopes shall not be steeper than 2:1 (see Plate 3.07-4).

b. The slope of the basin may vary to fit the drainage area and terrain. Observations must be made to check trap efficiency and modifications shall be made as necessary to ensure satisfactory trapping of sediment. Where an inlet is located so as to receive concentrated flows, such as in a highway median, it is recommended that the basin have a rectangular shape in a 2:1 (length/width) ratio, with the length oriented in the direction of the flow.

c. Sediment shall be removed and the trap restored to its original dimensions when the sediment has accumulated to one-half the design depth of the trap. Removed sediment shall be deposited in a suitable area and in a manner such that it will not erode.

5. Sod Drop Inlet Sediment Filter

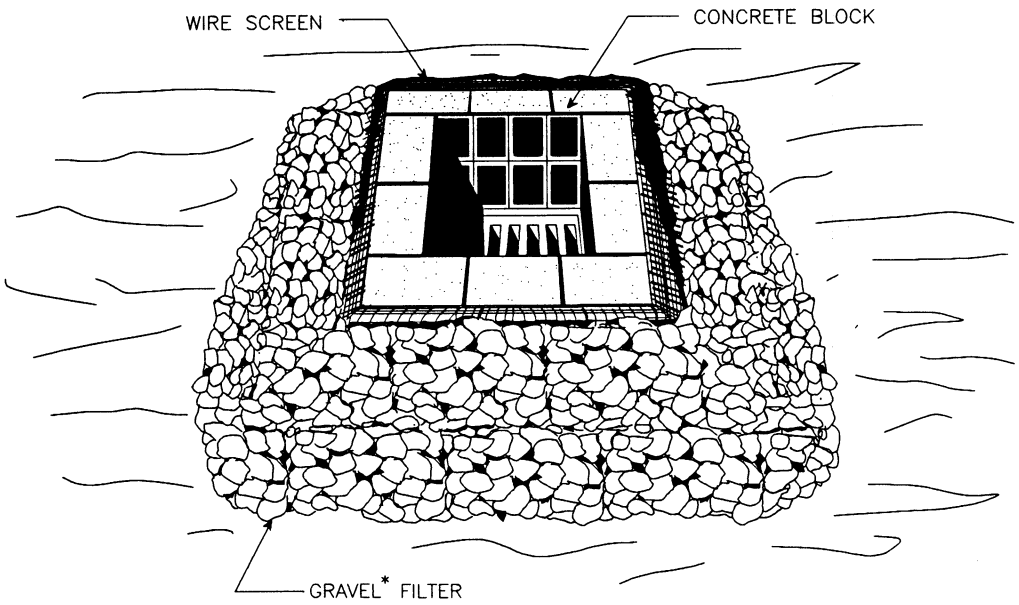
a. Soil shall be prepared and sod installed according to the specifications in Std. & Spec. 3.33, SODDING.

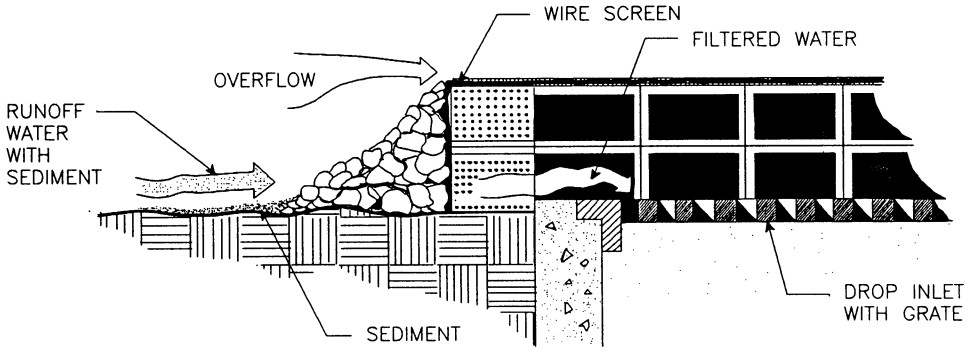
b. Sod shall be placed to form a turf mat covering the soil for a distance of 4 feet from each side of the inlet structure, as depicted in Plate 3.07-5.

6. Gravel Curb Inlet Sediment Filter

a. Wire mesh with 1/2-inch openings shall be placed over the curb inlet opening so that at least 12 inches of wire extends across the inlet cover and at least 12 inches of wire extends across the concrete gutter from the inlet opening, as depicted in Plate 3.07-6.

BLOCK AND GRAVEL DROP INLET SEDIMENT FILTER





SPECIFIC APPLICATION

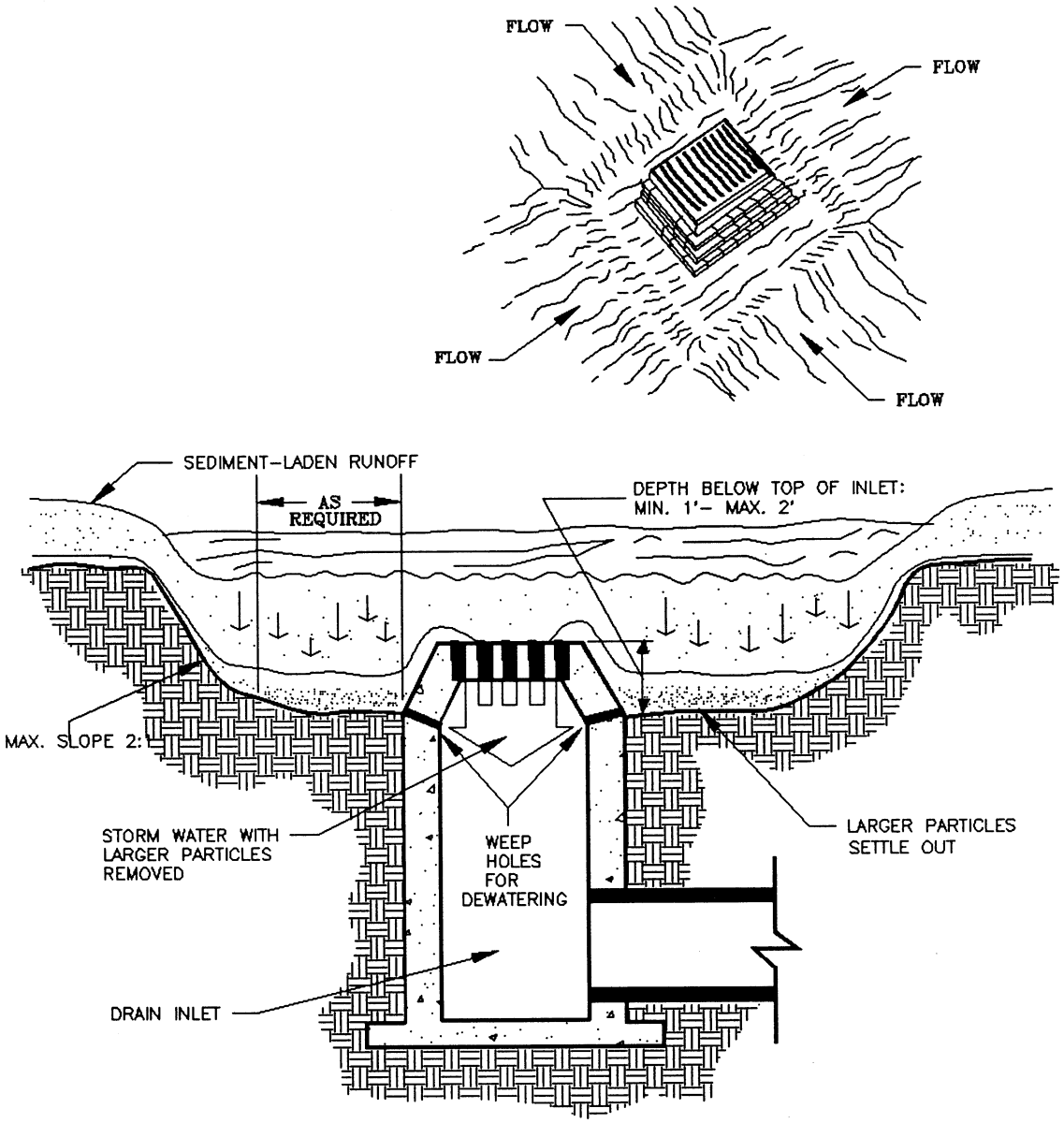
THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY FLOWS ARE EXPECTED AND WHERE AN OVERFLOW CAPACITY IS NECESSARY TO PREVENT EXCESSIVE PONDING AROUND THE STRUCTURE.

* GRAVEL SHALL BE VDOT #3, #357 OR #5 COARSE AGGREGATE.

Source: Va. DSWC

Plate 3.07-3

EXCAVATED DROP INLET SEDIMENT TRAP



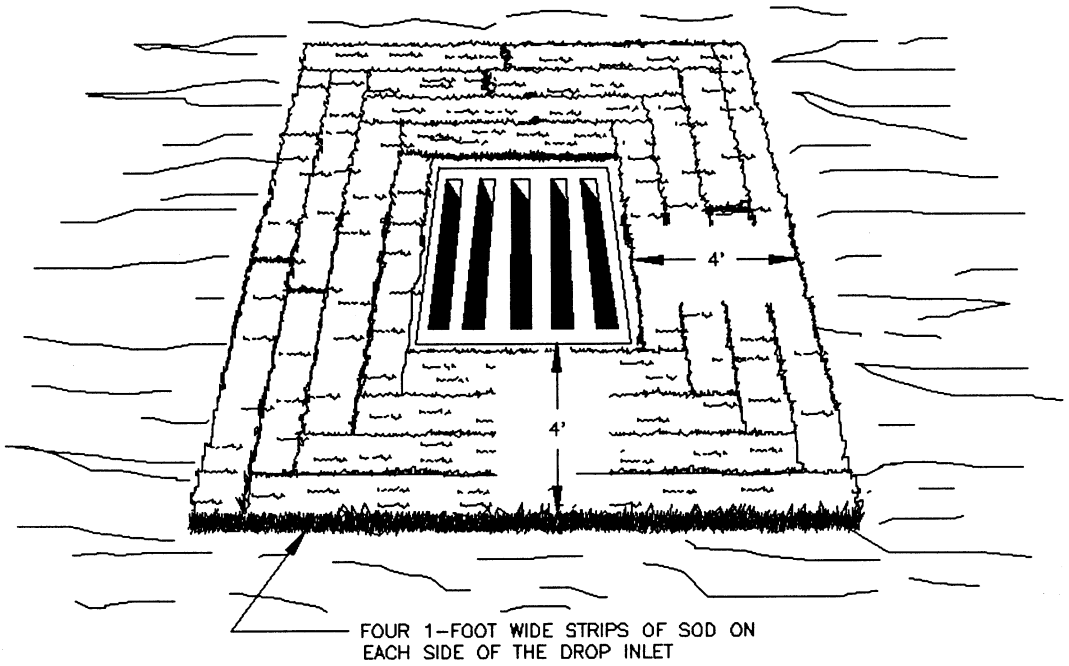
SPECIFIC APPLICATION

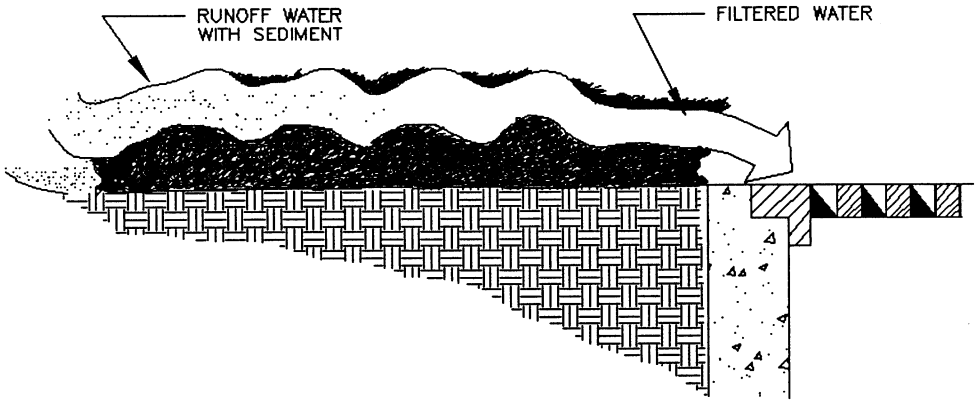
THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY FLOWS ARE EXPECTED AND WHERE AN OVERFLOW CAPABILITY AND EASE OF MAINTENANCE ARE DESIRABLE.

Source: Michigan Soil Erosion and Sediment Control Guidebook, 1975, and USDA-SCS

Plate 3.07-4

SOD DROP INLET SEDIMENT FILTER





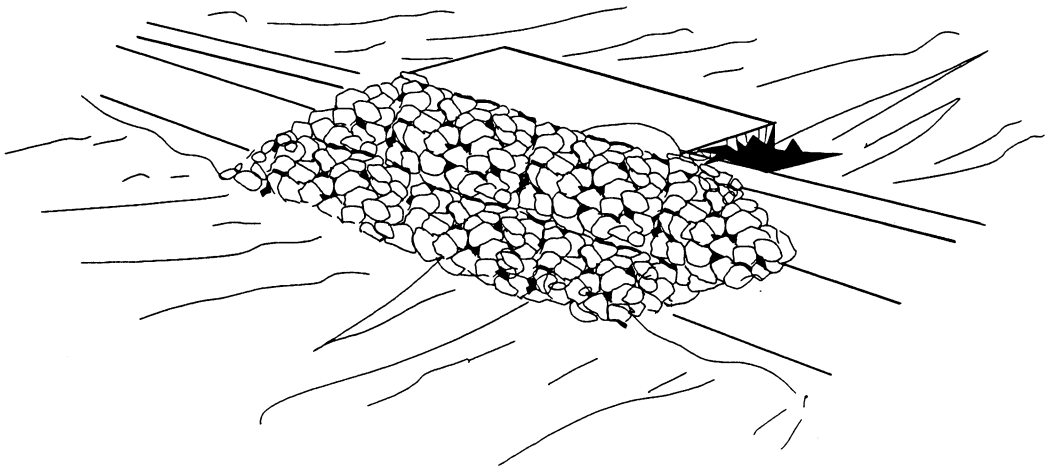
SPECIFIC APLLICATION

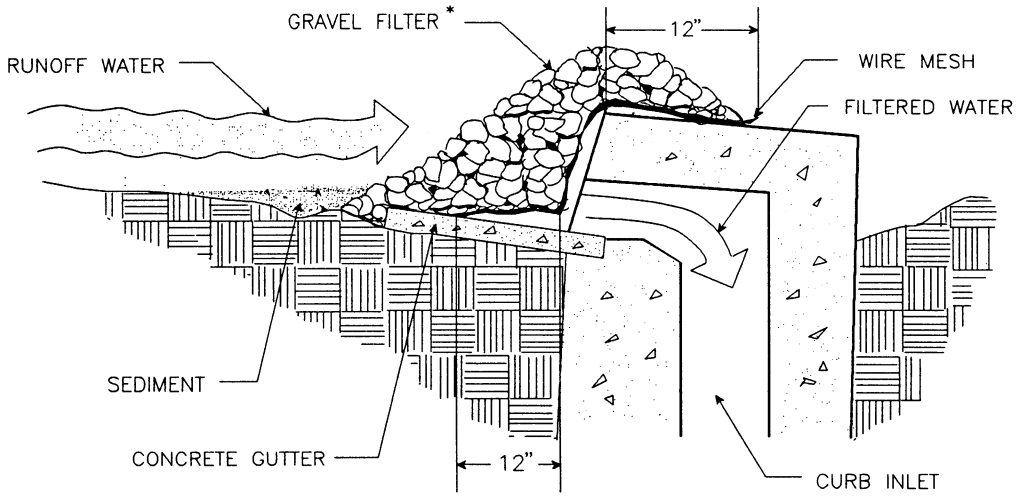
THIS METHOD OF INLET PROTECTION IS APPPLICABLE ONLY AT THE TIME OF PERMANENT SEEDING, TO PROTECT THE INLET FROM SEDIMENT AND MULCH MATERIAL UNTIL PERMANENT VEGETATION HAS BECOME ESTABLISHED.

Source: Va. DSWC

Plate 3.07-5

GRAVEL CURB INLET SEDIMENT FILTER





SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE PONDING IN FRONT OF THE STRUCTURE IS NOT LIKELY TO CAUSE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

* GRAVEL SHALL BE VDOT #3, #357 OR 5 COARSE AGGREGATE.

Source: Va. DSWC Plate 3.07-6

b. Stone shall be piled against the wire so as to anchor it against the gutter and inlet cover and to cover the inlet opening completely.

c. If the stone filter becomes clogged with sediment so that it no longer adequately performs its function, the stone must be pulled away from the block, cleaned and replaced.

7. Curb Inlet Protection with 2-inch x 4-inch Wooden Weir

a. Attach a continuous piece of wire mesh (30-inch minimum width x inlet throat length plus 4 feet) to the 2-inch x 4-inch wooden weir (with a total length of throat length plus 2 feet) as shown in Plate 3.07-7. Wood should be "construction grade" lumber.

b. Place a piece of approved "extra-strength" filter cloth of the same dimensions as the wire mesh over the wire mesh and securely attach to the 2-inch x 4-inch weir.

c. Securely nail the 2-inch x 4-inch weir to the 9-inch long vertical spacers which are to be located between the weir and inlet face at a maximum 6-foot spacing.

d. Place the assembly against the inlet throat and nail 2-foot (minimum) lengths of 2-inch x 4-inch board to the top of the weir at spacer locations. These 2-inch x 4-inch anchors shall extend across the inlet tops and be held in place by sandbags or alternate weight.

e. The assembly shall be placed so that the end spacers are a minimum 1 foot beyond both ends of the throat opening.

f. Form the wire mesh and filter cloth to the concrete gutter and against the face of curb on both sides of the inlet. Place coarse aggregate over the wire mesh and filter fabric in such a manner as to prevent water from entering the inlet under or around the filter cloth.

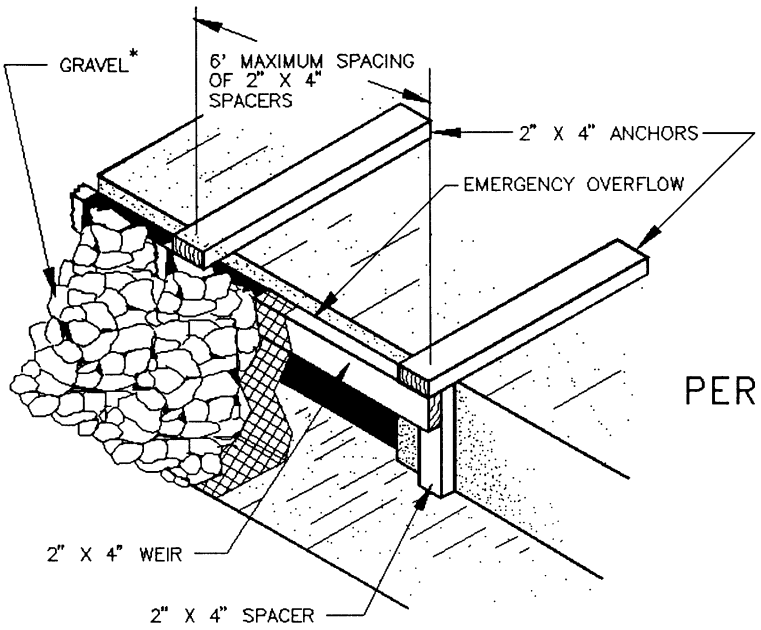
g. This type of protection must be inspected frequently and the filter cloth and stone replaced when clogged with sediment.

h. Assure that storm flow does not bypass inlet by installing temporary earth or asphalt dikes directing flow into inlet.

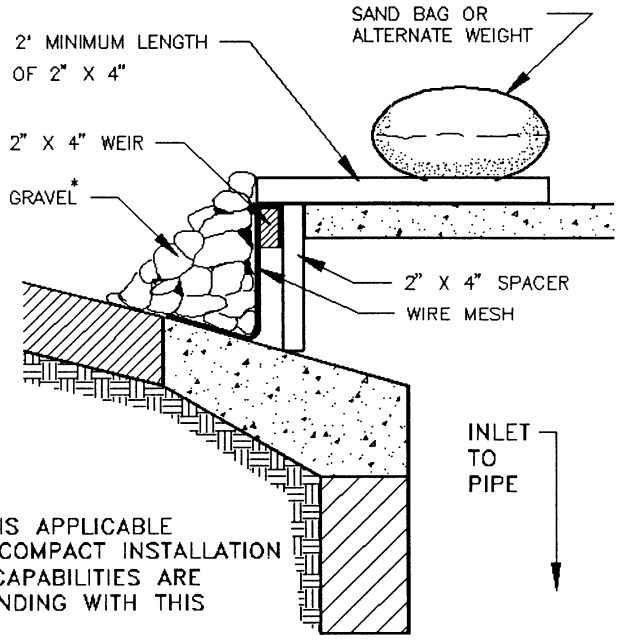
8. Block and Gravel Curb Inlet Sediment Filter

a. Two concrete blocks shall be placed on their sides abutting the curb at either side of the inlet opening.

CURB INLET PROTECTION WITH 2-INCH X 4-INCH WOODEN WEIR



PERSPECTIVE VIEW



SIDE ELEVATION

SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE TO CURB INLETS WHERE A STURDY, COMPACT INSTALLATION IS DESIRED. EMERGENCY OVERFLOW CAPABILITIES ARE MINIMAL, SO EXPECT SIGNIFICANT PONDING WITH THIS MEASURE.

*GRAVEL SHALL BE VDOT COARSE AGGREGATE #3, #357 OR #5

Source: 1983 Maryland Standards and Specifications for Soil Erosion and Sediment Control, and USDA-SCS

Plate 3.07-7

b. A 2-inch x 4-inch stud shall be cut and placed through the outer holes of each spacer block to help keep the front blocks in place.

c. Concrete blocks shall be placed on their sides across the front of the inlet and abutting the spacer blocks as depicted in Plate 3.07-8.

d. Wire mesh shall be placed over the outside vertical face (webbing) of the concrete blocks to prevent stone from being washed through the holes in the blocks. Wire mesh with 1/2-inch openings shall be used.

e. Coarse aggregate shall be piled against the wire to the top of the barrier as shown in Plate 3.07-8.

f. If the stone filter becomes clogged with sediment so that it no longer adequately performs its function, the stone must be pulled away from the blocks, cleaned and/or replaced.

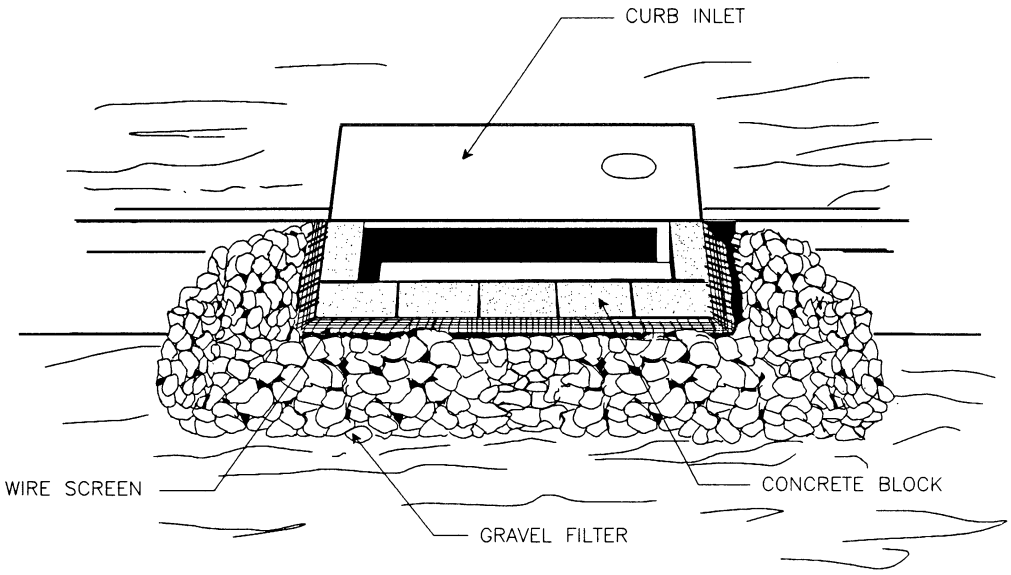
Maintenance

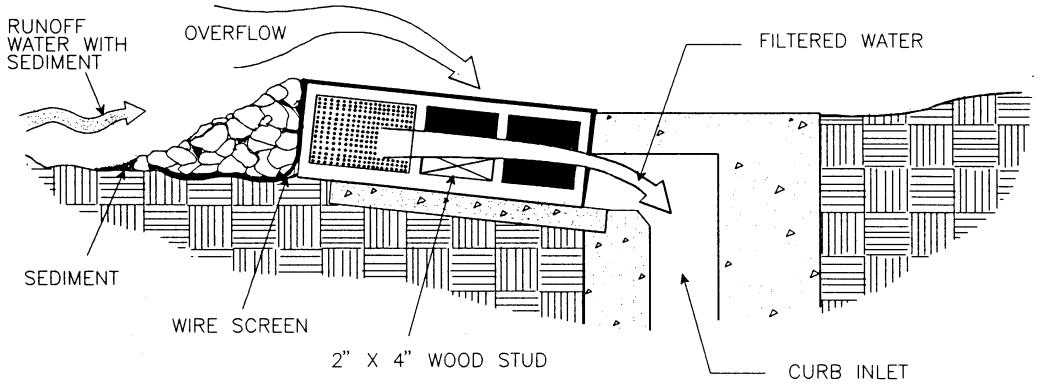
1. The structure shall be inspected after each rain and repairs made as needed.

2. Sediment shall be removed and the trap restored to its original dimensions when the sediment has accumulated to one half the design depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.

3. Structures shall be removed and the area stabilized when the remaining drainage area has been properly stabilized.

BLOCK & GRAVEL CURB INLET SEDIMENT FILTER





SPECIAL APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE AN OVERFLOW CAPABILITY IS NECESSARY TO PREVENT EXCESSIVE PONDING IN FRONT OF THE STRUCTURE.

* GRAVEL SHALL BE VDOT #3, #357 OR #5 COARSE AGGREGATE

Source: Va. DSWC

Plate 3.07-8

STD & SPEC 3.08

CULVERT INLET PROTECTION

CIP

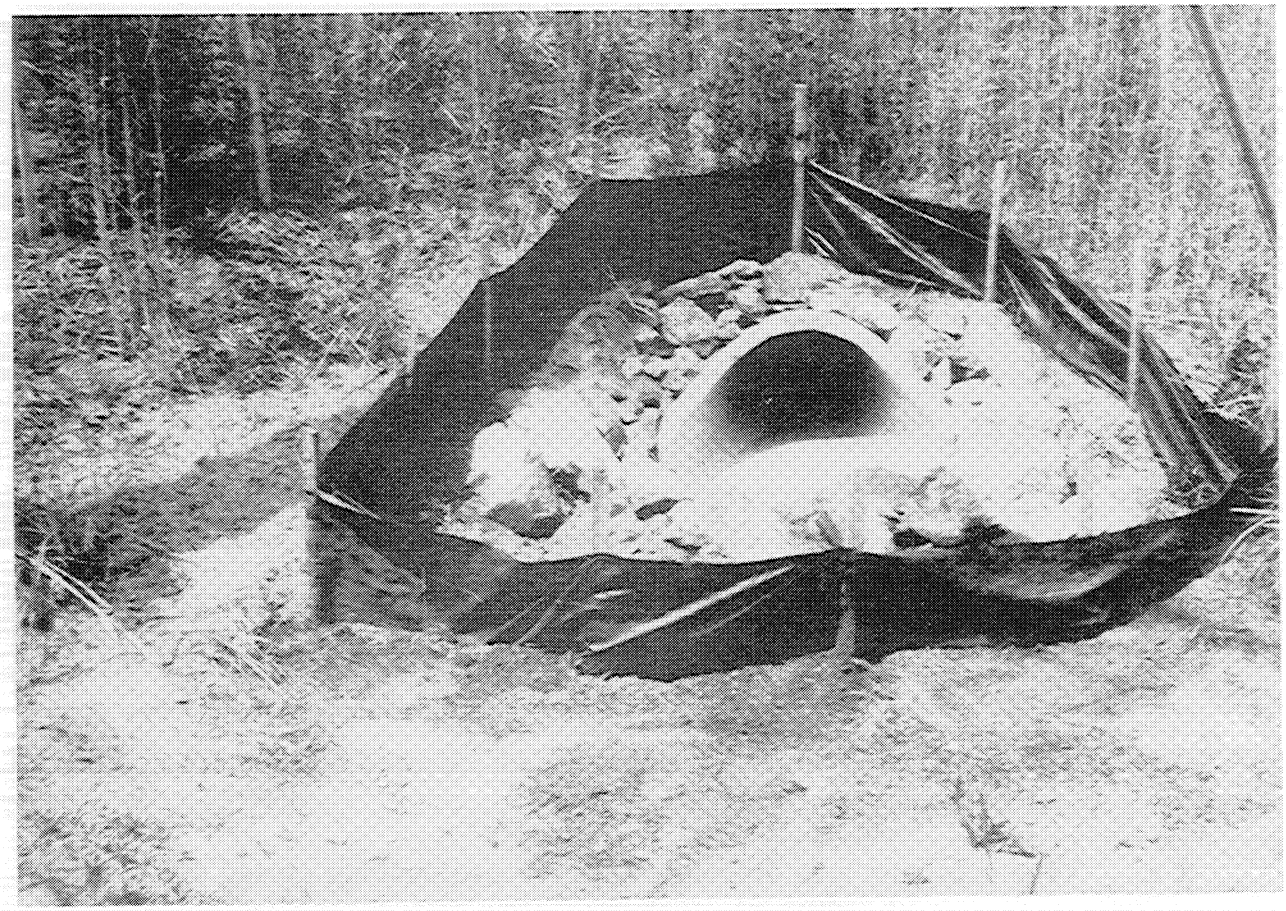
Definition

A sediment filter located at the inlet to storm sewer culverts.

Purposes

1. To prevent sediment from entering, accumulating in and being transferred by a culvert and associated drainage system prior to permanent stabilization of a disturbed project area.

2. To provide erosion control at culvert inlets during the phase of a project where elevation and drainage patterns change, causing original control measures to be ineffective or in need of removal.



Conditions Where Practice Applies

Where culvert and associated drainage system is to be made operational prior to permanent stabilization of the disturbed drainage area. Different types of structures are applicable to different conditions (see Plates 3.08-1 and 3.08-2).

Planning Considerations

When construction on a project reaches a stage where culverts and other storm sewer appurtenances are installed and many areas are brought to a desired grade, the erosion control measures used in the early stages normally need to be modified or may need to be removed altogether. At that time, there is a need to provide protection at the points where runoff will leave the area via culverts and drop or curb inlets.

Similar to drop and curb inlets, culverts which are made operational prior to stabilization of the associated drainage areas can convey large amounts of sediment to natural drainageways. In case of extreme sediment loading, the pipe or pipe system itself may clog and lose a major portion of its capacity. To avoid these problems, it is necessary to prevent sediment from entering the culvert by using one of the methods noted in this section.

General Guidelines (All Types)

1. The inlet protection device shall be constructed in a manner that will facilitate clean-out and disposal of trapped sediment and minimize interference with construction activities.

2. The inlet protection devices shall be constructed in such a manner that any resultant ponding of stormwater will not cause excessive inconvenience or damage to adjacent areas or structures.

3. Design criteria more specific to each particular inlet protection device will be found in Plates 3.08-1 through 3.08-2.

Design Criteria

1. Silt Fence Culvert Inlet Protection

   a. No formal design is required.

   b. Silt fence culvert inlet protection has an expected maximum usable life of three months.

   c. The maximum area draining to this practice shall not exceed one acre.

2. Culvert Inlet Sediment Trap

a. Runoff storage requirements shall be in accordance with information outlined under Std. & Spec. 3.13, TEMPORARY SEDIMENT TRAP.

b. Culvert inlet sediment traps have a maximum expected useful life of 18 months.

c. The maximum area draining to this practice shall not exceed 3 acres.

Construction Specifications

1. Silt Fence Culvert Inlet Protection

a. The height of the silt fence (in front of the culvert opening) shall be a minimum of 16 inches and shall not exceed 34 inches.

b. Extra strength filter fabric with a maximum spacing of stakes of 3 feet shall be used to construct the measure.

c. The placement of silt fence should be approximately 6 feet from the culvert in the direction of incoming flow, creating a "horseshoe" shape as shown in Plate 3.08-1.

d. If silt fence cannot be installed properly or the flow and/or velocity of flow to the culvert protection is excessive and may breach the structure, the stone combination noted in Plate 3.08-1 should be utilized.

2. Culvert Inlet Sediment Trap

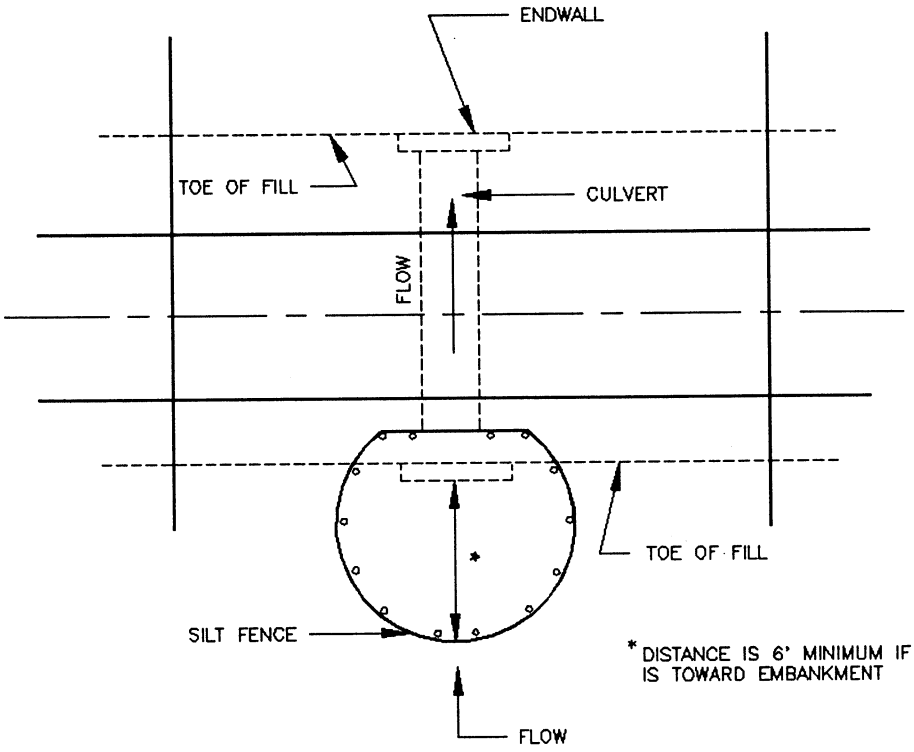
a. Geometry of the design will be a "horseshoe" shape around the culvert inlet (see Plate 3.08-2).

b. The toe of riprap (composing the sediment filter dam) shall be no closer than 24" from the culvert opening in order to provide an acceptable emergency outlet for flows from larger storm events.

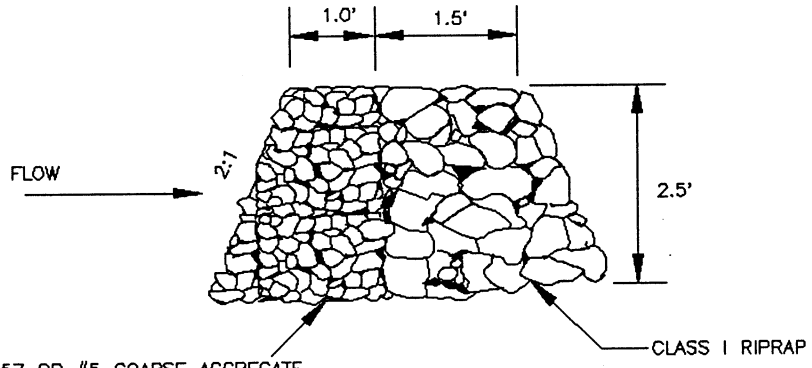
c. All other "Construction Specifications" found within Std. & Spec. 3.13, TEMPORARY SEDIMENT TRAP, also apply to this practice.

e. The proper installation of the culvert inlet sediment trap is a viable substitute for the installation of the TEMPORARY SEDIMENT TRAP.

SILT FENCE CULVERT INLET PROTECTION



OPTIONAL STONE COMBINATION**

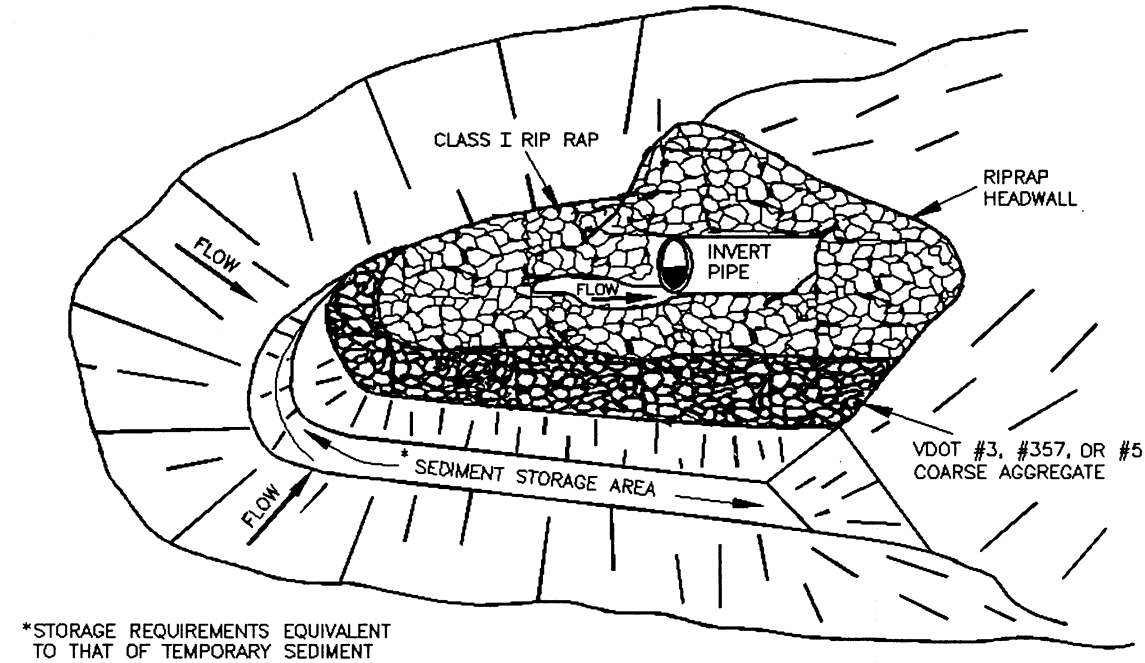


** VDOT #3, #357 OR #5 COARSE AGGREGATE TO REPLACE SILT FENCE IN " HORSESHOE " WHEN HIGH VELOCITY OF FLOW IS EXPECTED

Source: Adapted from VDOT Standard Sheets and Va. DSWC

Plate 3.08-1

CULVERT INLET SEDIMENT TRAP

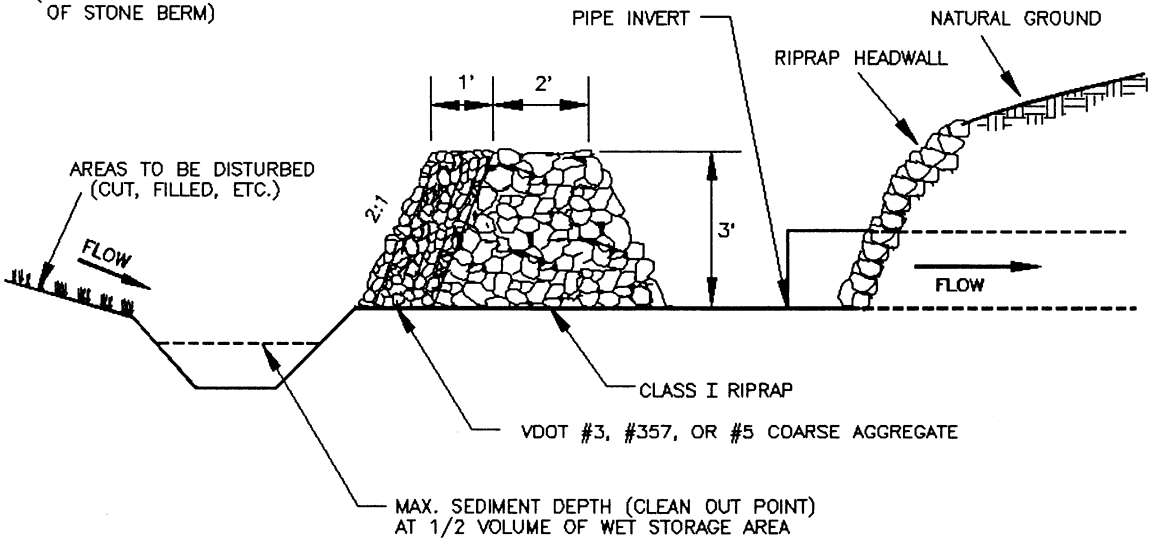


*STORAGE REQUIREMENTS EQUIVALENT TO THAT OF TEMPORARY SEDIMENT TRAP, STD. & SPEC. 3.13

67 C.Y./ACRE WET STORAGE (BELOW BASE OF STONE)

67 C.Y./ACRE DRY STORAGE (BASE OF STONE TO TOP OF STONE BERM)

PERSPECTIVE VIEW



ELEVATION

Source: North Carolina Sediment Control Commission

Plate 3.08-2

Maintenance

1. The structure shall be inspected after each rain and repairs made as needed.

2. Aggregate shall be replaced or cleaned when inspection reveals that clogged voids are causing ponding problems which interfere with on-site construction.

3. Sediment shall be removed and the impoundment restored to its original dimensions when sediment has accumulated to one-half the design depth. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode and cause sedimentation problems.

4. Temporary structures shall be removed when they have served their useful purpose, but not before the upslope area has been permanently stabilized.

STD & SPEC 3.19

RIPRAP

RR

Definition

A permanent, erosion-resistant ground cover of large, loose, angular stone with filter fabric or granular underlining.

Purposes

1. To protect the soil from the erosive forces of concentrated runoff.

2. To slow the velocity of concentrated runoff while enhancing the potential for infiltration.

3. To stabilize slopes with seepage problems and/or non-cohesive soils.

Conditions Where Practice Applies

Wherever soil and water interface and the soil conditions, water turbulence and velocity, expected vegetative cover, etc., are such that the soil may erode under the design flow conditions. Riprap may be used, as appropriate, at stormdrain outlets, on channel banks and/or bottoms, roadside ditches, drop structures, at the toe of slopes, as transition from concrete channels to vegetated channels, etc.

Planning Considerations

Graded vs. Uniform Riprap

Riprap is classified as either graded or uniform. A sample of graded riprap would contain a mixture of stones which vary in size from small to large. A sample of uniform riprap would contain stones which are all fairly close in size.

For most applications, graded riprap is preferred to uniform riprap. Graded riprap forms a flexible self-healing cover, while uniform riprap is more rigid and cannot withstand movement of the stones. Graded riprap is cheaper to install, requiring only that the stones be dumped so that they remain in a well-graded mass. Hand or mechanical placement of individual stones is limited to that necessary to achieve the proper thickness and line. Uniform riprap requires placement in a more or less uniform pattern, requiring more hand or mechanical labor.

Riprap sizes can be designed by either the diameter or the weight of the stones. It is often misleading to think of riprap in terms of diameter, since the stones should be angular instead of spherical. However, it is simpler to specify the diameter of an equivalent size of spherical stone. Table 3.19-A lists some typical stones by weight, spherical diameter and the corresponding rectangular dimensions. These stone sizes are based upon an assumed specific weight of 165 lbs./ft^3.

Since graded riprap consists of a variety of stone sizes, a method is needed to specify the size range of the mixture of stone. This is done by specifying a diameter of stone in the mixture for which some percentage, by weight, will be smaller. For example, d_{85} refers to a mixture of stones in which 85% of the stone by weight would be smaller than the diameter specified. Most designs are based on d_{50}. In other words, the design is based on the average size of stone in the mixture. Table 3.19-B lists VDOT standard graded riprap sizes by diameter the weight of the stone.

To ensure that stone of substantial weight is used when implementing riprap structures, specified weight ranges for individual stones and composition requirements should be followed. Such guidelines will help to prevent inadequate stone from being used in construction of the measures and will promote more consistent stone classification statewide. Table 3.19-C notes these requirements.

TABLE 3.19-A

SIZE OF RIPRAP STONES

Weight (lbs.)	Mean Spherical Diameter (ft.)	Angular Shape: Length (ft.)	Width, Height (ft.)
50	0.8	1.4	0.5
100	1.1	1.75	0.6
150	1.3	2.0	0.67
300	1.6	2.6	0.9
500	1.9	3.0	1.0
1,000	2.2	3.7	1.25
1,500	2.6	4.7	1.5
2,000	2.75	5.4	1.8
4,000	3.6	6.0	2.0
6,000	4.0	6.9	2.3
8,000	4.5	7.6	2.5
20,000	6.1	10.0	3.3

Source: VDOT Drainage Manual

Sequence of Construction

Since riprap is used where erosion potential is high, construction must be sequenced so that the riprap is put in place with the minimum possible delay. Disturbance of areas where riprap is to be placed should be undertaken only when final preparation and placement of the riprap can follow immediately behind the initial disturbance. Where riprap is used for outlet protection, the riprap should be placed before or in conjunction with the construction of the pipe or channel so that it is in place when the pipe or channel begins to operate.

Design Criteria

Gradation

The riprap shall be composed of a well-graded mixture down to the one-inch size particle such that 50% of the mixture by weight shall be larger than the d_{50} size as determined from the design procedure. A well-graded mixture as used herein is defined as a mixture composed primarily of the larger stone sizes but with a sufficient mixture of other sizes to fill the progressively smaller voids between the stones. The diameter of the largest stone size in such a mixture shall be 1½ times the d_{50} size.

TABLE 3.19-B

GRADED RIPRAP - DESIGN VALUES

Riprap Class	D_{15} Weight (lbs.)	Mean D_{15} Spherical Diameter (ft.)	Mean D_{50} Spherical Diameter (ft.)
Class AI	25	0.7	0.9
Class I	50	0.8	1.1
Class II	150	1.3	1.6
Class III	500	1.9	2.2
Type I	1,500	2.6	2.8
Type II	6,000	4.0	4.5

Source: VDOT Drainage Manual

The designer, after determining the riprap size that will be stable under the flow conditions, shall consider that size to be a minimum size and then, based on riprap gradations actually available in the area, select the size or sizes that equal or exceed the minimum size. The possibility of damage by children shall be considered in selecting a riprap size, especially if there is nearby water or a gully in which to toss the stones.

Thickness

The minimum thickness of the riprap layer shall be 2 times the maximum stone diameter, but not less than 6 inches.

Quality of Stone

Stone for riprap shall consist of field stone or rough unhewn quarry stone of approximately rectangular shape. The stone shall be hard and angular and of such quality that it will not disintegrate on exposure to water or weathering and it shall be suitable in all respects for the purpose intended. The specific gravity of the individual stones shall be at least 2.5.

Rubble concrete may be used provided it has a density of at least 150 pounds per cubic foot, and otherwise meets the requirement of this standard and specification.

TABLE 3.19-C

GRADED RIPRAP - WEIGHT ANALYSIS

Riprap Class/Type	Weight Range* (lbs.)	Requirements for Stone Mixture
Class AI	25-75	Max. 10% > 75 lbs.
Class I	50-150	60% > 100 lbs.
Class II	150-500	50% > 300 lbs.
Class III	500-1,500	50% > 900 lbs.
Type I	1,500-4,000	Av. wt. = 2,000 lbs.
Type II	6,000-20,000	Av. wt. = 8,000 lbs.

* In all classes/types of riprap, a maximum 10% of the stone in the mixture may weigh less than the lower end of the range.

Source: Adapted from VDOT Road and Bridge Specifications

Filter Fabric Underlining

A lining of engineering filter fabric (geotextile) shall be placed between the riprap and the underlying soil surface to prevent soil movement into or through the riprap. Table 3.19-D notes the minimum physical properties of the filter fabric.

Filter fabric shall not be used on slopes greater than 1½:1 as slippage may occur and should be used in conjunction with a layer of course aggregate (granular filter blanket is described below) when the riprap to be placed is Class II or larger.

Granular Filter

Although the filter cloth underlining or bedding is the preferred method of installation, a granular (stone) bedding is a viable option when the following relationship exists:

$$\frac{d_{15}\ filter}{d_{85}\ base} < 5 < \frac{d_{15}\ filter}{d_{15}\ base} < 40$$

and,

$$\frac{d_{50}\ filter}{d_{50}\ base} < 40$$

In these relationships, filter refers to the overlying material and base refers to the underlying material. The relationships must hold between the filter material and the base material and between the riprap and the filter material. In some cases, more than one layer of filter material may be needed. Each layer of filter material should be approximately 6-inches thick.

TABLE 3.19-D

REQUIREMENTS FOR FILTER FABRIC USED WITH RIPRAP

Physical Property	Test Method	Requirements
Equivalent Opening Size	Corps of Engineers CWO 2215-77	Equal or greater than U.S. No. 50 sieve
Tensile Strength* @ 20% (maximum)	VTM-52	30 lbs./linear in. (minimum)
Puncture Strength	ASTM D751*	80 lbs. (minimum)

* Tension testing machine with ring clamp, steel ball replaced with 5/16 diameter solid steel cylinder with hemispherical tip centered within the ring clamp.

Seams shall be equal in strength to basic material.

Additional fabric material or non-corrosive steel wire may be incorporated into the fabric to increase overall strength.

Source: VDOT Road and Bridge Specifications

Riprap at Outlets

Design criteria for sizing the stone and determining the dimensions of riprap pads used at the outlet of drainage structure are contained in OUTLET PROTECTION (Std. & Spec. 3.18). A filter fabric underlining is required for riprap used as outlet protection.

Riprap for Channel Stabilization

Riprap for channel stabilization shall be designed to be stable for the condition of bank-full flow in the reach of channel being stabilized. The design procedure in Appendix 3.19-a, which is extracted from the Federal Highway Administration's Design of Stable Channels with Flexible Linings (82), shall be used. This method establishes the stability of the rock material relative to the forces exerted upon it.

Riprap shall extend up the banks of the channel to a height equal to the maximum depth of flow or to a point where vegetation can be established to adequately protect the channel.

The riprap size to be used in a channel bend shall extend upstream from the point of curvature and downstream from the bottom of the channel to a minimum depth equal to the thickness of the blanket and shall extend across the bottom of the channel the same distance (see Plate 3.19-1).

Freeboard and Height of Bank

For riprapped and other lined channels, the height of channel lining above the water surface should be based on the size of the channel, the flow velocity, the curvature, inflows, wind action, flow regulation, etc.

The height of the bank above the water surface varies in a similar manner, depending on the above factors plus the type of soil.

Plate 3.19-2 is based on information developed by the U.S. Bureau of Reclamation for average freeboard and bank height in relation to channel capacity. This chart should be used by the designer to obtain a minimum freeboard for placement of riprap and top of bank.

Riprap for Slope Stabilization

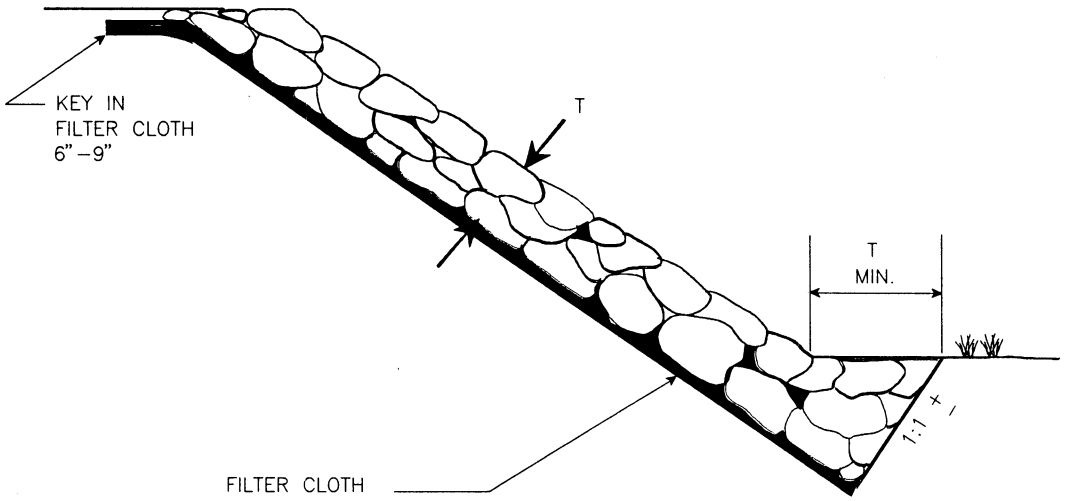
Riprap for slope stabilization shall be designed so that the natural angle of repose of the stone mixture is greater than the gradient of the slope being stabilized (see Plate 3.19-5).

Riprap for Lakes and Ponds Subject to Wave Action

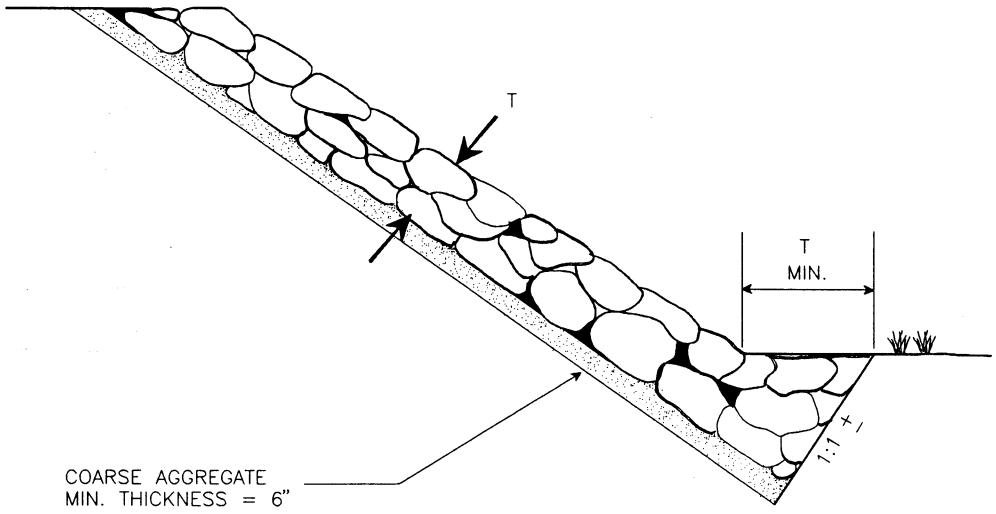
Riprap used for shoreline protection on lakes and ponds may be subject to wave action. The waves affecting the shoreline may be wind-driven or created by boat wakes. Consult

TOE REQUIREMENTS FOR BANK STABILIZATION

FILTER CLOTH UNDERLINER (PREFERRED)



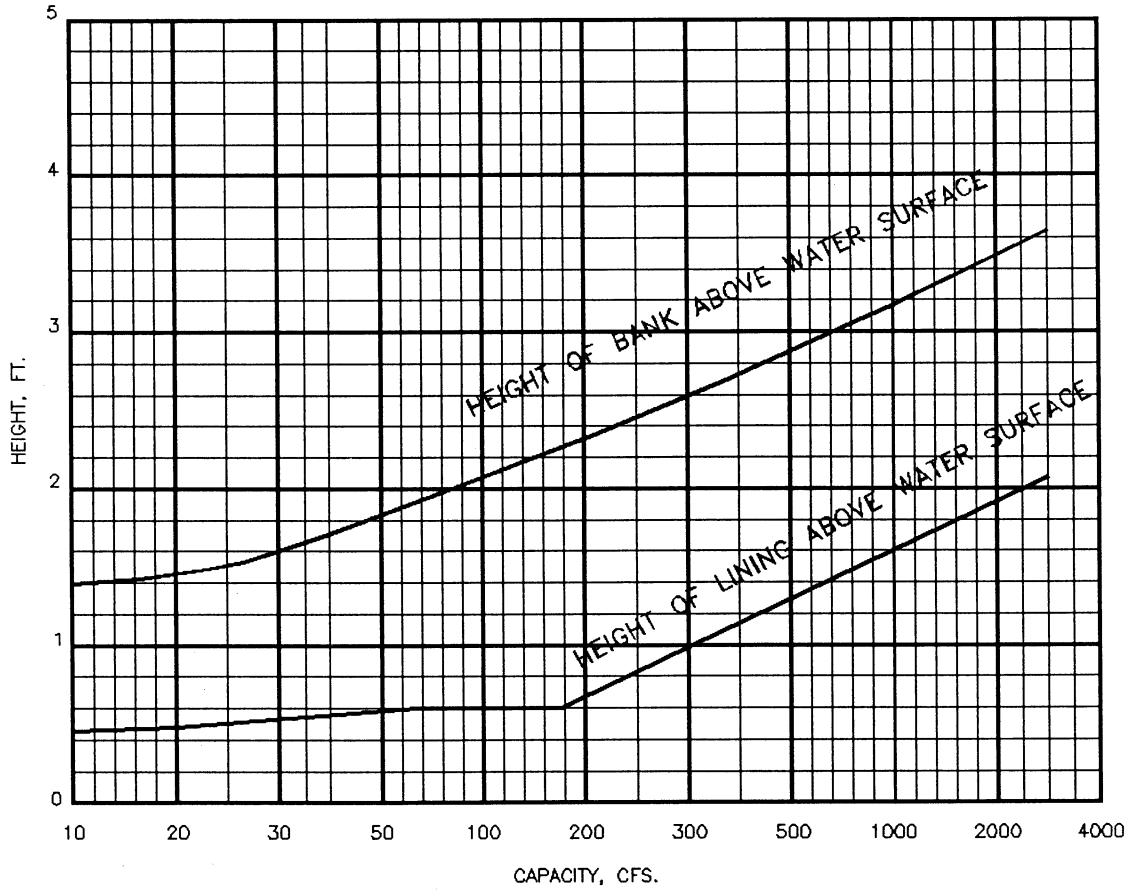
GRANULAR FILTER



Source: Adapted from VDOT Drainage Manual

Plate 3.19-1

RECOMMENDED FREEBOARD AND HEIGHT OF BANK OF LINED CHANNELS



Source: U. S. Bureau of Reclamation

Plate 3.19-2

the latest edition of the VDOT Drainage Manual ("Design of Slope Protection to Resist Wave Action") for specific design criteria in determining the required size of stones and the design wave height for such an installation. Use the equations in Appendix 3.19-b to calculate other pertinent design parameters. For more in-depth design criteria concerning these installations, see the U.S. Army Corps of Engineers' Shore Protection Manual (59).

Riprap for Abrupt Channel Contractions

Refer to latest edition of VDOT Drainage Manual.

Riprap for Installations Subject to Tidal and Wave Action

The design of riprap structures for tidal areas is beyond the scope of the VESCL and VESCR. The DSWC's Shoreline Programs Bureau provides advice regarding minimum design parameters for these installations. Notably, a riprap design for shoreline protection in tidal areas must meet all applicable state and federal requirements and should be carried out by a qualified professional.

Construction Specifications

Subgrade Preparation: The subgrade for the riprap or filter shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density approximately that of the surrounding undisturbed material. Brush, trees, stumps and other objectionable material shall be removed.

Filter Fabric or Granular Filter: Placement of the filter fabric should be done immediately after slope preparation. For granular filters, the stone should be spread in a uniform layer to the specified depth (normally 6 inches). Where more than one layer of filter material is used, the layer should be spread so that there is minimal mixing of the layers.

When installing geotextile filter cloths, the cloth should be placed directly on the prepared slope. The edges of the sheets should overlap by at least 12 inches. Anchor pins, 15 inches long, should be spaced every 3 feet along the overlap. The upper and lower ends of the cloth should be buried at least 12 inches. Care should be taken not to damage the cloth when placing the riprap. If damage occurs, that sheet should be removed and replaced. For large stone (Class II or greater), a 6-inch layer of granular filter will be necessary to prevent damage to the cloth.

Stone Placement: Placement of riprap should follow immediately after placement of the filter. The riprap should be placed so that it produces a dense well-graded mass of stone with a minimum of voids. The desired distribution of stones throughout the mass may be obtained by selective loading at the quarry, controlled dumping of successive loads during final placing, or by a combination of these methods. The riprap should be placed to its full thickness in one operation. The riprap should not be placed in layers. The riprap should not be placed by dumping into chutes or similar methods which are likely to cause

segregation of the various stone sizes. Care should be taken not to dislodge the underlying material when placing the stones.

The finished slope should be free of pockets of small stone or clusters of large stones. Hand placing may be necessary to achieve the required grades and a good distribution of stone sizes. Final thickness of the riprap blanket should be within plus or minus 1/4 of the specified thickness.

Maintenance

Once a riprap installation has been completed, it should require very little maintenance. It should, however, be inspected periodically to determine if high flows have caused scour beneath the riprap or filter fabric or dislodged any of the stone. Care must be taken to properly control sediment-laden construction runoff which may drain to the point of the new installation. If repairs are needed, they should be accomplished immediately.

APPENDIX 3.19-a

RIPRAP DESIGN IN CHANNEL

The design method described below is adapted from Hydraulic Engineering Circular No. 15 of the Federal Highway Administration. It is applicable to both straight and curved sections of channel where the flow is tangent to the bank of the channel.

Tangent Flow - Federal Highway Administration Method

This design method determines a stable rock size for straight and curved sections of channels. It is assumed that the shape, depth of flow, and slope of the channel are known. A stone size is chosen for the maximum depth of flow. If the sides of the channel are steeper than 3:1, the stone size must be modified accordingly. The final design size will be stable on both sides of the channel and the bottom.

1. Enter Plate 3.19-3 with the maximum depth of flow (feet) and channel slope (feet/foot). Where the two lines intersect, choose the d_{50} size of stone. (Select the d_{50} for the diagonal line above the point of intersection).

2. If channel side slopes are steeper than 3:1, continue with step 3; if not, the procedure is complete.

3. Enter Plate 3.19-4 with the side slope and the base width to maximum depth ratio (B/d). Where the two lines intersect, move horizontally left to read K_1.

4. Determine from Plate 3.19-5 the angle of repose for the d_{50} size of stone and the side slope of the channel. (Use 42° for d_{50} greater than 1.0. Do not use riprap on slopes steeper than the angle of repose for the size of stone).

5. Enter Plate 3.19-6 with the side slope of the channel and the angle of repose for the d_{50} size of stone. Where the two lines intersect, move vertically down to read k_2.

6. Compute $d_{50} \times K_1/K_2 = d'_{50}$ to determine the correct size stone for the bottom and side slopes of straight sections of channel.

For Curved Sections of Channel

1. Compute the radius of the curve (Ro), measured at the outside edge of the bottom.

2. Compute the ratio of the top width of the water surface (Bs) to the radius of the curve (Ro), Bs/Ro.

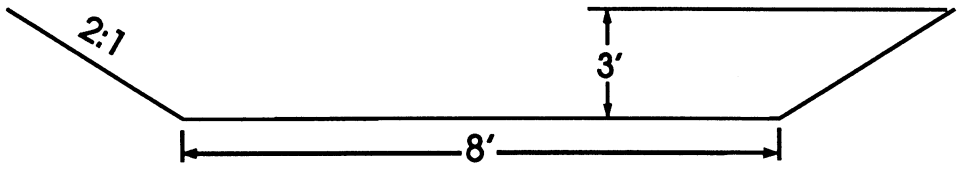
3. Enter Plate 3.19-7 with the radio Bs/Ro. Move vertically until the curve is intersected. Move horizontally left to read K_3.

4. Compute d'_{50} x K_3 = d_{50c} to determine the correct size stone for bottom and side slopes of the curved sections of channel.

Example Problem

Given:

A trapezoidal channel 3 feet deep, 8 foot bottom width, 2:1 side slopes, and a 2% slope.



Calculate:

A stable riprap size for the bottom and side slopes of the channel.

Solution:

1. From Plate 3.19-3, for a 3-foot-deep channel on a 2% grade, d_{50} = 0.75 feet or 9 inches.

2. Since the side slopes are steeper than 3:1, continue with step 3.

3. From Plate 3.19-4, B/d = 8/3 = 2.67, Z = 2, K_1 = 0.82.

4. From Plate 3.19-5, for d_{50} = 9 inches, = 41°.

5. From Plate 3.19-6, for Z = 2 and = 41°, K_2 = 0.73.

6. d_{50} x K_1/k_2 = d'_{50} = 0.75 x 0.82/0.73 = 0.84 feet.

   0.84 feet x $\frac{12 \text{ inches}}{1 \text{ foot}}$ = 10.08. Use d'_{50} = 10 inches.

Given:

The preceding channel has a curved section with a radius of 50 feet.

Calculate:

A stable riprap size for the bottom and side slopes of the curved section of channel.

Solution:

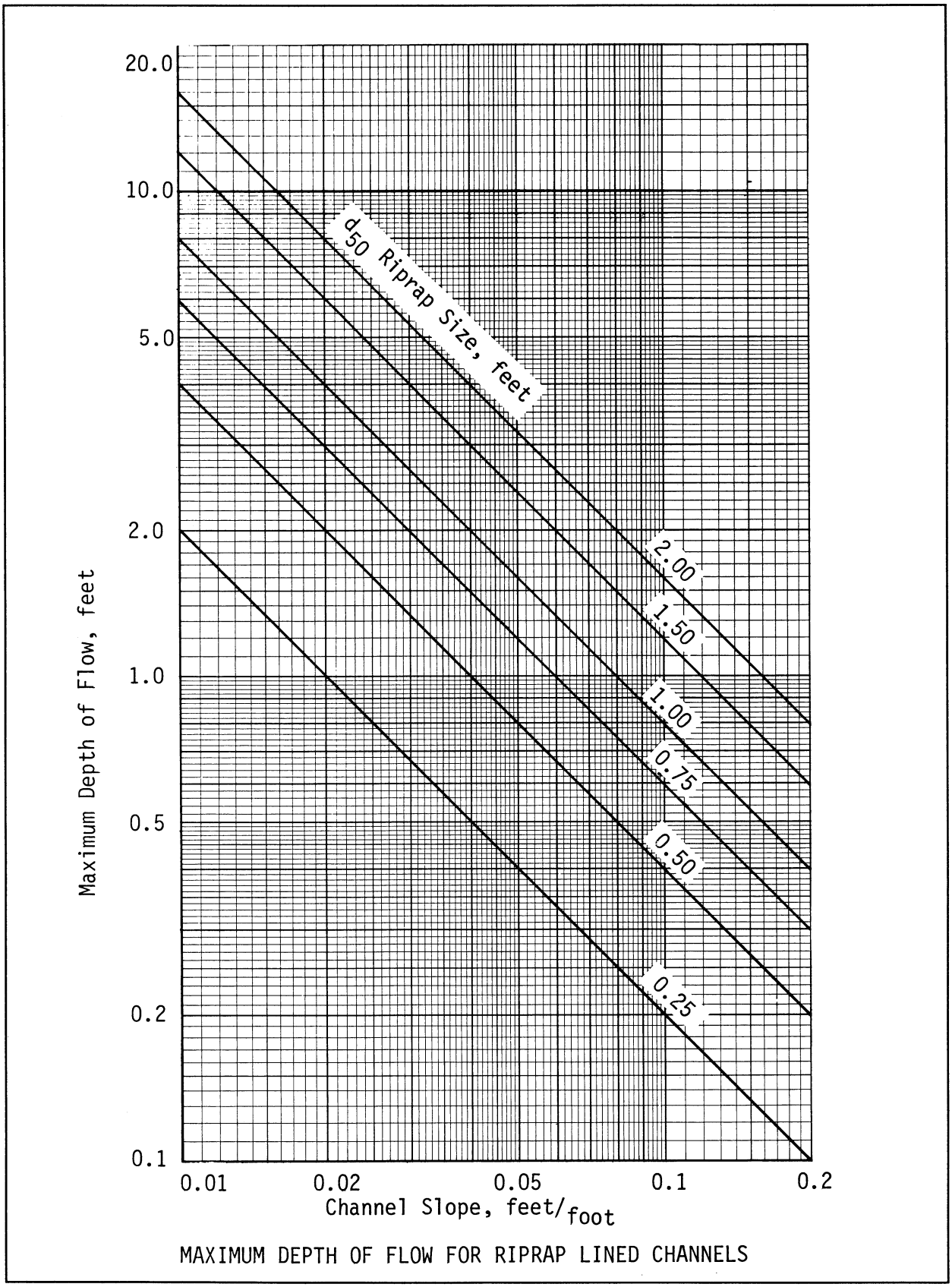
1. Ro = 50 feet

2. Bs/Ro = 20/50 = 0.40

3. From Plate 3.19-7, for Bs/Ro = 0.40, K_3 = 1.1

4. d'_{50} x K_3 = 0.84 x 1.1 = 0.92 feet

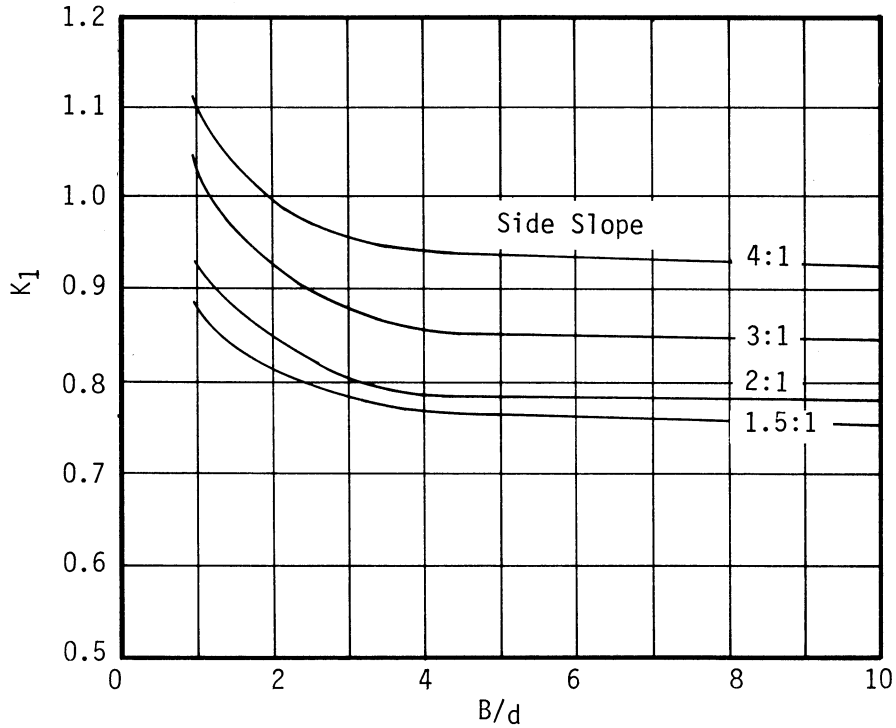
   0.92 feet x $\frac{12 \text{ inches}}{1 \text{ foot}}$ = 11.0.



MAXIMUM DEPTH OF FLOW FOR RIPRAP LINED CHANNELS

Source: VDOT Drainage Manual

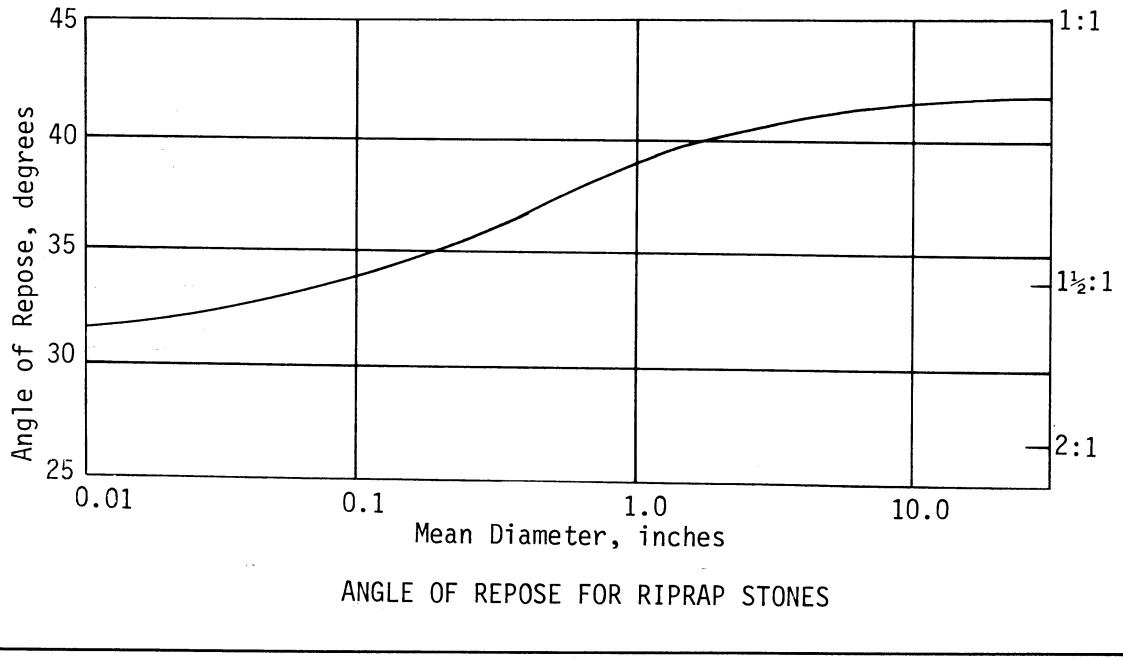
Plate 3.19-3



DISTRIBUTION OF BOUNDARY SHEAR AROUND WETTED PERIMETER OF TRAPEZOIDAL CHANNEL

Source: VDOT Drainage Manual

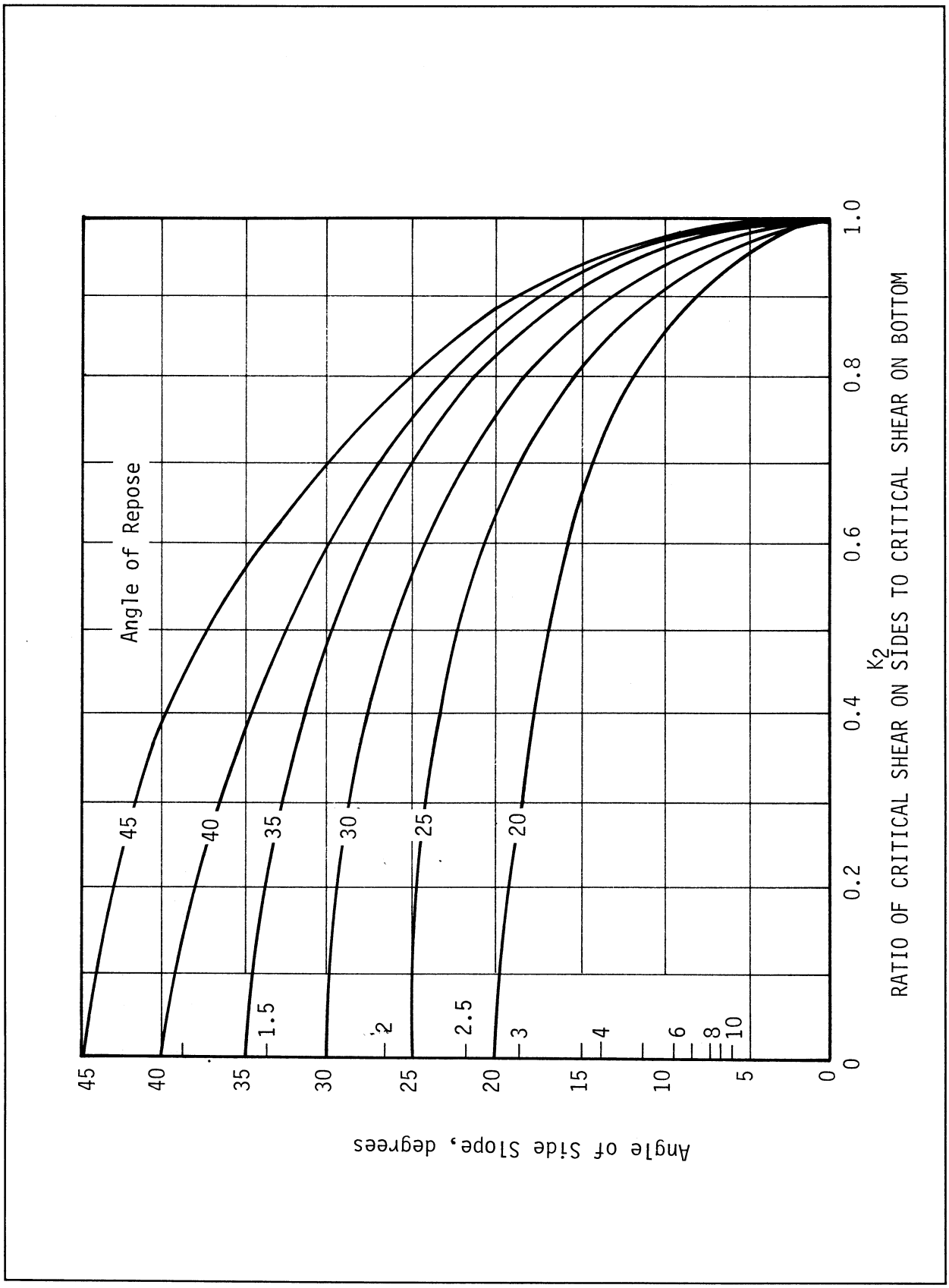
Plate 3.19-4



ANGLE OF REPOSE FOR RIPRAP STONES

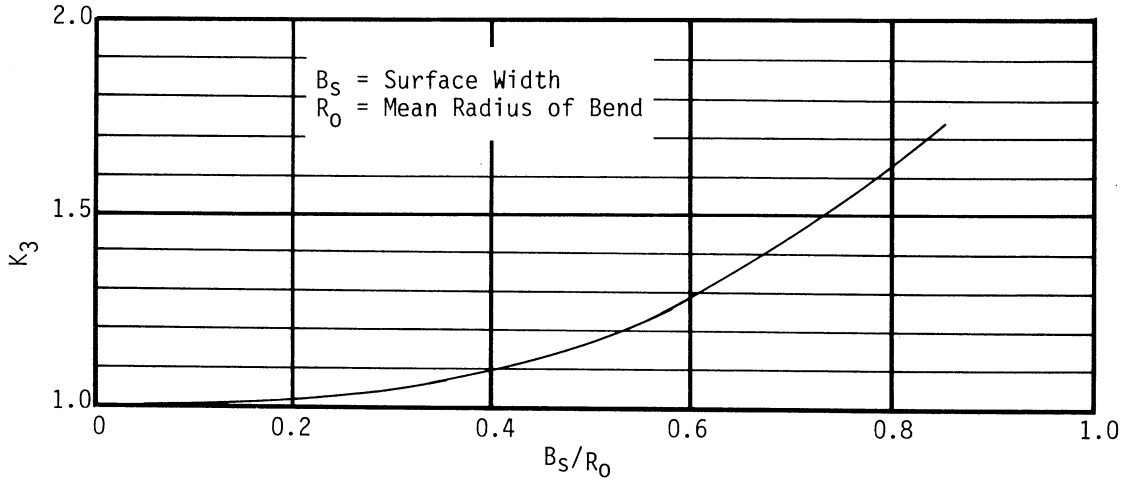
Source: VDOT Drainage Manual

Plate 3.19-5



Source: VDOT Drainage Manual

Plate 3.19-6



RATIO OF MAXIMUM BOUNDARY SHEAR IN BENDS TO MAXIMUM BOTTOM SHEAR IN STRAIGHT REACHES

Source: VDOT Drainage Manual

Plate 3.19-7

APPENDIX 3.19-b

RIPRAP DESIGN EQUATIONS FOR LAKES AND PONDS SUBJECT TO WAVE ACTION

In many instances, riprap is installed along the shoreline of nontidal ponds and lakes in order to protect them from the continual scour of wind-driven waves. The following methods/equations will produce minimum design parameters for size of stone, depth of buried toe (or width of riprap apron) and height of structure above average water level.

I. **Size of Riprap Required** - See VDOT Drainage Manual ("Design of Slope Protection to Resist Wave Action").

II. **DWH** (Design Wave Height) - See VDOT Drainage Manual ("Design of Slope Protection to Resist Wave Action") or U.S. Army Corps of Engineers' Shore Protection Manual.

III. **Depth of Buried Toe** = DWH at design wind speed.

IV. **Width of Riprap Apron** (Alternative to Buried Toe) = DWH x 2

V. **Height of Structure** (Above the Average Water Level) = DWH x 1.5

Street Sweeping - FY 2021

Street Name	From	To	Center Lane Miles	Lane Miles Swept	Date Swept #1	Date Swept #2	Date Swept #3	Date Swept #4
A AVE	CEDAR LA	WAKEFIELD AVE	0.13	0.26				
ADAMS AVE	GEORGE AVE	HARGROVE AVE	0.05	0.10				
ANGUS LA	LONGHORN DR	JERSEY CT	0.08	0.16				
APPOMATTOX CT	APPOMATTOX DR	CUL DE SAC	0.06	0.12				
APPOMATTOX DR	COVINGTON RD	CUL DE SAC	0.16	0.32				
ARCHER AVE	BOULEVARD	DUNN ST	0.15	0.30				
ARCHER AVE	RT 1/301	RT 1/301	0.11	0.22				
ARLINGTON AVE	VIRGINIA AVE	BOULEVARD	0.06	0.12				
ASH AVE	HEMLOCK AVE	BOULEVARD	0.07	0.14				
ASHBY AVE	BOULEVARD	DEAD END	0.21	0.42				
ATLANTIC AVE	CHARLES AVE	ELLERSLIE AVE	0.15	0.30				
AVON CT	BERKSHIRE LA	CUL DE SAC	0.04	0.08				
AYRSHIRE RD	PERTHSHIRE LA	EDINBOROUGH DR	0.21	0.42				
AZALEA LA	SCHOOL AVE	HOLLY AVE	0.17	0.34				
B AVE	WAKEFIELD AVE	BOULEVARD	0.13	0.26				
BATTERY PL	WRIGHT AVE	MARVIN AVE	0.68	1.36				
BEAR CHASE CT	LONGHORN DR	CUL DE SAC	0.10	0.20				
BEECH AVE	BRISTOL AVE	IVEY AVE	0.06	0.12				
BEECHWOOD AVE	DALE AVE	BOULEVARD	0.12	0.24				
BENT OAKS DR	ELLERSLIE AVE	CUL DE SAC	0.24	0.48				
BERKSHIRE LA	AVON CT	TAYLOR LA	0.11	0.22				
BERMUDA AVE	ELLERSLIE AVE E	NORTH DEAD END	0.26	0.52				
BILTMORE DR	FORESTVIEW DR	NORWOOD DR	0.58	1.16	6/2/21			
BIRCH AVE	BOULEVARD	SPRUCE AVE	0.13	0.26				
BLUFFS CT	BLUFFS DR	DEAD END SOUTH	0.04	0.08				
BLUFFS DR	DUNLOP FARMS BLVD	DEAD END EAST	0.18	0.36				
BLUFFS TERR	BLUFFS DR	DEAD END NORTH	0.15	0.30				
BOULEVARD	NCL	SCL	3.46	6.92	9/23/20	5/24/21		
BOYKINS AVE	BOULEVARD	CUL DE SAC	0.11	0.22				
BRADSHER AVE	DUPUY AVE	DEAD END	0.16	0.32				
BRAME AVE	BOULEVARD	WAKEFIELD AVE	0.15	0.30				
BRANDERS BRIDGE RD	BOULEVARD	WCL	0.19	0.38	9/23/20			
BRANDYWINE RD	HUNTINGTON RD	WINDMERE DR	0.18	0.36				
BRAXTON AVE	DUPUY AVE	MAPLE LA	0.14	0.28				
BREEZY HILL DR	DEAD END SOUTH	DEAD END NORTH	0.39	0.78				
BRIAN LA	FAIRMONT DR	NORWOOD DR	0.26	0.52	6/28/21			
BRIARCLIFFE CT	BRIARCLIFFE DR	DEAD END W	0.11	0.22				
BRIARCLIFFE DR	WOODCLIFFE DR	END PAVEMENT	0.42	0.84				
BRIJADAN LA	LAKEVIEW AVE	CEDAR CREEK	0.16	0.32				
BRIJADAN LA	CEDAR CREEK	LAURENS LA	0.03	0.06				

Street Sweeping - FY 2021

Street Name	From	To	Center Lane Miles	Lane Miles Swept	Date Swept #1	Date Swept #2	Date Swept #3	Date Swept #4
BRISTOL AVE	CAMERON AVE	CONDUIT RD	0.16	0.32				
BROCKWELL LA	CONDUIT RD	DEAD END	0.43	0.86				
BROOKE CT	WATERFRONT DR	DEAD END	0.05	0.10	12/21/20			
BROOKEDGE DR	VALLEY RD	NORTH TEMPLE AVE	0.60	1.20				
BROOKHILL AVE	FORESTVIEW DR	SHERWOOD DR	0.16	0.32	6/28/21			
BROOKHILL CT	BROOKHILL AVE	BROOKHILL CT	0.11	0.22	6/28/21			
BRUCE AVE	BOULEVARD	DEAD END	0.10	0.20				
BUCKINGHAM DR	WINSTON DR	FAIRMONT DR	0.23	0.46	6/29/21			
BURLINGTON DR	DUKE OF GLOUCESTER	CEDARWOOD AVE	0.13	0.26				
C AVE	BOULEVARD	WAKEFIELD AVE	0.14	0.28				
CABELL DR	LAKEVIEW AVE	DEAD END	0.15	0.30				
CAMBRIDGE PL	HANOVER AVE	BRADSHER AVE	0.26	0.52				
CAMDEN RD	HUNTINGTON RD	CONJURERS DR	0.09	0.18				
CAMELOT CT	NORWOOD DR	CUL DE SAC	0.05	0.10	6/28/21			
CAMERON AVE	BOULEVARD	FLORAL AVE	0.41	0.82				
CANTERBURY LA	BREEZY HILL DR	CONDUIT RD	0.42	0.84				
CARROLL AVE	HILLSIDE LA	BOULEVARD	0.43	0.86				
CASWELL AVE	PICKETT AVE	DAVIS AVE	0.06	0.12				
CEDAR CREEK LA	LAKEVIEW AVE	BRIJADAN LA	0.12	0.24				
CEDAR LA	TASWELL AVE	LAKEVIEW AVE	0.11	0.22				
CEDAR LA	BRAME AVE	F AVE	0.06	0.12				
CEDAR LA	E AVE	TEMPLE AVE	0.11	0.22				
CEDAR LA	A AVE	BRANDERS BRIDGE RD	0.10	0.20				
CEDAR RIDGE CT	CLIFTON DR	CLIFTON DR	0.12	0.24				
CEDARWOOD AVE	YACHT BASIN DR	ELMWOOD DR	0.12	0.24	4/12/21			
CEDARWOOD AVE	CANTERBURY LA	COVINGTON RD	0.28	0.56	4/12/21			
CENTER AVE	ELKO AVE	CONDUIT RD	0.12	0.24				
CHARLES AVE	CONDUIT RD	HOLLY AVE	0.16	0.32				
CHARLES AVE	PIN OAK CT	OLD TOWN DR	0.45	0.90				
CHARLES H DIMMOCK PW	SOUTHPARK BVD	TEMPLE AVE	0.69	1.38	6/23/21			
CHARLOTTE AVE	BOULEVARD	DEAD END	0.32	0.64				
CHESTERFIELD AVE E	HILLSIDE LA	HAMILTON AVE	0.46	0.92				
CHESTERFIELD AVE W	DUPUY AVE	DEAD END	0.44	0.88				
CHESTNUT AVE	IVEY RD	PINEHURST AVE	0.18	0.36				
CHOPTANK CT	PEACECLIFF CT	PEACECLIFF CT	0.10	0.20				
CLAIRMONT CT	ELLERSLIE	DUNLOP FARMS BVD						
CLEMENTS CT	DUNSTON POINT PKY	DEAD END	0.05	0.10	12/21/20			
CLIFTON AVE	CONDUIT RD	DEAD END	0.26	0.52				
CLOVER HILL AVE	CEDAR LA	WOODLAWN AVE	0.26	0.52				
COLONIAL AVE	CAMERON AVE	WESTOVER AVE E	0.39	0.78	5/21/21	6/8/21		

Street Sweeping - FY 2021

Street Name	From	To	Center Lane Miles	Lane Miles Swept	Date Swept #1	Date Swept #2	Date Swept #3	Date Swept #4
COMPTON RD	ELLERSLIE AVE	OLD TOWN DR	0.37	0.74				
COMSTOCK DR	WATERFRONT DR	DEAD END S	0.32	0.64	12/21/20			
CONCORD AVE	YORKTOWN DR	KENT AVE	0.05	0.10				
CONDUIT RD	ROSLYN AVE	WHITE BANK RD	3.38	6.76	9/29/20	4/20/21	6/23/21	
CONJURERS DR	DEAD END	DEAD END	0.39	0.78				
COTTAGE GROVE AVE	WESTOVER AVE W	MAPLE AVE	0.25	0.50				
COURTLAND DR	WICKER DR	BRIARCLIFFE DR	0.10	0.20				
COVINGTON RD	CONDUIT RD	CUL DE SAC	0.66	1.32				
CREEK POINT CT	WOODBRIDGE RD	DEAD END E	0.08	0.16	12/21/20			
CRESCENT AVE	DEAD END	CUL DE SAC	0.21	0.42				
CRESTWOOD DR	SNEAD AVE	SNEAD AVE	0.23	0.46				
CUMBERLAND DR	COURTLAND DR	WICKER DR	0.15	0.30				
D AVE	WAKEFIELD AVE	BOULEVARD	0.13	0.26	6/7/21			
DALE AVE	ELLERSLIE AVE E	ROSS AVE	0.28	0.56				
DANA LA	CLIFTON AVE	CLIFTON AVE	0.20	0.40				
DANVILLE AVE	FLORAL AVE	LAFAYETTE AVE	0.16	0.32	6/7/21			
DANVILLE AVE	LAFAYETTE AVE	LYNCHBURG AVE	0.22	0.44	6/7/21			
DAVIS AVE	WOODLAWN AVE	LENOIR AVE	0.12	0.24				
DEERWOOD DR	CONDUIT RD	CUL DE SAC	0.17	0.34				
DICK EWELL AVE	FISCHER AVE	HAMILTON AVE	0.12	0.24				
DOGWOOD DR	HOLLY AVE	SCHOOL AVE	0.16	0.32				
DOVER LA	CHARLES AVE	OLD TOWN DR	0.17	0.34				
DRAKE AVE	COTTAGE GROVE AVE	MERIDIAN AVE	0.14	0.28				
DRIFTWOOD AVE	ELMWOOD DR	CUL DE SAC	0.11	0.22				
DUKE OF GLOUCESTER	CONDUIT RD	CUL DE SAC	0.94	1.88				
DUNLOP FARMS BLVD	ELLERSLIE E AVE	DEAD END	0.74	1.48				
DUNOON CT	DUNOON RD	DEAD END	0.07	0.14				
DUNOON RD	EDINBOROUGH DR	END PAVEMENT	0.15	0.30				
DUNSTON POINT PKY	WHITE BANK RD	WATERFRONT DR	0.60	1.20	12/21/20			
DUPUY AVE	BOULEVARD	WCL	0.43	0.86	9/24/20			
E AVE	BOULEVARD	WAKEFIELD AVE	0.13	0.26				
EAST AVE	EASTMAN AVE	HARGRAVE AVE	0.17	0.34				
EASTMAN AVE	BOULEVARD	EAST AVE	0.20	0.40				
EASTWIND CT	BRIARCLIFFE DR	DEAD END	0.09	0.18				
EDINBOROUGH DR	CONDUIT RD	AYRSHIRE RD	0.27	0.54				
ELKO AVE	MACARTHUR AVE	HIGHLAND CT	0.20	0.40				
ELKO AVE	WESTOVER AVE E	LYNCHBURG AVE	0.22	0.44				
ELLERSLIE AVE (E & W)	SPRINGDALE AVE	CONDUIT RD	1.37	2.74	9/21/20	4/19/21	6/8/21	
ELLIS LA	BOULEVARD	SNEAD AVE	0.07	0.14				
ELMWOOD DR	CONDUIT RD	MT PLEASANT DR	0.73	1.46				

Street Sweeping - FY 2021

Street Name	From	To	Center Lane Miles	Lane Miles Swept	Date Swept #1	Date Swept #2	Date Swept #3	Date Swept #4
ESSEX RD	BOULEVARD	HAMPTON DR	0.26	0.52				
EWING AVE	LAKEVIEW AVE	TASWELL AVE	0.13	0.26				
F AVE	WAKEFIELD AVE	BOULEVARD	0.14	0.28				
FAIRFAX AVE	BOULEVARD	DEAD END	0.27	0.54				
FAIRLIE RD	OLD TOWN DR	COMPTON RD	0.31	0.62				
FAIRMONT DR	NORWOOD DR	BUCKINGHAM DR	0.32	0.64	6/2/21			
FAIRMONT DR	BUCKINGHAM DR	SHERWOOD DR	0.06	0.12	6/2/21			
FARRIS AVE	MAPLE GROVE AVE	CUL DE SAC	0.10	0.20				
FISCHER AVE	JOE JOHNSON AVE	RICHMOND AVE	0.16	0.32				
FLINTLOCK DR	SWIFT CREEK LA	NCL	0.05	0.10				
FLORAL AVE	CAMERON AVE	WESTOVER AVE E	0.34	0.68				
FOREST VIEW DR	LAKEWOOD DR	BILTMORE DR	0.89	1.78	10/1/20	4/12/21	6/29/21	
FRANKLIN AVE	BRAME AVE	MAPLE AVE	0.58	1.16				
FREDERICK AVE	ELLERSLIE AVE	CHARLES AVE	0.15	0.30				
FRIAR LA	NORWOOD DR	SEATON DR	0.07	0.14	6/28/21			
GEORGE AVE	WEST AVE	EAST AVE	0.16	0.32				
GERMAR CT	CUL DE SAC E	CUL DE SAC W	0.17	0.34				
GILLS DR	CONDUIT RD	DUKE OF GLOUCESTER	0.12	0.24				
GLENVIEW AVE	SHERWOOD DR	ELLERSLIE AVE W	0.19	0.38				
GOULD AVE	BRADSHER AVE	DUPUY AVE	0.10	0.20				
GREEN MEADOW CT	GREENMEADOW DR	END	0.05	0.10				
GREEN MEADOW DR	HONEYCREEK CT	END	0.11	0.22				
GREENLEAF LA	KESWICK RD	CLAIRMOUNT CT	0.23	0.46				
GREENWOOD AVE	ELMWOOD DR	YACHT BASIN DR	0.12	0.24				
HAMILTON AVE	BOULEVARD	TEMPLE AVE	1.25	2.50				
HAMPTON DR	NEWCASTLE DR	ESSEX RD	0.37	0.74				
HANOVER AVE	ORCHARD AVE	MARVIN AVE	0.24	0.48				
HARDY AVE	CONDUIT RD	ELKO AVE	0.13	0.26				
HARGRAVE AVE	EAST AVE	WEST AVE	0.16	0.32				
HAWICK DR	PERTHSHIRE LA	CUL DE SAC	0.14	0.28				
HELEN AVE	SNEAD AVE	HAMILTON AVE	0.20	0.40				
HEMLOCK AVE	YEW AVE	DEAD END	0.20	0.40				
HERMITAGE RD	CONDUIT RD	BREEZY HILL DR	0.40	0.80				
HERON RUN DR	DUNSTON POINT PKWY	KINGFISHER WAY	0.07	0.14				
HIGHLAND AVE	BOULEVARD	END PAVEMENT	0.32	0.64				
HIGHLAND CT E	ELKO AVE	DEAD END E	0.06	0.12				
HIGHLAND CT W	ELKO AVE	DEAD END W	0.09	0.18				
HILL PL	DANVILLE AVE	WESTOVER AVE E	0.22	0.44				
HILLCREST AVE	BOULEVARD	DEAD END	0.24	0.48				
HILLSIDE LN	ARCHER AVE	CARROLL AVE						

Street Sweeping - FY 2021

Street Name	From	To	Center Lane Miles	Lane Miles Swept	Date Swept #1	Date Swept #2	Date Swept #3	Date Swept #4
HOLLY AVE	YORKSHIRE RD	CHARLES AVE	0.36	0.72				
HOMESTEAD DR	BILTMORE DR	FORESTVIEW DR	0.52	1.04	6/7/21			
HONEYCREEK CT	LONGHORN DR	END	0.20	0.40				
HOPE RIDGE CT	WINDMERE DR	CUL DE SAC	0.12	0.24				
HUNTINGTON RD	CONDUIT RD	CONDUIT RD	0.73	1.46	4/21/21			
INDIAN ROCK CT	WOODBRIDGE RD	DEAD END E	0.09	0.18	12/21/20			
INGRAM AVE	CONDUIT RD	END PAVEMENT	0.09	0.18				
IVEY AVE	FLORAL AVE	RIVERVIEW RD	0.38	0.76				
JACKSON AVE	BOULEVARD	HAMILTON AVE	0.31	0.62				
JAMES AVE	BOULEVARD	END PAVEMENT	0.56	1.12				
JAMESTOWN RD	HOLLY AVE	CONDUIT AVE	0.18	0.36				
JEFFERSON AVE	WASHINGTON AVE	CAMERON AVE	0.32	0.64	10/1/20			
JENNICK DR	DIMMOCK PKWY	DEAD END EAST	0.26	0.52	6/23/21			
JERSEY CT	CUL DE SAC S	CUL DE SAC N	0.16	0.32				
JETT AVE	WESTOVER AVE E	LYONS AVE	0.18	0.36				
JOE JOHNSON AVE	HAMILTON AVE	JETT AVE	0.14	0.28				
KEITH DR	ESSEX RD	NEWCASTLE DR	0.05	0.10				
KENNON CT	WATERFRONT DR	DEAD END	0.06	0.12	12/21/20			
KENNON POINT DR	DUNSTON POINT PKWY	DEAD END E	0.39	0.78				
KENSINGTON AVE	LYNCHBURG AVE	WESTOVER AVE E	0.21	0.42				
KENT AVE	CONCORD AVE	BRANDERS BRIDGE RD	0.09	0.18				
KESWICK RD	COMPTON RD	OLD TOWN DR	0.22	0.44				
KINGFISHER WAY	WHITE BANK RD	DEAD END N	0.18	0.36				
LAFAYETTE AVE	WESTOVER AVE E	BOULEVARD	0.60	1.20				
LAKE AVE	WOODLAWN AVE	SPRINGDALE AVE	0.12	0.24				
LAKESIDE DR	LAKEVIEW AVE	LAKEVIEW AVE	0.30	0.60				
LAKEVIEW AVE	BOULEVARD	WCL	0.86	1.72				
LAKEVIEW PARK RD	LAKEVIEW AVE	CABELL DR	0.29	0.58				
LAKEWATER CT	WATERFRONT DR	DEAD END N	0.05	0.10	12/21/20			
LAKEWOOD DR	SHERWOOD DR	NOTTINGHAM DR	0.52	1.04	6/22/21			
LAUREL PW	SNEAD AVE	BOULEVARD	0.07	0.14				
LAURENS LA	LAKEVIEW AVE	LAKEVIEW	0.17	0.34				
LEE AVE	BOULEVARD	DANVILLE AVE	0.27	0.54				
LEE PL	RICHMOND AVE	DANVILLE AVE	0.21	0.42				
LENOIR AVE	DAVIS AVE	CLOVER HILL AVE	0.20	0.40				
LEXINGTON DR	CONDUIT RD	DEERWOOD DR	0.17	0.34				
LILLISTON AVE	IVEY AVE	CONDUIT RD	0.11	0.22				
LONGHORN DR	ELLERSLIE AVE	DUNLOP FARMS BVD	0.56	1.12				
LUNDY AVE	SADLER AVE	VERBOV AVE	0.07	0.14				
LYNCHBURG AVE	BOULEVARD	CONDUIT RD	0.64	1.28	9/28/20	6/1/21		

Street Sweeping - FY 2021

Street Name	From	To	Center Lane Miles	Lane Miles Swept	Date Swept #1	Date Swept #2	Date Swept #3	Date Swept #4
LYONS AVE	BOULEVARD	TUSSING LA	0.39	0.78				
MACARTHUR AVE	SNEAD AVE	ELKO AVE	0.39	0.78				
MALLARD DR	CONDUIT RD	CONDUIT RD	0.15	0.30				
MAPLE AVE	BOULEVARD	MERIDIAN AVE	0.26	0.52				
MAPLE GROVE AVE	BOULEVARD	FARRIS AVE	0.20	0.40				
MAPLE LA	BATTERY PL	CUL DE SAC	0.20	0.40				
MARVIN AVE	BOULEVARD	DEAD END	0.48	0.96				
MEADOWVIEW RD	INGRAM AVE	END PAVEMENT	0.07	0.14				
MERIDIAN AVE	MAPLE AVE	DUPUY AVE	0.71	1.42				
MOORE AVE	EAST AVE	BOULEVARD	0.20	0.40				
MOORMAN AVE	OAKS AVE	TUSSING LA	0.29	0.58				
MOOSE AVE	WHITE BANK RD	WHITE BANK RD	0.20	0.40				
MOOSE LA	WOODBRIDGE RD	WOODBRIDGE	0.05	0.10	12/21/20			
MT PLEASANT DR	OAKWOOD DR	DEAD END	0.21	0.42				
NANTUCKET CT	NORTH DEAD END	SOUTH DEAD END	0.06	0.12				
NEWCASTLE DR	BOULEVARD	CUL DE SAC	0.41	0.82				
NORFOLK AVE	BOULEVARD	LAFAYETTE AVE	0.26	0.52	5/18/21			
NORWOOD DR	FORESTVIEW DR	NCL	0.84	1.68	6/8/21			
NOTTINGHAM DR	FORESTVIEW DR	CUL DE SAC	0.88	1.76	6/22/21			
OAKS AVE	LYONS AVE	END PAVEMENT	0.08	0.16				
OAKWOOD DR	MT PLEASANT DR	GREENWOOD AVE	0.62	1.24				
OLD BRICKHOUSE LA	COMSTOCK DR	DEAD END	0.21	0.42	12/21/20			
OLD TOWN CREEK WAY	CONDUIT RD	CONDUIT RD	0.06	0.12				
OLD TOWN DR	ELLERSLIE AVE	CUL DE SAC	0.67	1.34				
ORANGE AVE	BOULEVARD	DEAD END	0.25	0.50				
ORCHARD AVE	HANOVER AVE	MARVIN AVE	0.12	0.24				
ORKNEY RD	AYRSHIRE RD	EDINBOROUGH DR	0.08	0.16				
PARK AVE	CONDUIT RD	ELKO AVE	0.11	0.22				
PEACECLIFF CT	CONDUIT RD	CUL DE SAC	0.12	0.24				
PECAN TREE TER	LONGHORN DR	CUL DE SAC	0.13	0.26				
PERTHSHIRE LA	CUL DE SAC	END PAVEMENT	0.42	0.84				
PICKETT AVE	BOULEVARD	WOODLAWN AVE	0.22	0.44				
PICKWICK AVE	DANVILLE AVE	BOULEVARD	0.16	0.32				
PIEDMONT AVE	BOULEVARD	WCL	0.36	0.72				
PIN OAK CT	CHARLES AVE	CUL DE SAC	0.15	0.30				
PINECLIFFE DR	BRIARCLIFFE DR	BRIARCLIFFE DR	0.28	0.56				
PINEHURST AVE	CONDUIT RD	IVEY AVE	0.33	0.66				
PLEASANT DALE AVE	DUKE OF GLOUCESTER	CONDUIT RD	0.30	0.60				
PLUMTREE AVE	BATTERY PL	CUL DE SAC	0.21	0.42	6/30/21			
PONDOLA LN	DEAD END	CITY LIMITS	0.20	0.40				

Street Sweeping - FY 2021

Street Name	From	To	Center Lane Miles	Lane Miles Swept	Date Swept #1	Date Swept #2	Date Swept #3	Date Swept #4
POPLAR ST	MAPLE AVE	CHARLOTTE AVE	0.05	0.10				
PRIDE AVE	TEMPLE AVE	PRINCE ALBERT AVE	0.05	0.10				
PRINCE ALBERT AVE	HAMILTON AVE	SNEAD AVE	0.39	0.78				
PRINCETON RD	WINDMERE DR	HUNTINGTON DR	0.17	0.34				
RED FOX RD	HUNTINGTON RD	HUNTINGTON RD	0.17	0.34				
RICHMOND AVE	BOULEVARD	LAFAYETTE AVE	0.26	0.52				
RIDGE RD	SNEAD AVE	DEAD END	0.39	0.78				
RIDGECREST LA	RIVEROAKS DR	CUL DE SAC	0.30	0.60				
RIVEROAKS DR	CONDUIT RD	BREEZY HILL DR	0.39	0.78	5/21/21			
RIVERSIDE RD	ROSLYN AVE	END PAVEMENT	0.03	0.06				
RIVERVIEW RD	IVEY AVE	ROSLYN AVE	0.25	0.50				
ROANOKE AVE	BOULEVARD	DEAD END	0.38	0.76				
ROBINWOOD CT	NORWOOD DR	CUL DE SAC	0.04	0.08	6/28/21			
ROSLYN AVE	WASHINGTON AVE	IVEY AVE	0.33	0.66	5/20/21			
ROSLYN RD E	I-95	SOUTHPARK BLVD	0.23	0.46				
ROSLYN RD W	I-95	DEAD END (past conduit)	1.11	2.22				
ROSS AVE	EASTMAN AVE	EASTMAN AVE	0.10	0.20				
ROYAL OAK AVE	CAMERON AVE	RIVERSIDE RD	0.24	0.48				
RYAN AVE	PINEHURST AVE	PINEHURST AVE	0.13	0.26	4/20/21			
SADLER AVE	LAKEVIEW AVE	LUNDY AVE	0.23	0.46				
SALEM CT	CUL DE SAC N	CUL DE SAC S	0.08	0.16				
SALISBURY RD	CONDUIT RD	HUNTINGTON RD	0.20	0.40				
SANCHO ALLEY	HANOVER AVE	CARROLL AVE						
SCHOOL AVE	CONDUIT RD	PERTHSHIRE LA	0.14	0.28				
SEATON DR	NOTTINGHAM DR	CUL DE SAC	0.15	0.30	6/28/21			
SHADE TREE CT	SHADE TREE DR	CUL DE SAC	0.04	0.08				
SHADE TREE DR	LONGHORN DR	CUL DE SAC	0.16	0.32				
SHERWOOD DR	BOULEVARD	FAIRMOUNT DR	0.69	1.38	5/18/21	6/29/21		
SHUFORD AVE	BOULEVARD	WESTOVER AVE	0.24	0.48				
SNEAD AVE	JAMES AVE	SPRING DR	0.48	0.96				
SOUTH AVE	DEAD END W	DEAD END E	0.21	0.42				
SOUTHPARK BLVD	ROSLYN RD E	TEMPLE AVE	0.94	1.88	6/23/21			
SPRING DR	BROOKEDGE DR	DEAD END W	0.17	0.34				
SPRINGDALE AVE	LAKE AVE	SHERWOOD DR	0.35	0.70	6/9/21			
SPRUCE AVE	YEW AVE	HEMLOCK AVE	0.20	0.40				
STRATFORD DR	CONDUIT RD	CUL DE SAC	0.41	0.82				
STUART AVE	CONDUIT RD	JACKSON AVE	0.19	0.38				
SUFFOLK AVE	LAFAYETTE AVE	BOULEVARD	0.26	0.52				
SWIFT CREEK LA	BILTMORE DR	NCL	0.35	0.70	10/1/20	6/1/21		
TASWELL AVE	WOODLAWN AVE	CEDAR LA	0.26	0.52				

Street Sweeping - FY 2021

Street Name	From	To	Center Lane Miles	Lane Miles Swept	Date Swept #1	Date Swept #2	Date Swept #3	Date Swept #4
TAYLOR LA	BERKSHIRE LA	END PAVEMENT	0.07	0.14				
TEMPLE AVE	BOULEVARD	CITY LIMITS	1.85	7.40	10/1/20	5/26/21		
TEMPLE AVE N	TEMPLE AVE	RIDGE RD	0.08	0.16	9/29/20			
TEMPLE AVE S	TEMPLE AVE	RIDGE RD	0.04	0.08	9/29/20			
TEMPLE LAKE DR	DIMMOCK PKWY	DIMMOCK PKWY	0.43	0.86	6/23/21			
TUDOR RD	NOTTINGHAM DR	NCL	0.16	0.32				
TUSSING LN	LYONS AVE	WESTOVER AVE	0.23	0.46				
VALLEY RD N	BROOKEDGE DR	VALLEY RD S	0.15	0.30				
VALLEY RD S	BOULEVARD	VALLEY RD N	0.05	0.10				
VALLEY RD S	VALLEY RD N	VALLEY RD N	0.03	0.06				
VALLEY RD S	VALLEY RD N	BROOKEDGE DR	0.09	0.18				
VANCE AVE	TASWELL AVE	LAKEVIEW AVE	0.13	0.26				
VERBOV AVE	LUNDY AVE	LAKEVIEW AVE	0.21	0.42				
VIRGINIA AVE	HAMILTON AVE	WASHINGTON AVE	0.24	0.48				
WAKEFIELD AVE	BRANDERS BRIDGE RD	BRAME AVE	0.44	0.88				
WALNUT AVE	SNEAD AVE	END PAVEMENT	0.44	0.88				
WASHINGTON AVE	BRISTOL AVE	BOULEVARD	0.49	0.98				
WATERCRESS CT	HERON RUN DR	DEAD END	0.18	0.36				
WATERFRONT DR	DUNSTON POINT PKY	DEAD END	0.86	1.72	12/21/20			
WELESLEY LA	WINDMERE DR	BERKSHIRE LA	0.05	0.10				
WELLINGTON RD	CONDUIT RD	CUL DE SAC	0.38	0.76	4/12/21			
WEST AVE	YEW AVE	MOORE AVE	0.16	0.32				
WESTOVER AVE	WEST CITY LIMITS	CONDUIT RD	1.04	2.08	9/24/20	5/19/21		
WHIPPORWILL CT	CONDUIT RD	DEAD END	0.05	0.10				
WHITE BANK RD	CONDUIT RD	DEAD END	0.22	0.44				
WHITE OAK CT	CHARLES AVE	CUL DE SAC	0.13	0.26				
WHITE SAND CT	HERON RUN DR	HERON RUN	0.15	0.30				
WHITEHALL DR	RIVEROAKS DR	BREEZY HILL DR	0.17	0.34				
WHITESTONE CT	PINECLIFFE DR	END	0.04	0.08				
WHITESTONE PL	PINECLIFFE DR	END	0.04	0.08				
WICKER DR	CONDUIT RD	COURTLAND DR	0.16	0.32				
WILDWOOD AVE	ELMWOOD DR	CUL DE SAC	0.12	0.24				
WILKSHIRE CT	PERTHSHIRE LA	CUL DE SAC	0.11	0.22				
WILLIAMSBURG RD	CONDUIT RD	HOLLY AVE	0.17	0.34				
WILSON AVE	CONDUIT RD	WASHINGTON AVE	0.10	0.20	5/20/21			
WINDMERE DR	CONDUIT RD	CUL DE SAC	0.56	1.12				
WINDSOR AVE	BOULEVARD	BATTERY PL	0.20	0.40				
WINSTON AVE	LAKEWOOD DR	FAIRMONT DR	0.44	0.88	6/28/21			
WOODBRIDGE RD	WATERFRONT DR	MOOSE LA	0.15	0.30	12/21/20			
WOODCLIFFE DR	BRIARCLIFFE DR	END	0.07	0.14				

Street Sweeping - FY 2021

Street Name	From	To	Center Lane Miles	Lane Miles Swept	Date Swept #1	Date Swept #2	Date Swept #3	Date Swept #4
WOODLAWN AVE	ELLERSLIE AVE W	SOUTH DEAD END	0.45	0.90				
WOODSIDE AVE	YACHT BASIN DR	ELMWOOD DR	0.12	0.24				
WOODSIDE AVE	ELMWOOD DR	DEAD END	0.01	0.02				
WRIGHT AVE	BOULEVARD	CUL DE SAC	0.40	0.80				
YACHT BASIN DR	CONDUIT RD	WILDWOOD AVE	0.56	1.12				
YEW AVE	BOULEVARD	DEAD END	0.19	0.38				
YORKSHIRE RD	CONDUIT RD	HOLLY AVE	0.19	0.38				
YORKTOWN DR	FRANKLIN AVE	CONCORD AVE	0.16	0.32	4/13/21			
Total Lane Miles Swept	**100.0**							
****NOTE** Goal of 200 LM swept not met due to the following. Sweeper problems in August 2020. Vacancies in workforce & dealing with Covid-19 pandemic.**								

Sweeping Debris Removed
FY - 2021

Street Sweeping Debris Removed 2019-2020	
Date	**Cubic Yards**
July - 2020	
August - 2020	
September - 2020	108.0
October - 2020	16.0
November - 2020	
December - 2020	12.0
January - 2021	
February - 2021	
March - 2021	
April - 2021	72.0
May - 2021	132.0
June - 2021	164.0
Total	**504.0**
Leaf Removal 2021-22	**2,418**
Total Debris-Cubic Yards	**3,218**

Estimated

Date	Oil-GAL	Antifreeze-GAL	Cat 1 Materials-GAL	Oil-Removed	Antifreeze-Removed	Cat 1 Removed	Cost
July - 2020	63.0	5.0	60.0				
August - 2020	53.5	3.0	27.5	441		3-55 gallon barrels	795.09
September - 2020	25.5	10.5	34.0				
October - 2020	15.5	19.0	41.5				
November - 2020	35.5	2.0	26.0				
December - 2020	16.0	0.0	25.0				
January - 2021	37.5	1.5	32.0	262		1-55 gallon barrel	198.64
February - 2021	13.0	0.0	18.0				
March - 2021	33.0	10.5	21.0				
April - 2021	52.5	10.0	52.5			1-55 gallon barrel	198.64
May - 2021	44.0	6.5	43.0				
June - 2021	43.0	7.0	55.0				
Totals	**432.00**	**75.00**	**435.50**	**703.00**	**0.00**	**275.00**	**1,192.37**

Brush Removal & Cleanup		
Date	**Cuyd**	**Cost**
07/21/20	1,020	4,518.60
01/15/21	1,105	4,950.40
04/06/21	850.0	3,808.00
Total - Grinding		**13,277.00**

Attendent Cost	
Salary	9,152.00
FICA	700.13
PT - Cost	**9,852.13**
Grand Total	**$ 24,321.50**

Date	Salt-Tons	Sand & Salt -Tons	Mag Chloride-Bag
1/27 thru 1/28/21	27.2		
1/30/21 thru 2/1/21	115.6		11
2/6/21 thru 2/7/21	20.4	7.9	2
2/1121 thru 2/14/21	125.8	225.2	16
2/18/21 thru 2/19/21	61.2	71.1	6
Totals	**350.2**	**304.2**	**35**
Sand & Salt Mix = 2 parts sand & 1 part salt			

1500 - Clean Catch Basin 20-21

Run Date: 08/13/2021 10:49 AM

Reference No	Request Address One	Action Taken	Code Number	Work Completion Date
W048123-073120	Boulevard	At train overpass removed car parts and trash from 2 curb inlet. Collected 1/4 cubic yards of debris	1500 - Clean Catch Basin	7/9/2020
W048124-073120	1314 Canterbury Ln	Removed sticks and silt from a Curb Inlet	1500 - Clean Catch Basin	7/1/2020
W048125-073120	E. Westover @ Hamilton Aves	Removed grass clippings and silt from a curb inlet	1500 - Clean Catch Basin	7/1/2020
W048126-073120	E. Westover @ Lafayette Aves	Removed sticks, grass and trash from a Curb Inlet	1500 - Clean Catch Basin	7/1/2020
W048127-073120	Conduit Rd @ Ivey Ave	Removed sticks, silt and grass clippings from a Catch Basin. Collected 2 cubic yards of debris for the day	1500 - Clean Catch Basin	7/1/2020
W048128-073120	318 Jefferson Ave	Removed trash and sticks from a curb inlet	1500 - Clean Catch Basin	7/2/2020
W048133-073120	121 Lakeside Dr	Removed silt and pine cones from Catch Basin	1500 - Clean Catch Basin	7/13/2020
W048134-073120	214 Moore Ave	Removed trash and silt from a curb inlet	1500 - Clean Catch Basin	7/13/2020
W048135-073120	508 Compton Rd	Removed trash and sticks form Curb Inlet	1500 - Clean Catch Basin	7/13/2020
W048136-073120	2529 Bent Oaks Dr	Removed trash and sticks from a Curb Inlet. Collected 1/2 cubic yards of debris for the day	1500 - Clean Catch Basin	7/13/2020
W048137-073120	513 Old Town Dr	Removed sticks, trash and silt from a Curb Inlet	1500 - Clean Catch Basin	7/15/2020
W048138-073120	1303 Yacht Basin Dr	Removed car parts from a Curb Inlet	1500 - Clean Catch Basin	7/15/2020
W048139-073120	1212 Dana Ln	Removed sticks and trash from a Curb Inlet	1500 - Clean Catch Basin	7/15/2020
W048140-073120	233 Huntington Rd	Removed trash and silt from 2 curb inlet. Collected 1/2 cubic yards of debris/15/20 for the day	1500 - Clean Catch Basin	7/15/2020
W048142-073120	114 Chesterfield Ave	Removed silt and trash from a Catch Basin	1500 - Clean Catch Basin	7/22/2020
W048143-073120	Shuford Ave @ Boulevard	Removed silt and trash from a Catch Basin	1500 - Clean Catch Basin	7/22/2020
W048144-073120	Shuford Ave @ Boulevard	Removed silt and trash from a Catch Basin	1500 - Clean Catch Basin	7/22/2020
W048145-073120	209 E. Westover Ave	Removed trash and grass from a Catch Basin	1500 - Clean Catch Basin	7/22/2020

Reference No	Request Address One	Action Taken	Code Number	Work Completion Date
W048146-073120	1907 Wakefield Ave.	Removed trash and silt from a Catch Basin	1500 - Clean Catch Basin	7/22/2020
W048147-073120	Pickwick Ave.	Removed silt, gravel and trash from a Catch Basin in the alley. Collected 1/2 cubic yards of debris	1500 - Clean Catch Basin	7/22/2020
W048275-080720	112 Chesterfield Avenue	Used shovel to remove pine tags from grate top catch basin	1500 - Clean Catch Basin	8/7/2020
W048350-081720	101 Waterfront Dr.	Used pitch fork to remove pine needles and pine cones from grate top catch basin. Collected a 5 gallon bucket of debris	1500 - Clean Catch Basin	8/21/2020
W048426-082420	storm drains from 100 to 400 blocks of E. Westover Ave	Used sweeper to clean gutters and drains full of trash and grass clippings. Swept from Boulevard to Hamilton both sides collected 2 cubic yards of debris	1500 - Clean Catch Basin	8/25/2020
W048619-091120	City Wide	114 Chesterfield, 654 Boulevard, 121 Lakeside Dr, 1000 Forest View Dr, Suffolk at Boulevard, Chesterfield at Marvin, Hamilton at Westover, Fisher at Westover	1500 - Clean Catch Basin	8/14/2020
W048635-091120	City Wide	1000 Forest View Dr, 1023 Forest View Dr, Sherwood Dr behind Refresh, Colonial Apartments, Behind Southpark Carpet off Boulevard, Westover at Floral.	1500 - Clean Catch Basin	8/6/2020
W048657-091520	City Wide	1314 Canterbury Ln removed trash and silt from a Curb Inlet, 121 Lakeside Dr removed silt, pine needles and trash from a catch basin, A Ave at Boulevard removed trash and silt from a catch basin, Shuford at Boulevard removed trash and silt from a catch basin. collected 1/4 cubic yard of debris	1500 - Clean Catch Basin	7/29/2020
W048661-091520	City Wide	E. Westover at Hamilton removed trash and grass clippings from 2 catch basins. Boulevard at train tressel removed trash, silt and car parts from 2 curb inlets, 513 Old Town Dr removed trash and sticks form a curb inlet. Collected 1/4 cubic yards of debris.	1500 - Clean Catch Basin	7/31/2020
W048662-091520	City Wide	Cleaned the following storm drains: Boulevard at Valley Rd, removed cardboard boxes and a hub cap. 901 Lakeview Ave removed trash and pine needles.	1500 - Clean Catch Basin	8/4/2020
W048664-091520	115 Dupuy Ave.	Flushed 2 curb inlets across from above address, removed 1 cubic yards of trash, silt and asphalt	1500 - Clean Catch Basin	8/6/2020

Reference No	Request Address One	Action Taken	Code Number	Work Completion Date
W048679-091520	1314 Canterbury Ln	Removed leave, pine needles and grass clippings from a Curb Inlet	1500 - Clean Catch Basin	8/28/2020
W048680-091520	318 Jefferson Ave.	Removed trash from a curb inlet	1500 - Clean Catch Basin	8/28/2020
W048808-092320	City Wide	Cleaned the following storm drains: 654 Boulevard, 114 Chesterfield, 121 Lakeside Dr, 1000 Forest View Dr, Suffolk at Boulevard, 3 on Marvin at Chesterfield, 2209 - 1907 Wakefield, 3 on Hamilton near Fischer.	1500 - Clean Catch Basin	9/17/2020
W048934-100820	City Wide	Pickwick Ave alley removed trash and silt from a catch Basin, 318 Jefferson Ave removed trash and silt from a curb inlet, E Westover at Conduit Rd removed trash and silt from a Curb Inlet, E Westover at Hamilton removed grass clippings, trash and silt from 2 catch basins. Collected 1/4 cubic yards of debris	1500 - Clean Catch Basin	9/8/2020
W048935-100820	Boulevard at A Ave	Removed trash and silt from a Catch Basin	1500 - Clean Catch Basin	9/9/2020
W048936-100820	2207 Wakefield Ave.	Removed trash and grass clippings from a Catch basin	1500 - Clean Catch Basin	9/9/2020
W048937-100820	Shuford Ave at Boulevard	Removed trash from a catch basin. Collected 1/4 cubic yards of debris for the day	1500 - Clean Catch Basin	9/9/2020
W048938-100820	318 Jefferson Ave.	Removed trash and sticks from a curb inlet	1500 - Clean Catch Basin	9/10/2020
W048939-100820	Boulevard at A Ave	Removed silt, pine needles and pinecones from a catch basin.	1500 - Clean Catch Basin	9/10/2020
W048940-100820	121 Lakeside Dr.	Removed silt, pine needles and pinecones from a catch basin. Collected 1/4 cubic yards of debris for the day	1500 - Clean Catch Basin	9/10/2020
W048941-100820	Boulevard at A Ave	Removed trash, gravel and silt from a curb inlet.	1500 - Clean Catch Basin	9/10/2020
W048942-100820	1314 Canterbury Ln.	Removed leaves and sticks from a curb inlet.	1500 - Clean Catch Basin	9/11/2020
W048943-100820	Lyons Ave at Boulevard	Removed car parts from a curb Inlet	1500 - Clean Catch Basin	9/11/2020
W048944-100820	Boulevard	Removed car parts and trash from 2 curb Inlets at train trestle.	1500 - Clean Catch Basin	9/11/2020
W048945-100820	Branders Bridge Rd at Wakefield Ave.	Removed trash and grass clippings from a Curb Inlet. Collected 1/4 cubic yards of debris for the day	1500 - Clean Catch Basin	9/11/2020
W048947-100820	318 Jefferson Ave.	Removed trash and grass clippings from a Curb Inlet	1500 - Clean Catch Basin	9/18/2020
W048948-100820	Shuford Ave at Boulevard	Removed trash from a catch basin	1500 - Clean Catch Basin	9/18/2020

Reference No	Request Address One	Action Taken	Code Number	Work Completion Date
W048949-100820	Boulevard at A Ave	Removed trash and silt from a Catch Basin	1500 - Clean Catch Basin	9/18/2020
W048950-100820	114 Chesterfield Ave.	Removed silt, pine needles and pinecones from a Catch Basin. Collected 1/4 cubic yards for the day	1500 - Clean Catch Basin	9/18/2020
W048953-100820	114 Chesterfield Ave.	Removed pine needles from a Catch Basin	1500 - Clean Catch Basin	9/25/2020
W048954-100820	111 Lakeside Dr.	Removed pine needles and pinecones from a catch basin	1500 - Clean Catch Basin	9/25/2020
W048955-100820	200 Duouy Ave	Removed sticks, grass clippings and trash from a catch basin in backyard	1500 - Clean Catch Basin	9/25/2020
W048956-100820	233 Huntington Rd.	Removed trash and gravel from 2 curb inlets. Collected 1/4 cubic yards of debris for the day	1500 - Clean Catch Basin	9/25/2020
W048957-100820	500 Southpard Blvd	Removed trash from a Curb inlet	1500 - Clean Catch Basin	9/28/2020
W048962-100820	107 Waterfront Dr	Removed leaves and grass clippings from a catch basin.	1500 - Clean Catch Basin	9/20/2020
W048963-100820	Boulevard at A Ave.	Removed trash and silt from a catch basin	1500 - Clean Catch Basin	9/20/2020
W048964-100820	2207 Wakefield Ave	removed trash and grass clippings from a catch basin	1500 - Clean Catch Basin	9/20/2020
W048965-100820	Shuford Ave at Boulevard	Removed trash from a catch basin Collected 1/4 cubic yards of debris for the day	1500 - Clean Catch Basin	9/20/2020
W049173-110320	City Wide	Cleaned/checked the following storm drains: Forest View Dr at Brookhill Ave, Forest View Dr at Boulevard, Behind Southpark Carpet off the Boulevard, 114 Chesterfield Ave.	1500 - Clean Catch Basin	10/19/2020
W049195-110320	City Wide	Cleaned the following storm drains: 1000 Forest View Dr, 1023 Forest View Dr, Sherwood Dr behind Refresh, Colonial Apartments, Behind Southpark Carpet off Boulevard, Westover at Colonial Aves, Westover at Hamilton Aves, 209 Westover Ave	1500 - Clean Catch Basin	10/29/2020
W049205-110320	City Wide	114 Chesterfield, 654 Boulevard, 1000 Forest View Dr, Behind Southpark Carpet off the Boulevard, 3 on Westover from Fischer to Hamilton, 3 on Marvin at Chesterfield. Pickwick Ave Alley, Suffolk at Boulevard	1500 - Clean Catch Basin	9/29/2020

Reference No	Request Address One	Action Taken	Code Number	Work Completion Date
W049208-110320	City Wide	114 Chesterfield, 654 Boulevard, 1000 Forest View Dr, Behind Southpark Carpet off the Boulevard, 3 on Westover from Fischer to Hamilton, 3 on Marvin at Chesterfield. Pickwick Ave Alley, Suffolk at Boulevard	1500 - Clean Catch Basin	10/16/2020
W049213-110320	1314 Canterbury Ln.	Removed leaves, pine needles and pinecones from a Curb Inlet	1500 - Clean Catch Basin	9/29/2020
W049214-110320	318 Jefferson Ave.	removed trash, silt and sticks from a Curb Inlet	1500 - Clean Catch Basin	9/29/2020
W049215-110320	E Westover Ave at Conduit Rd	removed trash, sticks and silt form 2 curb inlets. Collected 1/4 cubic yards of debris for the day	1500 - Clean Catch Basin	9/29/2020
W049216-110320	318 Jefferson Ave.	Removed trash and silt from a curb inlet	1500 - Clean Catch Basin	9/30/2020
W049217-110320	318 Jefferson Ave.	Removed trash and silt from a curb inlet	1500 - Clean Catch Basin	9/30/2020
W049218-110320	Shuford at Boulevard	Removed trash and cardboard from a Catch Basin	1500 - Clean Catch Basin	9/30/2020
W049219-110320	A Ave at Boulevard	Removed trash, silt and gravel from Catch Basin	1500 - Clean Catch Basin	9/30/2020
W049220-110320	513 Old Town Dr.	Removed sticks, silt and trash from a Curb Inlet. Collected 1/2 cubic yard of debris for the day	1500 - Clean Catch Basin	9/30/2020
W049222-110320	Pickwick Ave	Alley removed silt and trash from a Catch Basin	1500 - Clean Catch Basin	10/2/2020
W049223-110320	A Ave at Boulevard	Removed silt and trash from a Catch Basin	1500 - Clean Catch Basin	10/2/2020
W049224-110320	500 Southpark Blvd	Removed trash and cardboard from a curb inlet.	1500 - Clean Catch Basin	10/2/2020
W049225-110320	1907 Wakefield Ave.	Removed trash and gravel from a Catch Basin	1500 - Clean Catch Basin	10/2/2020
W049226-110320	233 Huntington Rd.	Removed trash and cardboard from 2 curb inlets. Collected 1/2 cubic yard of debris for the day	1500 - Clean Catch Basin	10/2/2020
W049233-110420	513 Old Town Dr.	Removed sticks and trash from a Curb Inlet	1500 - Clean Catch Basin	10/19/2020
W049234-110420	101 Flintlock Dr.	Removed sticks and leaves from a Curb Inlet	1500 - Clean Catch Basin	10/19/2020
W049235-110420	2207 Wakefield Ave.	Removed silt and trash from a Catch Basin. Collected 1/4 cubic yard of debris for the day	1500 - Clean Catch Basin	10/19/2020
W049242-110420	Branders Bridge Rd at Wakefield Ave	Removed trash and silt from a Curb Inlet	1500 - Clean Catch Basin	10/26/2020
W049243-110420	Shuford Ave at Boulevard	removed trash and silt from a catch basin	1500 - Clean Catch Basin	10/26/2020

Reference No	Request Address One	Action Taken	Code Number	Work Completion Date
W049244-110420	209 E Westover Ave	Removed leaves and silt from a catch basin. Collected 1/4 cubic yard of debris for the day	1500 - Clean Catch Basin	10/26/2020
W049246-110420	214 Moore Ave.	removed trash and silt from a Curb Inlet	1500 - Clean Catch Basin	10/27/2020
W049247-110420	215 Hillcrest Ave.	Removed trash, silt and sticks from catch basin	1500 - Clean Catch Basin	10/27/2020
W049248-110420	508 Compton Rd	Removed leaves, sticks and silt from a Curb Inlet. Collected 1/4 cubic yards of debris for the day	1500 - Clean Catch Basin	10/27/2020
W049249-110420	114 Chesterfield Ave.	Removed silt, pine needles and pinecones from a Catch Basin	1500 - Clean Catch Basin	10/28/2020
W049250-110420	205 Plumtree Ave.	Removed trash and silt form a Curb Inlet. Collected 1/4 cubic yard of debris for the day	1500 - Clean Catch Basin	10/28/2020
W049253-110420	302 Hamilton Ave.	Removed sticks and silt from a Curb Inlet	1500 - Clean Catch Basin	10/30/2020
W049254-110420	127 Lafayette Ave.	Removed silt and trash from a Curb Inlet	1500 - Clean Catch Basin	10/30/2020
W049255-110420	Pickwick Ave.	Removed leaves and silt from a catch basin in Alley. Collected 1/4 cubic yards of debris for the day	1500 - Clean Catch Basin	10/30/2020
W049387-112020	209 E. Westover Ave	Used rakes to remove leaves. Leaf truck will collect leaves Area 3	1500 - Clean Catch Basin	11/23/2020
W049388-112020	309 E. Westover Ave	Used rakes to remove leaves, leaf truck will collect Area 3	1500 - Clean Catch Basin	11/23/2020
W049508-120720	114 Chesterfield Ave.	Removed trash, silt and pine needles from a Catch Basin	1500 - Clean Catch Basin	11/3/2020
W049509-120720	201 Dupuy Ave.	Removed trash and pine needles from a Curb Inlet	1500 - Clean Catch Basin	11/4/2020
W049510-120720	503 Braxton Ave.	Removed trash and sticks from curb inlet	1500 - Clean Catch Basin	11/4/2020
W049511-120720	Pickwick Ave.	Removed trash and silt from catch basin in alley	1500 - Clean Catch Basin	11/4/2020
W049512-120720	Fairfax Ave at Boulevard	Removed car parts from a Curb Inlet	1500 - Clean Catch Basin	11/5/2020
W049513-120720	Shuford Ave Boulevard	Removed trash and silt from a Catch Basin	1500 - Clean Catch Basin	11/5/2020
W049515-120720	701 Forest View Dr.	Removed silt and traps from a manhole and catch basin grate top.	1500 - Clean Catch Basin	11/6/2020
W049519-120720	318 Jefferson Ave.	Removed trash, sticks and leaves from a curb inlet	1500 - Clean Catch Basin	11/18/2020
W049520-120720	1314 Canterbury Ln	Removed leaves and sticks from a Curb Inlet	1500 - Clean Catch Basin	11/18/2020

Reference No	Request Address One	Action Taken	Code Number	Work Completion Date
W049521-120720	233 Huntington Rd.	Removed trash, leaves and sticks from 2 curb inlets.	1500 - Clean Catch Basin	11/19/2020
W049522-120720	822 Old Town Dr.	Removed trash, silt and car parts from a Curb inlet	1500 - Clean Catch Basin	11/19/2020
W049524-120720	2020 Orange Ave.	Removed silt and leaves from a catch basin	1500 - Clean Catch Basin	11/20/2020
W049525-120720	3204 Dale Ave.	Removed trash, silt and wood from a curb inlet	1500 - Clean Catch Basin	11/20/2020
W049530-120720	Sherwood Hills	Cleared basins of leaves in area 2 Sherwood Hills	1500 - Clean Catch Basin	12/1/2020
W049531-120720	Dale Ave.	Cleared basins of leaves in Area 2 North Elementary School Avea.	1500 - Clean Catch Basin	12/2/2020
W049569-121020	City Wide	654 Boulevard, 121 Lakeside Dr, Westover 3 inlets, 1000 Forest View Dr, Suffolk at Boulevard, Pickwick Ave Alley, 1907 and 2209 Wakefield, 3 at Marvin and Chesterfield	1500 - Clean Catch Basin	12/7/2020
W049608-121520	Forest View Dr at Brookhill Ave	Used leaf rake to remove leaves from 5 grate tops in front of mouth of curb inlet, water was still able to drain. Put pile to side leaf truck will vacuum up, in Area 2	1500 - Clean Catch Basin	12/15/2020
W049640-121820	Covington Rd.	Used backhoe, strap, shovels and pitch forks to lift lid off, removed 1 cubic yards of silt, trash and leaves.	1500 - Clean Catch Basin	12/28/2020
W049672-122820	209 and 309 E Westover Ave.	Cleaned storm drains.	1500 - Clean Catch Basin	12/11/2020
W049726-010421	248 COMSTOCK DR	On 1/5/21 Investigated area found lots of tree branches and leaves piled at back of property not allowing water to drain. On 1/6/21 Used rakes and pitchfork to open a small channel for water to drain, removed sticks and leaves. Will go back when ground dries up to remove more debris with backhoe On 4/7/21 Used backhoe, dump truck and pitch fork to remove 3 cubic yards of sticks, leaves and gum balls causing issue. * Areas was to wet to do anything when first called in.	1500 - Clean Catch Basin	4/7/2021
W049832-011921	City Wide	318 Jefferson Ave-Curb Inlet, 114 Chesterfield Ave - Catch Basin, 1314 Canterbury Ln-Curb Inlet. Leaf truck will collect leaves	1500 - Clean Catch Basin	12/8/2020
W049833-011921	City Wide	89 Sherwood Dr-Catch Basin, 1002 Forest View Dr-Curb Inlet. Leaf truck will collect leaves.	1500 - Clean Catch Basin	12/9/2020

Reference No	Request Address One	Action Taken	Code Number	Work Completion Date
W049835-011921	City Wide	Collected 1/4 cubic yards of debris from: 513 Old Town Dr - removed sticks and leaves from a curb inlet, 1107 Ciffton Dr removed leaves and trash from a Curb Inlet, 300 Comstock Dr removed leaves and sticks from a Curb Inlet.	1500 - Clean Catch Basin	12/11/2020
W049836-011921	A Ave at Boulevard	Removed leaves and trash from a Catch Basin	1500 - Clean Catch Basin	12/14/2020
W049837-011921	Shuford Ave at Boulevard	removed trash from a Catch Basin	1500 - Clean Catch Basin	12/14/2020
W049840-011921	City Wide	Collected 1 cubic yards of debris from the following locations: 114 Chesterfield Ave removed pine needles from a Catch Basin, 1314 Canterbury Ln removed leaves and sticks from a Curb Inlet, 500 Southpark Blvd removed trash and car parts from a Curb Inlet, 233 Huntington Rd removed 3 bags of household trash from 2 Curb Inlets.	1500 - Clean Catch Basin	12/15/2020
W049841-011921	City Wide	Collected 1/2 cubic yards of debris from the following locations: 702 Keswick Rd removed trash, leaves and silt from a Curb Inlet, 1305 Yacht Basin Dr removed leaves and sticks from a Curb Inlet, 1116 Oakwood Dr removed leavss, sticks and silt from a Crub Inlet	1500 - Clean Catch Basin	12/18/2020
W049842-011921	City Wide	Collected 1/4 cubic yards of debris from the following locations: 318 Jefferson Ave removed leaves, trash and sticks from a Curb Inlet, 313 Walnut Ave removed trash and silt from a Curb Inlet, 327 Ridge Rd removed leaves, trash and silt from a Catch Basin	1500 - Clean Catch Basin	12/21/2020
W049843-011921	City Wide	Cleared the following basins of leaves: 1907 Wakefield Ave - Catch Basin, 307 Highland Ave - Curb Inlet, 406 Dick Ewell Ave - Catch Basin, 1013 Kensington Ave - Curb Inlet, 1012 Floral Ave - Catch Basin. Leaf truck will collect leaves.	1500 - Clean Catch Basin	12/22/2020
W049844-011921	107 Chesterfield Ave.	Cleared Catch Basin of leaves, leaf truck will pick up	1500 - Clean Catch Basin	12/23/2020
W049845-011921	100 Blk Suffolk Ave.	Cleared Catch Basin of leaves, leaf truck will pick up	1500 - Clean Catch Basin	12/23/2020
W049913-012121	107 Chesterfield Ave.	Cleared leaves from a Catch Basin	1500 - Clean Catch Basin	12/23/2020
W049914-012121	100 Blk Suffork Ave.	Cleared leaves from a Catch Basin	1500 - Clean Catch Basin	12/23/2020
W049915-012121	Shuford Ave at Boulevard	Removed trash and silt from a catch basin	1500 - Clean Catch Basin	1/8/2021

Reference No	Request Address One	Action Taken	Code Number	Work Completion Date
W049916-012121	A Ave at Boulevard	Removed trash and silt from a catch basin	1500 - Clean Catch Basin	1/8/2021
W049917-012121	299 Danville Ave.	Removed trash, leaves and silt from a catch basin. Collected 1/4 cubic yards of debris for the day.	1500 - Clean Catch Basin	1/8/2021
W049918-012121	500 Southpark Blvd	Removed trash and car parts from a curb inlet	1500 - Clean Catch Basin	1/19/2021
W049919-012121	131 Jennick Dr.	Removed a dead goose and trash from a curb inlet	1500 - Clean Catch Basin	1/19/2021
W049920-012121	118 Marvin Ave.	Removed sand, grass, dirt and gravel from a curb inlet and gutters. Collected 2 cubic yards of debris for the day	1500 - Clean Catch Basin	1/19/2021
W050159-022421	318 Jefferson Ave.	Removed trash, silt and sticks form a curb inlet.	1500 - Clean Catch Basin	2/2/2021
W050160-022421	513 Old Town Dr.	Removed leaves and sticks form a curb inlet.	1500 - Clean Catch Basin	2/2/2021
W050161-022421	Shuford Ave at Boulevard	Removed trash and silt from a catch basin. Collected 1/4 cubic yards of debris for the day	1500 - Clean Catch Basin	2/2/2021
W050163-022421	513 Old Town Dr.	Removed trash, leaves and sticks from a curb inlet.	1500 - Clean Catch Basin	2/4/2021
W050172-022421	A Ave at Boulevard	Removed trash and silt from a Catch Basin	1500 - Clean Catch Basin	2/8/2021
W050173-022421	233 Huntington Rd.	Removed trash and sticks from 2 curb Inlets. Collected 1/4 cubic yards of debris for the day	1500 - Clean Catch Basin	2/8/2021
W050229-030121	Westover at Shuford Aves	Used sewer spoon to unstop drain removed sticks and trash water went down	1500 - Clean Catch Basin	3/1/2021
W050245-030121	513 Old Town Drive	Used shovel, pitch fork and hoe fork to remove 1/2 cubic yards of leaves, sticks and trash from a Curb inlet	1500 - Clean Catch Basin	3/8/2021
W050304-030921	Brian Ln	Cleaned storm drain	1500 - Clean Catch Basin	2/2/2021
W050340-031021	City Wide	Cleaned the following storm drains: 2209 - 1907 Wakefield, 3 at Marvin and Chesterfield, Courthouse Parking Lot, Hamilton City Parking Lot, Pickwick Ave Alley, Suffolk at Boulevard, Fisher at Westover, Hamilton at Westover, 121 Lakeside Dr, 1000 Forest View Dr, 654 Boulevard and 114 Chesterfield	1500 - Clean Catch Basin	2/9/2021
W050343-031021	500 Southpark Blvd	Removed trash and car parts from a Curb Inlet	1500 - Clean Catch Basin	1/19/2021
W050344-031021	131 Jennick Dr.	Removed trash and a dead goose from a Curb Inl	1500 - Clean Catch Basin	1/19/2021

Reference No	Request Address One	Action Taken	Code Number	Work Completion Date
W050345-031021	318 Jefferson Ave.	Removed trash, leaves and dirt from a Curb Inl	1500 - Clean Catch Basin	1/19/2021
W050346-031021	118 Marvin Ave.	Removed sticks, sand, grass, dirt and gravel from Curb Inlet and Gutter.	1500 - Clean Catch Basin	1/19/2021
W050426-032421	Charles Ave.	Removed black trash bag with hoe fork	1500 - Clean Catch Basin	3/24/2021
W050601-041221	City Wide	Shufford at E. Westover Aves Removed trash and sticks from a curb inlet, A Ave at Boulevard removed trash and silt from a catch basin. 500 South park Boulevard removed trash and silt from a curb inlet. 233 Huntington Rd removed stick and silt from 2 curb inlet. Collected 1/2 cubic yard of debrsi.	1500 - Clean Catch Basin	3/9/2021
W050606-041221	Shufford at E Westover Aves	Removed trash and sticks from a curb inlet	1500 - Clean Catch Basin	3/1/2021
W050607-041221	209 E Westover Ave.	removed trash and silt from a catch basin. Collected 1/4 cubic yards of debris for the day	1500 - Clean Catch Basin	3/1/2021
W050611-041221	1314 Canterbury Ln	Removed sticks, leaves and silt from a curb inlet	1500 - Clean Catch Basin	3/8/2021
W050612-041221	Conduit Rd at Ivey Ave.	Removed stick, leaves and trash from a Catch Basin. Collected 1/4 cubic yard of debris for the day	1500 - Clean Catch Basin	3/8/2021
W050667-041621	City Wide	Cleaned the following storm drains: 114 Chesterfield, Chesterfield at Marvin, 121 Lakeside Dr, 3 on Westover at from Fisher to Hampton, Pickwick Ave Alley, 2209 and 1907 Wakefield, 1000 Forest View Dr.	1500 - Clean Catch Basin	3/1/2021
W050694-041621	City Wide	654 Boulevard, 114 Chesterfield, Westover at Fisher at Hamilton and at Lafayette, 2209 and 1907 Wakefield, Pickwick Alley, Suffolk at Boulevard, Behind Southpark Carpet off Boulevard, 1000 Forest View Dr, 121 Lakeside Dr, 3 at Marvin and Chesterfield	1500 - Clean Catch Basin	3/18/2021
W050697-041621	City Wide	2207 and 1907 Wakefield, 114 Chesterfield, 3 at Chesterfield and Marvin, 121 Lakeside Dr, Suffolk at Boulevard, 1000 Forest View Dr, Westover at Fisher at Lafayette and at Hamilton, Pickwick Ave Alley	1500 - Clean Catch Basin	3/24/2021
W050747-042221	1314 Canterbury Ln	Removed sticks and silt from a curb inlet	1500 - Clean Catch Basin	3/25/2021
W050748-042221	Branders Bridge Rd at Wakefield Ave	Removed trash and silt from a curb inlet	1500 - Clean Catch Basin	3/25/2021

Reference No	Request Address One	Action Taken	Code Number	Work Completion Date
W050749-042221	Pickwick Ave.	Removed trash, leaves and gravel from a catch basin in the alley	1500 - Clean Catch Basin	3/25/2021
W050750-042221	E. Westover at Hamilton Aves	Removed trash, leaves and silt from a Catch Basin. Collected 1/2 cubic yard of debris for the day	1500 - Clean Catch Basin	3/25/2021
W050752-042221	209 E. Westover Ave	Removed silt and trash from a catch basin	1500 - Clean Catch Basin	4/1/2021
W050754-042221	311 W. Ellerslie Ave	Removed trash and silt from a curb inlet	1500 - Clean Catch Basin	4/7/2021
W050755-042221	Pickett Ave at Boulevard	Removed car parts and silt from a Curb Inlet	1500 - Clean Catch Basin	4/7/2021
W050756-042221	2207 Wakefield Ave.	Removed trash and silt from a catch basin. Collected 1/4 cubic yard of debris for the day	1500 - Clean Catch Basin	4/7/2021
W050757-042221	214 Moore Ave.	Removed trash and silt from a Curb inlet	1500 - Clean Catch Basin	4/8/2021
W050758-042221	2519 White Oak Ct	Removed trash, sticks and silt from a Curb inlet	1500 - Clean Catch Basin	4/8/2021
W050759-042221	508 Compton Rd.	Removed sticks and silt from a Curb inlet	1500 - Clean Catch Basin	4/8/2021
W050760-042221	723 Old Town Dr.	Removed trash and silt from a Curb inlet	1500 - Clean Catch Basin	4/8/2021
W050761-042221	127 School Ave.	Removed trash and silt from a curb Inlet	1500 - Clean Catch Basin	4/9/2021
W050762-042221	922 Jamestown Rd	Removed trash and silt from a Curb inlet	1500 - Clean Catch Basin	4/9/2021
W050763-042221	621 Pinehurst Ave	Removed car parts, sticks and silt from a Curb inlet. Collected 1/4 cubic yards of debris for the day	1500 - Clean Catch Basin	4/9/2021
W050764-042221	656 Battery Pl	Removed sticks, trash and silt from a Curb inlet	1500 - Clean Catch Basin	4/12/2021
W050765-042221	503 Braxton Ave	Removed trash and silt from a Curb inlet	1500 - Clean Catch Basin	4/12/2021
W050766-042221	208 Crescent Ave	Removed trash and sticks from a Curb inlet	1500 - Clean Catch Basin	4/12/2021
W050767-042221	112 Hanover Ave	Removed a dead raccoon from a curb inlet. Collected 1/4 cubic yard of debris for the day	1500 - Clean Catch Basin	4/12/2021
W050768-042221	217 Dupuy Ave	Removed car parts from a curb inlet	1500 - Clean Catch Basin	4/14/2021
W050769-042221	1313 Canterbury Ln	Removed leaves and sticks from a curb inlet	1500 - Clean Catch Basin	4/14/2021
W050770-042221	812 Keswick Rd.	Removed sticks and silt from a curb inlet	1500 - Clean Catch Basin	4/14/2021
W050771-042221	608 Fairlie Rd	Removed trash and silt from a Curb inlet	1500 - Clean Catch Basin	4/14/2021
W050772-042221	111 Yew Ave	Removed sticks, trash and silt from a Curb inlet	1500 - Clean Catch Basin	4/14/2021
W050773-042221	115 Boykins Ave	Removed trash and silt from a Catch Basin	1500 - Clean Catch Basin	4/15/2021

Reference No	Request Address One	Action Taken	Code Number	Work Completion Date
W050774-042221	922 Forest View Dr.	Removed sticks, leaves and silt from a Curb inlet	1500 - Clean Catch Basin	4/15/2021
W050775-042221	95 Sherwood Dr.	Removed trash and silt from a Catch Basin. Collected 1/2 cubic yard of debris for the day	1500 - Clean Catch Basin	4/15/2021
W050776-042221	500 Southpark Blvd	Removed car parts and silt from a Curb inlet	1500 - Clean Catch Basin	4/19/2021
W050779-042221	114 Chesterfield Ave.	Removed leaves and silt from a catch basin	1500 - Clean Catch Basin	4/19/2021
W050780-042221	228 Washington Ave	Removed trash and silt from a Catch Basin	1500 - Clean Catch Basin	4/19/2021
W050781-042221	526 Roslyn Ave.	Removed trash and silt from a Curb inlet. Collected 1/2 cubic yards of debris for the day	1500 - Clean Catch Basin	4/19/2021
W050785-042221	Ivey Ave at Conduit Rd	Cleaned basins	1500 - Clean Catch Basin	3/29/2021
W050844-042321	City Wide	Westover at Fisher at Hamilton and at Lafayette Aves, 3 at Chesterfield and Marvin, 654 Boulevard, 114 Chesterfield, Pickwick Ave Alley, 2201 and 1907 Wakefield	1500 - Clean Catch Basin	4/1/2021
W051004-051121	City Wide	2209 and 1907 Wakefield, 3 on Marvin and Chesterfield, Pickwick Ave Alley, Suffolk at Boulevard, Hamilton Ave City parking lot, 1000 Forest View Dr, 121 Lakeside Dr, 114 Chesterfield, 3 on Westover at Fischer at Lafayette and at Hamilton	1500 - Clean Catch Basin	4/19/2021
W051082-052121	City Wide	Checked/cleaned the following basins: 654 Boulevard, 1000 Forest View Dr, 121 Lakeside Dr, 3 at Marvin and Chesterfield, 2209 and 1907 Wakefield, 114 Chesterfield, 202 Orchard, 3 on Westover near Hamilton	1500 - Clean Catch Basin	5/10/2021
W051127-052821	Brijadan and Cedar Creek Ln	Removed mulch from basin with shovels	1500 - Clean Catch Basin	6/16/2021
W051131-053021	112 Royal Oak Ave.	Removed 1/4 cubic yard of trash and silt from basin	1500 - Clean Catch Basin	6/16/2021
W051180-060421	113 Royal Oak Ave.	Used shovels to remove 1/4 cubic yards of trash, leaves, silt and grass from the mouth of a Curb Inlet	1500 - Clean Catch Basin	6/7/2021
W051309-061821	713 Conduit Rd.	Used loader and shovel to remove pine needles, pine cones, silt and asphalt from in front of basins in this area. Removed 1 cubic yards of debris. * Debris piled up by asphalt contractor paving.	1500 - Clean Catch Basin	6/18/2021

Reference No	Request Address One	Action Taken	Code Number	Work Completion Date
W051464-070921	City Wide	Collected 1/2 cubic yards of debris from the following: 508 Compton Rd removed trash and silt from a Curb Inlet, 822 Old Town Dr, removed sticks and silt from a Curb Inlet, 1538 Mt Pleasant Dr removed trash and silt from a Curb Inlet, 1215 Yacht Basin Dr removed trash sticks and silt from a Curb Inlet, 1212 Dana Ln removed trash and silt from a Curb inlet.	1500 - Clean Catch Basin	5/4/2021
W051465-070921	City Wide	Collected 1/2 cubic yard of debris from the following: 114 Chesterfield removed trash and silt from a Catch Basin, Pickwick Ave Alley removed trash, leaves and silt from a Curb Inlet, Boulevard at Shuford removed trash and silt from a Catch Basin.	1500 - Clean Catch Basin	5/10/2021
W051468-070921	City Wide	Collected 1/4 cubic yards of debris from the following: 233 Huntington Rd removed trash and sticks from 2 curb inlets, School Ave at Conduit Rd removed trash and silt from a Curb Inlet.	1500 - Clean Catch Basin	5/14/2021
W051472-070921	City Wide	Collected 1/4 cubic yards of debris from the following locations: 2207 Wakefield Ave removed trash and silt from a Catch Basin, 228 Washington Ave removed grass and silt from a Catch Basin, 523 Roslyn Ave removed trash and silt from a Curb Inlet.	1500 - Clean Catch Basin	5/19/2021
W051479-070921	City Wide	Removed 318 Jefferson Ave sticks and trash from a Curb Inlet, 513 Old Town Dr removed sticks, trash and leaves from a Curb Inlet, Sherwood Dr at Refresh Conv store removed pine needles, trash and silt from 2 curb inlets.	1500 - Clean Catch Basin	6/2/2021
W051482-070921	City Wide	Collected 1/4 cubic yards of debris from the following locations: 1314 Canterbury Ln removed sticks and silt from a Curb Inlet, 147 Windsor Ave removed trash and silt from a Curb Inlet, 208 Crescent Ave remove sticks and silt from a Curb Inlet.	1500 - Clean Catch Basin	6/7/2021
W051484-070921	City Wide	Collected 1/4 cubic yards of debris from the following locations: Boulevard at A Ave removed trash and silt from a Catch Basin, Branders Bridge Rd at Wakefield Ave removed trash from a Curb Inlet, 500 Southpark Blvd removed trash and silt from a Curb Inlet.	1500 - Clean Catch Basin	6/8/2021

Reference No	Request Address One	Action Taken	Code Number	Work Completion Date
W051664-080221	City Wide	114 Chesterfield, 202 Orchard, 1000 Forest View Dr, 121 Lakeside Dr, Pickwick Ave Alley, 3 on Westover and 3 on Marvin	1500 - Clean Catch Basin	6/18/2021
W051681-080221	1314 Canterbury Ln.	Removed sticks, pine needles, silt and trash from a Curb Inlt	1500 - Clean Catch Basin	6/15/2021
W051682-080221	318 Jefferson Ave.	Removed sticks and trash from a Curb Inlet	1500 - Clean Catch Basin	6/15/2021
W051683-080221	114 Chesterfield Ave.	Removed silt and pine needles from a Catch Basin	1500 - Clean Catch Basin	6/15/2021
W051684-080221	Pickwick Ave	Removed silt and trash from a catch basin in alley	1500 - Clean Catch Basin	6/21/2021
W051685-080221	1314 Canterbury Ln.	Removed sticks from a curb inlet	1500 - Clean Catch Basin	6/21/2021
W051686-080221	121 Lakeside Dr.	Removed silt and pine needles from a catch basin	1500 - Clean Catch Basin	6/22/2021
W051687-080221	Shuford Ave at Boulevard	Removed trash and silt from a catch basin	1500 - Clean Catch Basin	6/22/2021
W051688-080221	A Ave at Boulevard	Removed trash and silt from a catch basin	1500 - Clean Catch Basin	6/22/2021
W051689-080221	Dupuy Ave.	Removed trash and silt from 4 basins on Dupuy and the entrance to WAWA	1500 - Clean Catch Basin	6/23/2021
				208

1501 - Repair Catch Basin 20-21

Run Date: 08/13/2021 10:55 AM

Reference No	Request Address One	Action Taken	Code Number	Work Completion Date
W046825-030420	100 Clearfield Circle	On 3/4/20 Investigated area found around curb Inlet 4 house, placed 1 barrel and 3 cones over holes and called into office. On 3/13/20 called in a MU to mark Utilities. On 7/16/20 Removed 10 tons of concrete, asphalt and dirt. Large void under C&G and around basin. Put screen wire in front of weep hole in basin wall. Put 8 tons of Crush and run stone back in hole and packed with backhoe. On 7/17/20 Removed 6 tons of asphalt, concrete and dirt and replaced 6 tons of crush and run back in hole backed with backhoe.	1501 - Repair Catch Basin	7/17/2020
W049251-110420	301 Charlotte Ave.	on 10/28/20 Both basins need to be replaced with new modern ones. Put bricks inside 1 basin to hole top and put a barrel on top of the basin walls are collapsing will not hold top up. on 4/22/21 a work order was generated for concrete foreman	1501 - Repair Catch Basin	10/28/2020
W050937-050321	307 Walnut Avenue	Reset lid top and cement in 2 cinder blocks, placed dirt around basin, basin is at the back of property on Helen Ave.	1501 - Repair Catch Basin	5/17/2021
				3

1502 - Clean Storm Sewer

Run Date: 08/13/2021 11:02 AM

Reference No	Request Address One	Action Taken	Code Number	Work Completion Date
W048219-073120	Conduit Rd at E Westover Ave	Flushed storm sewer at intersection. See W048325	1502 - Clean Storm Sewer	7/31/2020
W049706-123120	220 Orange Ave.	Unstopped grate	1502 - Clean Storm Sewer	12/31/2020
				2

1503 - Clean Drainage Ditch 20-21

Run Date: 08/13/2021 11:05 AM

Reference No	Request Address One	Action Taken	Code Number	Work Completion Date
W048471-090120	2803 Woodlawn Ave	Cleaned ditch with backhoe area hard to access. Did the best I could	1503 - Clean Drainage Ditch	9/4/2020
W048668-091520	Charlotte Ave	Removed 1 flatbed load of branches dumped in ditch	1503 - Clean Drainage Ditch	8/14/2020
W049001-101520	1109 and 1111 W Roslyn Rd	On 11/3/2020 Marked ditch with white paint to clean. On 11/6/2020 no one home tried to let them know what we are going to do in front of their property next week. On 11/10/2020 Used mini excavator with 12" bucket, removed 6 tons of dirt, gravel and trash. Placed grass seed in areas from 1107, 1109 and 1111 Roslyn Rd.	1503 - Clean Drainage Ditch	11/10/2020
W049259-110420	406 MacArthur Ave.	Cleaned drainage ditch	1503 - Clean Drainage Ditch	11/9/2020
W049318-111220	314 Charlotte Ave	Cleaned out ditch on shoulder of road	1503 - Clean Drainage Ditch	11/12/2020
W050421-032321	406 MacArthur Ave.	Used hoe fork to remove 1-5 gal bucket of trash from ditch	1503 - Clean Drainage Ditch	4/13/2021
W050786-042221	3119 Woodlawn Ave.	Scraped edge of road with loader. Used pole saw to cut back low hanging limbs and removed 6 tons of silt, dirt, grass to allow water to flow to catch basin and make roadway wider.	1503 - Clean Drainage Ditch	4/20/2021
W050845-042321	Conduit Rd.	Across from Riveroaks Dr graded ditch area with backhoe to keep water from standing in road	1503 - Clean Drainage Ditch	4/1/2021
W050913-042921	319 Ridge Rd.	Used backhoe, flatbed, shovels, pitch fork to clean in fornt of 3 culvert pipes. Removed 2 cubic yards of tree limbs, leaves, trash and silt.	1503 - Clean Drainage Ditch	5/7/2021
W050924-042921	708 Compton Rd.	Used chainsaw and loader to remove fallen tree blocking ditch.	1503 - Clean Drainage Ditch	4/30/2021
				10

1504 - Clean Drainage Pipe

Run Date: 08/13/2021 11:09 AM

Reference No	Request Address One	Action Taken	Code Number	Work Completion Date
W048474-090120	194 Charlotte Ave.	Cleaned pipe removed sand and silt	1504 - Clean Drainage Pipe	9/2/2020
W049594-121420	1200 Choptank Ct.	On 12/14/20 checked area found 1219 Choptank dumped brush on top of outfall blocking water. On 1/15/21 chop and cut tree roots blocking end of pipe, causing water not to drain. There is a large tree that needs to be cut down, blocking channel not allowing water to flow. on 3/26/21 Mr. and Ms Roberts was informed that the tree is on the contractor's list to be cut down.	1504 - Clean Drainage Pipe	1/15/2021
W050153-022421	Lakeview Ave.	cleaned pipes between Woodlawn and Vance Aves.	1504 - Clean Drainage Pipe	1/26/2021
W050275-030521	221 Biltmore Dr	3/17 - Removed 4 cyds of debris from ditch in rear of 217 Biltmore. 3/22 - Pumped water from grate, ditch & uncovered area where pipe was broken. Snaked 100' of lines. 3/23 - Replaced 2 sections of broken 4" pvc drain tile. Cut down 2 small trees growing in drainage ditch. 3/24 - Water still standing, not draining. 3/26 - Pumped water out and filled in repair hole. 3/30 - Flushed pipes from drop inlet at 217 towards 221. One pipe cleared and draining, One partially draining and hose coming out of ground at 219. CIP has been recommended by Director to replace drain lines. 4/2 - Checked area after heavy rain on 3/30; area is draining no standing water in the rear of 221 Biltmore. See attachment tab for email	1504 - Clean Drainage Pipe	4/2/2021
W050299-030821	Old Town Dr.	Used loader, shovels, pitch fork to remove 1 cubic yard of branch, leaves and dirt from concrete spillway	1504 - Clean Drainage Pipe	3/10/2021
W050374-031521	221 Biltmore Dr	See W050275.	1504 - Clean Drainage Pipe	4/2/2021
W050605-041221	2029 Boulevard	Removed glass, silt and trash from end of storm sewer pipe collected a 5 gallon bucket	1504 - Clean Drainage Pipe	2/25/2021
W051130-053021	318 Jefferson Ave	Used hoe fork and shovels to remove sticks and trash	1504 - Clean Drainage Pipe	6/15/2021
				8

1505 - Repair Storm Sewer

Run Date: 08/13/2021 12:40 PM

Reference No	Request Address One	Action Taken	Code Number	Work Completion Date
W046650-021020	114 Chesterfield Ave.	On 2/10/2020 Steel Pipe rusted out, needs to replace. Placed a cone over hole until repairs can be made. on 2/18/20 Pipe rotted, when weather gets better we will replace pipe across road. Pipe is in yard now. On 3/13/20 called in a MU to mark utilities. On 5/21/20 Placed road barrel over hole near catch basin. Pipe needs replacing across street hope to do soon. On 7/6/20 Dug up 12 tons of asphalt, dirt and old metal pipe. Installed 12" plastic pipe from yard and 20' pipe installed across road. Back filled with 12 tons of crush and run stone. On 7/7/20 Finished Mixed 2-94lbs of cement, poured around pipe at both ends, catch basin end and where pipe connects with concrete pipe. Waited for cement to set up before putting 1 ton of crush and run stone on top of concrete pipe.	1505 - Repair Storm Sewer	7/7/2020
W049236-110420	148 Charlotte Ave.	Sinkhole beside of manhole. Used 2 1/2 bags of 94lbs cement to repair wall on outside of storm sewer manhole. Placed 8 shovels of crush and run around manhole	1505 - Repair Storm Sewer	10/20/2020
W049514-120720	601 Waterfront Dr.	On 11/5/20 Sinkhole in curb and gutter, placed cone over hole. Will have to dig up and replace C&G around inlet. On 11/17/20 saw cut asphalt and concrete. Called in MU to mark utilities storm sewer repairs. On 12/10/20 removed 10 tons of asphalt, concrete and dirt. Found a large void under C&G in front of basin. Concrete poured very thin and on top of clay, no stone used and no rebar was used in front of basin. A large vehicle broke through concrete. Used 10 tons of crush and run stone to put in hole	1505 - Repair Storm Sewer	12/10/2020

3

1506 - Repair Drop Inlet 20-21

Run Date: 08/13/2021 12:45 PM

Reference No	Request Address One	Action Taken	Code Number	Work Completion Date
W048415-082020	E. Westover Avenue	Formed, Patched hole in back of inlet, broken pipe coming into box, patched holes in throat of box and backfilled with topsoil and 21a stone	1506 - Repair Drop Inlet	8/25/2020
W048621-091120	550 Boulevard	Removed sunken floor of inlet with jackhammer, poured concrete floor, saw cut, dug out asphalt and backfilled sinkhole in the Courthouse parking lot	1506 - Repair Drop Inlet	8/18/2020
W049144-110220	701 Forest View Dr.	On 10/14/2020 Removed damaged top on inlet and formed. On 10/15/2020 Poured new inlet top. On 10/19/2020 Stripped inlet forms and backfilled with topsoil	1506 - Repair Drop Inlet	10/19/2020
W050782-042221	301 Charlotte Ave.	On 5/3/21 Removed 1 top and jackhammered layers of bricks off to replace with IC2 style inlet top. On 5/4/21 Cut and removed 2 small sections of curb formed and poured inlet top 1 of 3 installed 1 IC2 frame and cover. On 5/5/21 Removed top on box 2 of 3 formed, poured inlet and installed IC2 frame and cover. Also, removed top of box 3 of 3 and started forming. On 5/6/21 Finished forming inlet top, Installed IC2 frame, cover and poured inlet top. On 5/7/21 stripped forms from inlet, backfilled with topsoil. Patched hole in inlet and filled in several low spot beside culvert with topsoil	1506 - Repair Drop Inlet	5/7/2021
				4

1507 - Clean Curb & Gutter 20-21

Run Date: 08/13/2021 12:49 PM

Reference No	Request Address One	Action Taken	Code Number	Work Completion Date
W047819-070120	610 Ryan Ave	Duplicate request see REF W047973 for actions taken	1507 - Clean Curb and Gutters	7/22/2020
W047933-071720	106 Princeton Rd	Cleaned debris from gutters	1507 - Clean Curb and Gutters	7/20/2020
W047973-072220	610 RYAN AVE	Scraped and cleaned as much as we could. neighbor's car was in the way. came out saw what we were doing and went back in without saying anything	1507 - Clean Curb and Gutters	7/22/2020
W048387-081820	100 Heron Run Dr	Used sweeper to remove silt, dirt and gravel from C&G collected 2 cubic yards of debris. Called CE Builders to let them know to put up new silt fence. They will and they were very understanding at Dunston Point Pkwy	1507 - Clean Curb and Gutters	8/18/2020
W048397-081920	302 Fairmont Dr.	Removed broken asphalt wedge, advised homeowner if he had a problem to call office	1507 - Clean Curb and Gutters	8/20/2020
W048408-082020	501 MacArthur Ave	removed debris from C&G sand and grass	1507 - Clean Curb and Gutters	8/20/2020
W048443-082620	104 SHERWOOD DR	cleaned gutter pan to allow water to flos	1507 - Clean Curb and Gutters	9/1/2020
W048665-091520	3117 Atlantic Ave.	removed 1/4 cubic yard of silt and grass from driveway wedge	1507 - Clean Curb and Gutters	8/7/2020
W049015-101920	Conduit Rd and Brockwell Ln	Swept curb and intersection	1507 - Clean Curb and Gutters	10/20/2020
W049142-110220	220 Plumtree Ave.	Pine needles in gutter put there by resident at 223 Wright Ave blocking water. Talked to both residents. Resident at 223 removed pile from gutter and placed them behind curb. Let 220 Plumtree know not to pump water onto other peoples property causing other property to have a large pool of standing water. Police were called over the weekend on this issue by 221 Wright Ave. Gave both 223 Wright and 220 Plumtree leaf map with regulation on putting leaves out.	1507 - Clean Curb and Gutters	11/2/2020
W049180-110320	212 E Ellerslie Ave.	Shoveled mud from gutter pan from water line break repairs	1507 - Clean Curb and Gutters	10/21/2020
W050165-022421	Conduit Rd.	Cleaned C&G from White Bank Rd to Heron Run Dr. Removed 2 cubic yards of leaves, dirt, trash, sticks and #3 stone, blocking water flow.	1507 - Clean Curb and Gutters	2/5/2021

Reference No	Request Address One	Action Taken	Code Number	Work Completion Date
W050174-022421	Springdale Ave.	American Legion parking lot, Scraped out dirt, grass, Leaves and sand from the edge of the road with loader to allow water to flow to storm drain. Removed 3 tons of debris.	1507 - Clean Curb and Gutters	2/9/2021
W050955-050621	1013 Colonial Ave	Car moved, scraped curb with shovel, sweeper swept street and sprayed curb with grass killer	1507 - Clean Curb and Gutters	5/21/2021
W051260-061121	Riveroaks Dr.	Cleaned grass out of gutter around island	1507 - Clean Curb and Gutters	5/20/2021
				15

1509 - Drainage Miscellaneous 20-21

Run Date: 08/13/2021 1:01 PM

Reference No	Request Address One	Action Taken	Code Number	Work Completion Date
W046714-022020	2111 WAKEFIELD AVE.	On 4/30/20 met with resident to discuss water problem. On 12/14/20 Mr. Stables called again. Took pictures of backyard while it was raining hard. There's nothing the City can do water sheening across backyard from neighbor's yard.	1509 - Drainage Miscellaneous	12/14/2020
W047196-050120	512 Waterfront Dr	On 5/11/20 spoke to resident they would like to have what was done across street beside of Mr. Heartwells house. Large rip rap and regraded ditch, ditch filling in with silt. Shoosmith Contractor did work for City across the street. On 7/10/20 Talk to Todd Flippen first, went out and talked to resident again. Resident would like to have drainage ditch lined with rip rap. Let resident know that Engineering would have to come out and take a look before anything can be done. Todd Flippen asked us to hold off. May need to contracted out Job is to big not easy to get to land locked	1509 - Drainage Miscellaneous	7/10/2020
W047743-062620	1207 Duke of Gloucester St	No City easement per Superintendent. Spoke to resident daughter Hilda Kacmarski, 690-5118, she was ok with what was done	1509 - Drainage Miscellaneous	7/2/2020
W047942-072020	4740 Ridgecrest Ln	Grounded down gutter pan, drilled holes and patched area to improve drainage	1509 - Drainage Miscellaneous	8/13/2020

Reference No	Request Address One	Action Taken	Code Number	Work Completion Date
W048119-073020	5212 Conduit Rd	On 6/26/20 Went by resident no on home. On 6/29/20 resident installing a french drain and wants to know the flow of gutter instead of across sidewalk. Got the ok from Taylor at City Hall Engineering. On 7/24/20 spoke to resident and lined up when work will be done. Will call MU to mark Utilities. Will have to take out 1 section of sidewalk. Resident has permit. Marked sidewalk with white paint On 7/27/20 called in MU to mark utilities On 7/30/20 removed a section of sidewalk with Jack hammer, air compressor, shovels, pick and pry par. Placed 1/4 ton of crush and run stone in hole and 2 cones. resident will install pipe. on 8/7/20 Cut sidewalk for resident to install a french drain. On 8/11/20 removed last piece of sidewalk	1509 - Drainage Miscellaneous	7/30/2020
W048267-080520	348 mallard drive	On 8/6/20 Investigated area and basins. Basins in area are not clogged too much heavy rain. Resident called City Hall. On 8/24/20 Spoke to resident, walked around property, Basin, pipe and outfall are clear.	1509 - Drainage Miscellaneous	8/24/2020
W048280-081020	507 Riverview Rd	Investigated area no standing water found, pipe are open. Nothing blowing flow of water threw woods. Lots of poison Ivy	1509 - Drainage Miscellaneous	8/25/2020
W048286-081020	Dupuy at Bradsher Aves	Not blocking storm drain, code enforcement issue. Neighbor feud.	1509 - Drainage Miscellaneous	8/11/2020
W048393-081920	533 MacArthur Ave	On 5/21/20 Placed a barrel on plywood. On 8/24/20 Sanitary sewer issue informed Danny in Utilities	1509 - Drainage Miscellaneous	8/24/2020
W048413-082020	713 Conduit Rd.	On 8/21/20 Checked all drains in area. All pipes and basins are clear. Just rained too hard. On 8/28/20 Calked resident she may come and get some sandbags possible heavy rain Saturday. Checked all basins and pipes in area 2nd time everything is open. Ms. Williams understands. Informed Director.	1509 - Drainage Miscellaneous	8/28/2020

Reference No	Request Address One	Action Taken	Code Number	Work Completion Date
W048439-082620	103 HUNTINGTON RD	On 8/26/20 Never has been a drainage ditch behind properties. Plenty of yard waste behind property. On 9/8/20 Spoke to Todd Flippen, he agreed that it's too difficult to get to. Todd will let the City Manager know what is going on. On 9/28/20 Took several pictures for Mr. Flippen behind 101-103 very overgrown and lots of yard waste dumped behind fences.	1509 - Drainage Miscellaneous	9/8/2020
W048446-082620	622 Ryan Ave	8/28/2020 on Called resident basin is not clogged. Washout around catch basin in backyard needs stone and dirt. Basin is in good shape. On 9/14/20 Used new flatbed to haul #5 stone and topsoil. Used personal wheel barrow to put down 1/2 ton #5 stone in hole around basin. Put 1/4 ton topsoil on top of stone. No Clogged basin or pipes too much rain in a short period of time.	1509 - Drainage Miscellaneous	9/14/2020
W048480-090220	Hampton Dr.	Turn over to Engineering Keith. See pictures attached	1509 - Drainage Miscellaneous	9/2/2020
W048556-090920	225 Kennon pointe Dr.	Duplicate request see REF# W048991 for action taken	1509 - Drainage Miscellaneous	3/15/2021
W048557-090920	225 Kennon Pointe Drive	Duplicate request see REF# W048991 for action taken	1509 - Drainage Miscellaneous	3/15/2021
W048594-091020	200 block Washington Ave.	Emergency Excavated area, put dirt back in hole, coned area off also caution tape area. Replaced old basin and install new pipe and retaining wall. Area unstable and crumbling. Keith Chisolm on site to see issue and what was causing issue.	1509 - Drainage Miscellaneous	8/15/2020
W048631-091120	268 Kennon Pointe Drive	Talked to resident let her know City does not have any drains behind her house or neighbors. Low area pools water when it rains a lot. Irrigation runs a lot in this neighborhood. On going issue for years. Ground never has a chance to dry out.	1509 - Drainage Miscellaneous	9/16/2020
W048633-091120	262 Kennon Pointe Dr.	See REF# W048631 same issue	1509 - Drainage Miscellaneous	9/16/2020
W048634-091120	262 Kennon Pointe Dr.	See REF# W048631 same issue. Found no Erosion	1509 - Drainage Miscellaneous	9/16/2020
W048670-091520	501 Lake Ave.	Moved equipment on yard due to high water on complex	1509 - Drainage Miscellaneous	8/15/2020
W048686-091520	228 Washington Ave.	Placed a barrel and caution tape Informed Keith he will look at it	1509 - Drainage Miscellaneous	8/4/2020

Reference No	Request Address One	Action Taken	Code Number	Work Completion Date
W048701-091720	263 Kennon Pt. Dr.	Duplicate request See REF# W048985 for action taken	1509 - Drainage Miscellaneous	11/4/2020
W048706-091920	225 Kennon Pointe Drive	Duplicate request see REF# W048991 for action taken	1509 - Drainage Miscellaneous	3/15/2021
W048845-093020	129 1/2 W WESTOVER AVE	On 10/1/2020 Investigated are Superintendent informed us there is no storm drains in back it is a sanitary sewer. On 10/16/20 Utilities Tv'ed line. On 10/22/20 Foreman spoke to resident.	1509 - Drainage Miscellaneous	9/30/2020
W048859-100120	225 Kennon Pointe Drive	Duplicate see REF# W048980 for action taken	1509 - Drainage Miscellaneous	10/14/2020
W048869-100420	225 Kennon Pointe Drive	Duplicate see REF # WO48980	1509 - Drainage Miscellaneous	10/14/2020
W048966-100820	148 Charlotte Ave	Ongoing issue around storm drain and water meter. Looked at area	1509 - Drainage Miscellaneous	9/18/2020
W048967-100820	900 Yorkshire Dr	Investigated, no drainage issue. Water draining from High School Parking Lot and Field Not curb inlet water flows out of concrete box on street that is tied into Curb and Gutter	1509 - Drainage Miscellaneous	9/18/2020
W048978-100820	263 Kennon Pointe DR	Duplicate request See REF# W048985 for action taken	1509 - Drainage Miscellaneous	11/4/2020
W048979-100820	263 Kennon Pointe DR	Duplicate request See REF# W048985 for action taken	1509 - Drainage Miscellaneous	11/4/2020
W049018-101920	219 Piedmont Ave	NOT a City Issue. Private property. Contractor installed drain pipes in backyard	1509 - Drainage Miscellaneous	11/5/2020
W049021-101920	3616 Hemlock Ave.	See attachment tab for email. On 10/20/20 checked are nothing can be done, higher authority, Cannot mess with someone flower beds and landscape	1509 - Drainage Miscellaneous	10/20/2020
W049042-102120	1300 Hermitage Rd	Investigated area and Inlets. Found nothing stopped up	1509 - Drainage Miscellaneous	10/22/2020
W049149-110220	313 Comstock Dr.	Investigated area Not a City issue	1509 - Drainage Miscellaneous	4/21/2021
W049230-110420	White Sand Ct.	Sinkhole in street between Lot 31 and 32 called in by Wesley Scott needs asphalt in hole. Work order for asphalt has been generated.	1509 - Drainage Miscellaneous	10/1/2020
W049232-110420	526 Pinehurst Ave.	retrieved a cell phone in storm sewer	1509 - Drainage Miscellaneous	10/16/2020
W049238-110420	103 Huntington Rd.	Took pictures again of overgrown area. Gave to Keith and Todd, downloaded to Keith phone.	1509 - Drainage Miscellaneous	10/22/2020

Reference No	Request Address One	Action Taken	Code Number	Work Completion Date
W049240-110420	204 Piedmont Ave.	Pipe has been like this form years. Not hurting anything. Would take a lot of dirt to cover top of pipe. It's an old covert pipe. Asking for trouble is messed with	1509 - Drainage Miscellaneous	10/22/2020
W049245-110420	1107 W Roslyn Rd	On 10/27/20 Met on site to discuss drainage ditch cleaning. Called in MU for 1107-1111 W. Roslyn Rd. On 10/30/20 Called field locator for gas line, set up time for 8am on 11/2/20 to meet. Superintendent called resident and informed they to make sure they are there to gain access to the backyard Dogs and the fence is locked	1509 - Drainage Miscellaneous	10/30/2020
W049252-110420	107 Waterfront Dr.	Tropical Storm Zeta Checked catch basin in backyard, clean and clear took picture sent to Mike West	1509 - Drainage Miscellaneous	10/29/2020
W049256-110420	221 Biltmore Dr.	On 10/30/2020 Small catch basin stopped up, NOT put in by the City. Drains out through curb on 220 Homestead Dr. 4" terra Cota pipe and a 4" plastic corrugated pipe. Utilities Division attempted to flush pipe could not pipe is in bad condition took pictures. On 11/5/2020 AJ, Jeremy and Mike West went out on site with map to discuss with homeowner. On 12/4/2020 Flushed 2-3" plastic pipe with water hose. Pipes and basin needs replacing. On 12/9/20 placed orange construction fence around hole that exposes 2-3" plastic pipes. On 1/14/21 AJ, Keith and Jeremy met with Mr. Brasewell inform him this will be for bid	1509 - Drainage Miscellaneous	1/14/2021
W049317-111220	1200 Chop Tank Ct.	Checked all 3 basins in area. All are clear. Leaves in gutters but water is draining into basins.	1509 - Drainage Miscellaneous	11/12/2020
W049325-111620	310 Plumtree Avenue	Leaves in gutters. leaf truck will collect leaves Area 3. Water can drain	1509 - Drainage Miscellaneous	11/19/2020
W049326-111620	1243 Riveroaks Dr	Took pamphlet to resident that explains easements responsibilities	1509 - Drainage Miscellaneous	11/18/2020
W049446-120220	123 Wright Ave	The Superintendent investigated area found the driveway is high the backyard is low, a fence and a lot of debris and other items against the fence. He informed Ms. McReynolds that the City did not have any easements or right-a-ways in the area she is referring too.	1509 - Drainage Miscellaneous	12/2/2020

Reference No	Request Address One	Action Taken	Code Number	Work Completion Date
W049517-120720	1107 - 1111 W. Roslyn Rd.	Checked while raining drainage ditches water flowing through pipes and recent ditch cleaning working well.	1509 - Drainage Miscellaneous	11/12/2020
W049518-120720	107 Waterfront Dr.	Checked trouble spots, catch basin in backyard is open	1509 - Drainage Miscellaneous	11/12/2020
W049526-120720	Greenwood Ave.	Put up a orange safety construction fence around a large hole over a storm sewer pipe at the dead end.	1509 - Drainage Miscellaneous	11/23/2020
W049534-120720	119 - 262 Kennon Pt Dr.	Took pictures for Superintendent behind the above addresses common area.	1509 - Drainage Miscellaneous	11/19/2020
W049555-120820	Duke of Gloucester St.	Checked area basins, nothing stopped up, water just drains slow	1509 - Drainage Miscellaneous	12/9/2020
W049621-121620	269 Kennon Point Dr	On 12/22/20 Placed a cone over hole, too wet to do anything, standing water. Duplicate request see REF# W049956 for action taken	1509 - Drainage Miscellaneous	3/15/2021
W049623-121720	Conduit Rd at Westover Ave.	On 12/20/20 Tree roots in storm sewer pipe blocking water, need a root cutter machine to cut roots out of pipe	1509 - Drainage Miscellaneous	12/20/2020
W049638-121820	100 Block of Suffolk Avenue	Leaf truck has not come through this area yet, Gutters will need to be pulled and leaves vacuum off grate top. Water is able to drain.	1509 - Drainage Miscellaneous	12/18/2020
W049644-121820	500 Floral Ave.	Leaf truck pulled curb and gutter to clear debris so water will flow. Numerous sprints in this are, always water running across sidewalks and gutters	1509 - Drainage Miscellaneous	12/18/2020
W049677-122820	Briarcliffe Dr at Courtland Dr	On 12/28/20 On going problem. City would have to replace/reconstruct C&G in this area to have water to flow. City tried asphalt and it made it worse. On 1/20/21 will turn over to concrete foreman	1509 - Drainage Miscellaneous	12/28/2020
W049709-123120	2505 White Oak Court	Investigated area found pipe not connected to anything, removed pipe from ground.	1509 - Drainage Miscellaneous	1/5/2021
W049718-010421	105 Homestead Dr	No City easement Private property issue	1509 - Drainage Miscellaneous	1/6/2021
W049762-010721	216 Homestead Drive	Basin in backyard of 215 Biltmore Dr is higher than yards o Homestead Dr. Privacy fence put down into ground blocking water flow. Cannot cut fence private property	1509 - Drainage Miscellaneous	1/15/2021
W049871-012021	263 Kennon Pointe Dr.	Duplicate work order see REF# W049957 for action taken	1509 - Drainage Miscellaneous	3/15/2021

Reference No	Request Address One	Action Taken	Code Number	Work Completion Date
W049886-012121	533 MacArthur Ave	Investigated area found it's a sanitary sewer issue turn over to Utilties	1509 - Drainage Miscellaneous	1/22/2021
W049932-012221	189 Charlotte Ave.	Investigated area all drains in backyard is open and clear. Not a City issue her yard is the lowest on the block	1509 - Drainage Miscellaneous	1/25/2021
W050250-030221	309 and 307 NORWOOD DR	All basins clear and working. Addresses are located at the bottom of hill. Ground water, too much rain. Nothing City can do drains are working. Everyone in this area has drain tile pipe in their yards that is causing problem. none of them are connected to storm drain pipe or basins. Pipes spill out over backyards causing problem	1509 - Drainage Miscellaneous	3/29/2021
W050259-030321	356 Mallard Dr	Placed a barrel over hole will fill with stone tomorrow. See attachment for pictures, this has been turn over to Engineering to assign a contractor to make necessary repairs.	1509 - Drainage Miscellaneous	3/3/2021
W050430-032421	109 Wilkshire Ct	On 4/5/21 met with resident to figure out how to resolve water problem. On 4/6/21 Resident request cut curb and installed 8" of under drain pipe	1509 - Drainage Miscellaneous	4/6/2021
W050431-032421	Branders Bridge Rd	Checked area there is water on the side of road not in the road	1509 - Drainage Miscellaneous	3/24/2021
W050432-032421	4740 Ridgecrest Ln	Citizen's driveway was replaced level with flow line of C&G allowing water to spread out onto driveway when it rains. When it stops raining water dries up	1509 - Drainage Miscellaneous	3/24/2021
W050455-032921	902 Kensington Ave.	See REF# W050527 for action taken	1509 - Drainage Miscellaneous	4/20/2021
W050464-032921	912 Lakewood Dr.	Investigated area found C&G has lots of low places in gutter not allowing water to flow. There is a curb inlet i the area, water is trickling into basin. Basin is clear. C&G needs to be replaced to correct the problem. Only house on street that has this problem. Concrete foreman has a work order for this location	1509 - Drainage Miscellaneous	3/11/2021
W050486-033021	416 Washington Ave	See attachment tab for action taken water tested ground water. There are no storm drains or pipes near these houses causing this problem. Potential Spring	1509 - Drainage Miscellaneous	4/5/2021

Reference No	Request Address One	Action Taken	Code Number	Work Completion Date
W050491-033121	910 Lakewood Drive	Superintendent investigated area did not find any oil, the water was not oily and no sheen was noticeable. He sent an email to Engineering to investigate further. On 4/5/21 Resident at 910 Lakewood sent video of oil in gutter pan coming from 906. Sent info to Engineering. MHW	1509 - Drainage Miscellaneous	4/5/2021
W050518-040121	1031 Conjurers Drive	City does not have any drainage in back of this property. There is an utility easement for power and phone. Nothing City can do. Resident can try to install drain pipes.	1509 - Drainage Miscellaneous	4/5/2021
W050550-040721	269 KENNON POINTE DR	Duplicate request see REF# W049956 for action taken	1509 - Drainage Miscellaneous	3/15/2021
W050552-040721	401 Joe Johnson Ave	Investigated area and checked 2 small 8" x 8" square grate top drains. Found nothing clogged both basins have false bottom.	1509 - Drainage Miscellaneous	4/15/2021
W050564-040821	112 Norwood Drive	Investigated area, Superintendent informed us that there is no easement for drainage in this area. NO action taken	1509 - Drainage Miscellaneous	4/27/2021
W050569-040921	220 Plumtree Ave.	Resident on Wright Ave behind 220 Plumtree was just edging the curb and disrupted the ground. No City issue. Explained to resident	1509 - Drainage Miscellaneous	4/15/2021
W050614-041221	Lexington Dr.	Outfall investigated on list to be reconstructed CIP project	1509 - Drainage Miscellaneous	3/1/2021
W050615-041221	4749 Ridgecrest Ln.	Took pictures for Superintendent, drainage issue and structural issue with house	1509 - Drainage Miscellaneous	3/12/2021
W050719-041921	406 MacArthur Ave.	Took pictures of pipe and water, iron from ground in water making it look orange. No issue rain water will wash it away. Informed Director what was going on at this address. On 4/29/21 Reclamation of ditch meeting, met with Mike West, Steve, Keith, Corey and 2 reps from Shosmith to discuss how and what they will do with the eroding ditch. Shosmith will repair	1509 - Drainage Miscellaneous	4/19/2021

Reference No	Request Address One	Action Taken	Code Number	Work Completion Date
W050941-050321	100 block Suffolk Ave. and Hill Place	Never an issue before City repaved Suffolk Ave and caused water to not be able to fully drain. Only way to to correct problem is to re do valley gutter in intersection so water can drain towards Lynchburg Ave where storm drain is located	1509 - Drainage Miscellaneous	5/4/2021
W050959-050621	406 E. Westover Ave.	Investigated area found nothing wrong	1509 - Drainage Miscellaneous	5/7/2021
W051473-070921	Elmwood at Greenwood Dr.	Metal pipe rusted out and ground collapsing causing a large sinkhole over storm sewer. Someone took orange construction fence and barrels and threw them in hole. Keith came out to see problem and took pictures.	1509 - Drainage Miscellaneous	5/20/2021
W051476-070921	Elmwood at Greenwood Dr.	Metal pipe rusted out and ground collapsing causing a large sinkhole over storm sewer. Someone took orange construction fence and barrels and threw them in hole. Keith came out to see problem and took pictures. Went to Agri purchased 12 5' long metal T post, 100' of orange fence and replaced it at the hole at the dead end of Greenwood Dr	1509 - Drainage Miscellaneous	5/20/2021
				82

1514 - Repair Storm Sewer Pipe 20-21

Run Date: 08/13/2021 1:05 PM

Reference No	Request Address One	Action Taken	Code Number	Work Completion Date
W047161-042320	701 Forestview Dr.	On 4/27/20 Investigated area can see corrugated steel pipe deep in ground lots of tree roots. Placed a barrel over hole. On 7/27/20 Took grate top off could see that corrugated steel pipe had rusted out bottom creating a large hole held up only by tree roots 40 to 50' of pipe needs to be replaced. Informed Director he will have Keith Chisolm meet with us on site big job needs to be contracted out. on 7/31/20 Placed orange plastic construction fence up around hole. On 10/7/20 Met with Keith Chisolm, Steve Perkins and Southern Construction Contractor to discuss how and when to replace a 36" pipe. On 10/9/20 Southern Construction Replaced 40' of 36" pipe used double walled plastic pipe store in complex. Pipe was replaced from Catch Basin grate to to manhole old pipe was metal.	1514 - Repair Storm Sewer Pipe	10/9/2020
W049646-121820	215 Homestead Dr	On 12/21/20 Placed a barrel over hole, spoked to resident to have permission to drive backhoe across driveway to fix problem. On 1/7/21 Called in MU to mark utilities. on 1/20/21 Used backhoe to dig out dirt and roots on top and around a 24" concrete storm sewer pipe and put dirt to the side. Found tree roots causing separation, chopped out roots, used 2 buckets of plug cement to patch void. Put 2-5 gallon buckets of #5 stone in area of plug. put existing dirt back in hole and packed with backhoe	1514 - Repair Storm Sewer Pipe	1/20/2021
W049995-012921	Williamsburg Rd.	Patched pipe storm drain with motorall and wrapped with concrete filled blanket	1514 - Repair Storm Sewer Pipe	1/6/2021
W051287-061421	237 Spring Drive	On 6/14/21 Investigated area. On 6/18/21 Sprayed area around where we will do repairs used 1/2 gallon of roundup. On 6/24/21 Used concrete mixer, mixed concrete, poured in bottom of washout where water flows out of pipe into basin causing a hole a the edge of the street. Reset wooden timbers holding back dirt.	1514 - Repair Storm Sewer Pipe	6/24/2021

4

Department of Public Works Facilities
DPW Area
Impervious
SW Controls
BMPs
Hotspots
Use
Use
Administration
Equipment Maintenance
Fleet Maintenance
Fueling Station
Parking
Stockpile
Storage
Discharges

Public Education and Outreach Plan

DEPARTMENT OF PUBLIC WORKS
201 James Avenue
P.O. Box 3401
Colonial Heights, VA 23834

April 2017

The City of Colonial Heights operates a Stormwater Management Program in compliance with the Virginia General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4 General Permit). In accordance with Section II.B.1 of the permit, the City implements a Public Education and Outreach Program (PEOP) on stormwater impacts.

Consistent with the MS4 General Permit, the PEOP considers the following goals:

- Increase the knowledge of City's staff about steps that can be taken to reduce stormwater pollution, placing priority on reducing impacts to impaired waters and other local water pollution concerns;
- Increase City's staff knowledge of hazards associated with illegal discharges and improper disposal of waste, including pertinent legal implications; and
- Implement a diverse program with strategies that target audiences most likely to have significant stormwater impacts.

The Program is designed to be consistent with the MS4 General Permit to:

- Identify three high-priority water quality issues and provide rationale for the selection of each issue;
- Identify and estimate the population size of the target audience who is most likely to have significant impacts on each water quality issue; and
- Identify the relevant message and associated educational and outreach materials for distribution to the target audiences.

The City's high-priority water quality issues for the PEOP are provided below. Based on measures of effectiveness for each, any may be replaced or refined with approval of the Department of Environmental Quality (DEQ) as part of an iterative stormwater program.

Water Quality Issue No. 1: Education on waste (trash and litter)

Rationale: Minimize the impact of trash and litter on receiving waters downstream of the City.

Target Audience: City's staff performing day-to-day activities that include disposal of waste. There is also the potential for the staff to implement waste minimization. This audience includes:

- ±55 Facilities Management and DPW staff

Relevant Message: To address goals of the Program the relevant message will include:

- General information about stormwater runoff (why it's important, where it drains, pollutants, etc.)
- Knowledge of the hazards associated with improper disposal of waste
- Information on illicit discharges arising from improper waste disposal
- Proper storage of solid waste
- Steps that can be taken to reduce stormwater pollution including waste minimization

Outreach Materials to Convey the Relevant Message: An email sent to the entire target audience

that includes a brochure with the relevant message and a link to the City's stormwater webpage. Email was selected as the appropriate distribution mechanism because it is a simple but effective mechanism to reach Facilities Management and DPW staff. This method can be easily documented and quantified.

Schedule: Outreach material will be distributed a minimum of once a year to at least 20% of each target audience.

Method to Determine Effectiveness: The email recipients will be asked to answer two questions related to the outreach material and send it as an email reply. This will allow measurement of participation and reach and allow for the evaluation of the effectiveness of the outreach material.

Water Quality Issue No. 2: Public education of stormwater impacts

Rationale: Overcome the challenge of communicating with Residents, and staff who may not regularly seek out environmental information in an effort to provide general stormwater education.

Target Audience: General stormwater education to emphasize that stormwater is discharged to surface water and everyone could contribute to the improvement of stormwater runoff through knowledge of simple steps to reduce stormwater pollution. This audience includes:

- ±55 City of Colonial Heights staff
- 17,411 Residents.

Relevant Message: To address goals of the Program the relevant message will include:

- General information about stormwater runoff (why it's important, where it drains, pollutants, etc.)
- Steps that can be taken to reduce stormwater pollution
- Knowledge of the hazards associated with illegal discharges and improper disposal of waste, including pertinent legal implications
- Information for reporting a potential illicit discharge (what are the pollutants of significance, who to contact if a potential illicit discharge is observed, how to reduce community impact)
- Information regarding the City's Stormwater Program

Outreach Materials to Convey the Relevant Message:

- Flyers and handouts and surveys for various stormwater issues available at the front desk of the Colonial Heights City Hall and Engineering Offices
- Posters throughout public buildings referencing various stormwater issues
- Provide information on the City website
- Provide information in *The City Focus*
- Flyer in utility bill with survey

Schedule: Outreach material (posters and website) will be available throughout the year.

Information will be published in *The City Focus* annually. Flyers in utility bills will be sent out at least once a year to 20% of the target audience.

Method to Determine Effectiveness: The number of copies of The City Focus distributed at the time of the publication of the information will be tracked. The number of flyers distributed will be tracked annually. Completed and returned surveys will also be tracked annually. Visitor logs will also be tracked for buildings that have posters regarding stormwater issues to get an approximation of the number of people being reached.

Water Quality Issue No. 3: Pet Waste Containment

Rationale: Minimize the impact of pet waste on receiving waters generated by residents.

Target Audience: Approximately 23% of the City's population have registered animals. The City also operates an animal shelter and nine City parks.

- ±4,004 pets based on 4,004 pet owners
- ±400 visiting pets in City Parks

Relevant Message: To address goals of the Program the relevant message will include:

- Why pet waste is a concern.
- How pet waste impacts local water by contributing to bacteria levels.
- Simple practices that can be used to keep pet waste out of the water.

Outreach Materials to Convey the Relevant Message:

- Pet waste stations in City Parks
- Post signs at City Parks
- Provide information on the City website
- Provide information in *The City Focus*
- Poster in the City's animal shelter and training
- Flyers and brochures for pet owners

Schedule: Pet waste stations are installed in various City Parks. Outreach material (posters and website) will be available throughout the year. Posters will be provided in the City's animal shelter. Training will be provided to at least 20% of the target audience (animal shelter staff) annually. Flyers and brochures will be made available to pet owners.

Method to Determine Effectiveness: The City will measure effectiveness based on the number of bags taken from the pet stations. The number of flyers and brochures that were distributed will also be tracked. Another way of measuring effectiveness will be through feedback during the training events.

Illicit Discharge Detection and Elimination

FIELD GUIDE

For Elimination of Polluted Stormwater in the City of Colonial Height's Stormwater Systems

City of Colonial Heights
201 James Avenue
P.O. Box 3401
Colonial Heights, VA 23834

April 2017

ITEMS INCLUDED IN THIS GUIDE

- Introduction
- Examples of what **IS** an Illicit Discharge (Polluted Stormwater)
- Illicit Connections
- Examples of what **IS NOT** an Illicit Discharge
- Illicit Discharge Initial Field Review
- Techniques for Conducting a Field Investigation
- Determining the Source of the Illicit Discharge
- Documentation of Suspected Illicit Discharges
- Coordination of Actions Following Initial Field Review
- Closure for Suspect Illicit Discharges

INTRODUCTION

The City of Colonial Heights (hereafter refererred to as "the City") is committed to ensuring that stormwater runoff from all its roadways and facilities comply with all federal and state environmental regulatory requirements.

Stormwater run-off is rainwater and melted snow that runs off the surface of streets, lawns, farms and construction and industrial sites. In undeveloped areas, much of the stormwater run-off is absorbed into the ground. That which is not absorbed by the ground ultimately flows into streams and rivers. Developed areas contain impermeable surfaces such as pavement and buildings that prevent stormwater from being absorbed into the ground, and thus increase stormwater runoff into storm drains, storm sewer systems and drainage ditches.

Excess stormwater run-off has the potential for causing infrastructure damage, downstream flooding and stream bank erosion. Also, metals, oils and grease, bacteria and other pollutants not filtered from the runoff can contaminate streams, rivers, wetlands, etc.

The Municipal Separate Storm Sewer System (MS4) Permit requires the City to develop an Illicit Discharge Detection and Elimination (IDDE) program. The IDDE program must incorporate the following four elements:

- Develop an MS4 map showing the location of all outfalls: mapping to be completed by the Project Coordinator;
- Develop and implement a plan to detect and address illicit discharges, including illegal dumping, to the City system;
- To the extent allowable under state law, prohibit illicit discharges into the MS4; and
- Inform public employees, businesses, and the general public of the hazards.

This IDDE Field Guide is designed to assist field personnel with detection, investigation and elimination of illicit discharges to the City's regulated small MS4 and is designed to complement the City *Illicit Discharge Detection and Elimination Program Manual*. This guide describes conditions that personnel may encounter and actions they need to take, and it should be utilized in field operations.

EXAMPLES OF WHAT IS AN ILLICIT DISCHARGE

What is an Illicit Discharge?
An illicit discharge is defined in the City's MS4 permit as "*any discharge to a municipal separate storm sewer that is not composed entirely of stormwater, except discharges pursuant to a VPDES or VSMP permit (other than the VSMP permit or discharges from the municipal separate storm sewer), discharges resulting from firefighting activities, and discharges identified by and in compliance with 9VAC25-870-400 D 2 c (3).*"

Sanitary Stormwater from Showers, Sinks, etc.

Discharge of Oil, Fuel from Vehicles and Equipment

Grass Clippings and Leaves When Intentionally Blown into Drains

Solvents

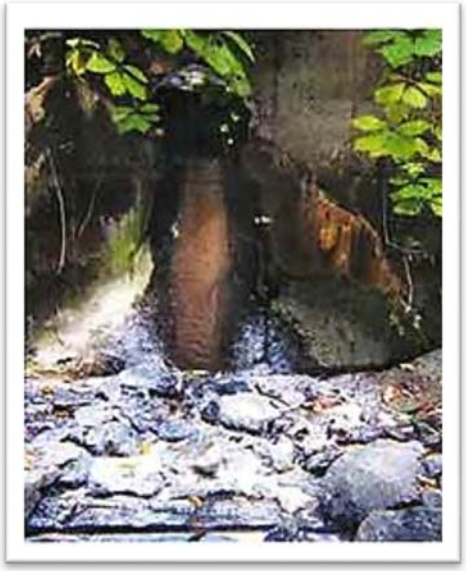
Cooking Oil and Grease

Cleaning Chemicals

Sediment

Improper Disposal of Radiator Fluid

Paints



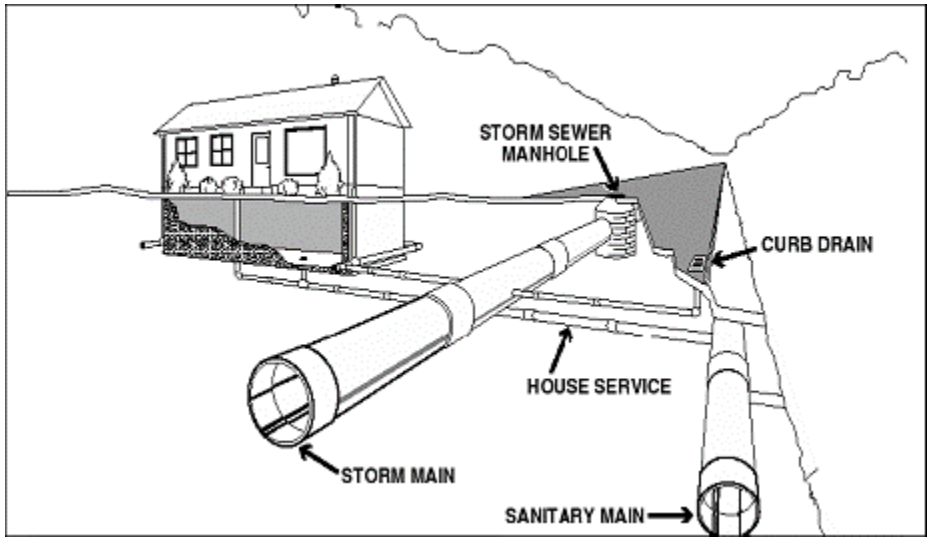
Non-residential Vehicle Wash Water

Mismanagement/Excess Road Salt

Illicit Connections

Illicit connections occur when drainage pipes or other conveyances are improperly connected to the storm drain system. These improper connections are often sources of illicit discharges. Examples include:

- A sewer pipe improperly connected to the storm sewer that is discharging raw sewage
- A shop floor drain that is connected to the storm sewer system
- A pipe from a residential household discharging gray water into the storm drainage system



Unpermitted Cross-Connections

Unpermitted cross-connections are between the MS4 and sanitary sewer. Such connections increase the risk of introducing water polluted with human-related bacteria and other contaminants and are considered illicit discharges.

Sewer can be attached to pipes and manholes that were either not identified or mistakenly identified. These connections must be removed and proper connections made to ensure the integrity of the MS4.

EXAMPLES OF WHAT <u>IS NOT</u> AN ILLICIT DISCHARGE

Fire Fighting Activities

Agricultural Irrigation Water

Foundation/Footing Drains

Dechlorinated Swimming Pool Discharges

Landscape Irrigation and Lawn Watering

Water Line Flushing

EXAMPLES OF WHAT IS NOT AN ILLICIT DISCHARGE

Basement/Crawlspace Sump Pumps

Discharges from Potable Water Sources

Air Conditioning Condensation

Street Wash Water

Springs

Residential Car Wash Water

EXAMPLES OF WHAT IS NOT AN ILLICIT DISCHARGE

Other discharges not considered illicit discharges include:

- Uncontaminated groundwater infiltration,
- Uncontaminated pumped groundwater,
- Rising groundwaters,
- Flows from riparian habitats and wetlands, and
- Those discharges covered under a Virginia Pollution Discharge Elimination System (VPDES) or National Pollutant Discharge Elimination System (NPDES) permit;
- Fuel, oil or antifreeze spills related to a vehicular accident that is properly cleaned up through normal incident management practices are not considered an illicit discharge. Staff should nevertheless monitor the site during and/or after the incident to ensure that the cleanup is sufficient.
- Drums or other containers containing potentially hazardous materials that are found abandoned are considered unknowns or other potential hazardous materials cargo. Do **NOT** open containers. Contact your local hazardous material response team.

Are there any exceptions?

In the event that any of these activities are found to cause sewage, industrial wastes or other potentially significant sources of pollution to be discharged into the City Stormwater system, the source should be further investigated. The county or city having jurisdiction over the source shall be notified, as they have the authority to order the activity to cease.

ILLICIT DISCHARGE INITIAL FIELD REVIEW

The proper staff will conduct initial field reviews for potential illicit discharges.

Illicit Discharge Detection and Elimination cases typically arise from one of the following sources:

1. **Citizens observe a suspect discharge and report it**
   - The proper staff will follow guidance to determine if a call needs to be routed to local HAZMAT or if it is considered an Illicit Discharge (ID).
   - The proper staff enters the information into the IDDE Tracking form.
   - Proper procedures are followed to track and eliminate the discharge.
   - Proper follow-up protocol are followed and documented to ensure that the ID was eliminated.

2. **City maintenance personnel observe an illicit discharge and report it to the Project Coordinator.**
   - The proper staff will follow guidance to determine if suspected ID need to be routed to HAZMAT team or if it is considered an Illicit Discharge (ID).
   - The proper staff enters the information into the IDDE Tracking form.
   - Proper procedures are followed to track and eliminate the discharge.
   - Proper follow-up protocol are followed and documented to ensure that the ID was eliminated.

Initial Field Review requires a site visit to determine if the condition described can be verified. The citizen or other reporting party should be contacted if the site location cannot be found, and in many cases, it may be advisable to meet them onsite. Many illicit discharges are intermittent and may not be present at the time of your visit, so the person may be capable of better isolating the time and circumstances surrounding the discharge they reported.

TECHNIQUES FOR CONDUCTING A FIELD INVESTIGATION

During field investigations, suspect discharges should be evaluated based on:

Odor

Odors may indicate an illicit discharge has occurred. The presence of sewage, sulfide, or rancid/sour odors may indicate the presence of wastewater in the system. Petroleum and chemical odors may indicate that a possible spill has occurred nearby.

Do not enter confined areas such as culverts, drop inlets, manholes or other enclosed areas to investigate the origin of odors. Gases may accumulate in these areas that can overcome the entrant.

Color

Certain water colors may also indicate the presence of an illicit discharge. Brown, gray, yellow, green, orange or red water should be noted. Water that is tinted brown may be due to the presence of naturally occurring tannins in the surrounding environment and may not be an illicit discharge. Turbid, cloudy water may indicate the presence of excessive siltation or other pollutants entering the stormwater.

Staining/Discoloration

The presence of stains or discoloration in or around an outfall may be signs that an illicit discharge is occurring or has occurred. Stains or discoloration often originate from natural sources, including water with high concentrations of iron or other minerals, lichen/fungi, and mineral deposits on stone or concrete.

Stressed/Dead Fish

Stressed or dead fish are a possible indication that an illicit discharge has occurred. A fish kill may be caused by naturally low dissolved oxygen levels during summer, or from lakes or streams freezing over during the winter. They can also be caused by diseases, overpopulation, or polluted runoff. Nevertheless, if multiple dead or stressed fish are observed, notify the Project Coordinator for further evaluation.

Other Observations

Containers, including drums and buckets may be found abandoned along the roadside. These containers may contain hazardous materials and should be avoided. Do **NOT** open containers. Contact your Project Coordinator for assistance.

Foam may be observed while performing an initial field review. Many instances of foam are natural; foam is produced when air is introduced to the water through stream turbulence, waterfalls or waves breaking on the shore. It can also occur from the natural breakdown of algae or other plant material. This natural foam may appear white at first, but will generally turn brown over time.

Natural foam in creek – not an illicit discharge

White foam in ditch – this is manmade in origin and is considered an illicit discharge

Foam that is white in color and has a sweet or scented odor is likely to be manmade. Examples of these include detergents, soaps, and shampoos. Always check the surrounding area for possible sources when foam is observed.

When disturbed, an organic sheen will crack and break into many small platelets.

Sheen

The appearance of a sheen can result from the presence of naturally occurring bacteria or petroleum contamination. The sheen's origin can be determined by touching it with a stick or other object. If the sheen breaks up into platelets or clumps, then it is due to the presence of naturally occurring bacteria in the water. If the sheen swirls (separates) and reforms (re- adheres), petroleum is present in the water. The pictures below are examples of a bacterial and petroleum sheen.

Do sheens always indicate an illicit discharge?

The presence of a bacterial sheen does not necessarily indicate an illicit discharge. Petroleum sheens are signs that petroleum has leaked or spilled, which indicates an illicit discharge has occurred or is occurring.

A petroleum sheen will swirl and reform itself rather than break apart.

Iron Bacteria

In areas throughout the state, an orange brown benthic growth may be observed in pipes, outfalls, and streams. This growth may appear as an orange, brown, red, yellow or grayish gelatinous slime. It can also appear as stains or as a “feathery” filamentous growth. A rainbow sheen may also be present. While unsightly, this growth is from iron bacteria that are naturally occurring in the soil and oxidize dissolved iron or manganese. The presence of iron bacteria does not typically indicate an illicit discharge.

Two examples of iron bacteria.
Note the rainbow sheen.

DETERMINING THE SOURCE OF THE ILLICIT DISCHARGE

If the discharge is found in the City drainage system, the source of the discharge should be investigated by:

1) Tracking the illicit discharge to its point of entry into the City storm sewer system.

2) At the point of entry look to see if the source can be identified; examples include a leaking drum used to store used oil or a PVC pipe from a residence that is discharging gray water. Do not enter private property to do this.

3) Take pictures and notes on observations and exact location where the pollutant enters the City's property.

At times, it may be difficult to determine the source of a discharge. The area around the discharge location should be visually surveyed to determine the:

- Location of outfalls and drainage pathways
- Upstream connections
- Potential upstream impacts (such as failing septic systems, etc.)
- Origins of pipes/culverts

By surveying the area upstream of a suspect discharge, the upstream connections as well as potential sources of discharges may be located.

An example of a source is a leaking septic system upstream impacting water quality downstream. Determining the origin of pipes and culverts can reveal unauthorized connections to the City's stormwater system as well. Unauthorized connections are often sources of illicit discharges as well as cases of trespassing on the City's property.

A reminder about safety:

At no time should anyone violate the City's safety rules in the investigation of a polluted stormwater complaint, including entering confined spaces.

DOCUMENTATION OF SUSPECTED ILLICIT DISCHARGES

All reports of illicit discharges and any field investigations must be documented.

Photographs

Photographs should be taken during the investigation to support information in the Illicit Discharge Tracking Sheet.

Photographs-
(1) Provide a visual record of conditions observed,
(2) Provide information to staff when further investigation is required, and
(3) Document changes in the outfall conditions over time.

In addition to close-up detailed photos, also take photos that capture the outfall and surrounding area ("Big Picture"). A "Big Picture" photo provides a frame of reference for anyone who has to perform a follow-up investigation at the site.

"Close-up" of oily substance discharging from pipe.

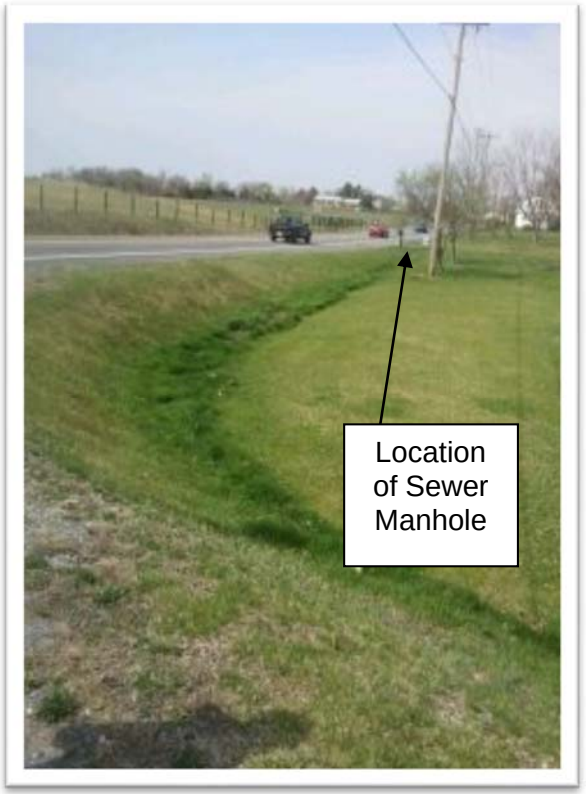
"Big Picture" photo shows pipe and surrounding layout.

The close-up photo by itself provides good detail of the discharge; however it is difficult to determine the true scale or location of the issue through viewing this photo alone. The “Big Picture” photo gives the investigator perspective as to the nature and severity of the discharge.

The photos below provide another example of close-up and “Big Picture” photos.

The source of this illicit discharge was determined by following the smell and excessive vegetation in the ditch line to a sewer manhole. The two pictures were taken in the spring. The grass in the yard had not yet come out of winter dormancy, but the grass in the ditch line was three times as tall, and was much greener than the yard.

“Close-up” of ditch where a sewage smell was reported.



“Big Picture” of the ditch line and nearest connection.

COORDINATION OF ACTIONS FOLLOWING INITIAL FIELD REVIEW

Suspect illicit discharges discovered during routine operations, or those otherwise reported, are coordinated differently depending on the issue. A few examples are noted below:

- Gray water issues that are discovered during ditching or cross pipe replacements are referred to the Project Coordinator
- Oil coming from cars in the parking lot, or sediment entering the stream from on-site erosion would be corrected by City maintenance staff utilizing proper procedures.
- An emergency response to a car accident on the road; the fuel tank is ruptured and leaking fuel into the drain, this case will be addressed by the Emergency Response and HazMat team.

CLOSURE FOR SUSPECT ILLICIT DISCHARGES

After all field investigations are complete, the case can be closed in one of the following ways:

1. Once the illicit discharge is verified and the information is referred to the Project Coordinator, the Project Coordinator will take the necessary action to close the case. Actions may include addressing the illicit disharge or referring the information to appropriate local or state officials for action. Ideally, the local or state official should be contacted by telephone, followed up by an email or other written correspondence. The name of the local or state official and the date of the contact should be documentd.

2. If the illicit discharge is verified but the source or type of discharge cannot be determined, please enter the information related to the investigation into the tracking system and any photos that were taken.

3. If the illicit discharge is intermittent (*), the site must be visited a minimum of three times to attempt to observe the discharge. If the discharge is not observed during any of these visits, note the attempts and close the work order.

4. If, after consultation with the Citizen making the report, the evidence of an illicit discharge cannot be found, the information related to the investigation should be entered into the tracking system. These incidents will be recorded in the IDDE tracking system and the investigation will be closed in accordance with established procedure.

***=An intermittent discharge is an illicit discharge that has been reported and verified, but upon further investigation is not flowing.**

Illicit Discharge Detection and Elimination (IDDE) Program Manual

DEPARTMENT OF PUBLIC WORKS

201 James Avenue
P.O. Box 3401
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April 2017

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APPENDIX E: The City Knowledge Check Quiz
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APPENDIX G: City of Colonial Heights IDDE Program Support Mapping

Acronyms

DCR	Virginia Department of Conservation and Recreation
DEQ	Virginia Department of Environmental Quality
EPA	Environmental Protection Agency
GIS	Geographic Information System
IDDE	Illicit Discharge Detection and Elimination
MEP	Maximum Extent Practicable
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollutant Discharge Elimination System
ORI	Outfall Reconnaissance Inventory
TMDL	Total Maximum Daily Load
VAC	Virginia Administrative Code
VPDES	Virginia Pollutant Discharge Elimination System
VSMP	Virginia Stormwater Management Program
WLA	Waste Load Allocation

1.0 INTRODUCTION AND PURPOSE

This manual presents the standard protocol which the City of Colonial Heights (hereafter referred to as "the City") will utilize to implement its Illicit Discharge Detection and Elimination (IDDE) Program. The manual provides written procedures to detect, identify, and address unauthorized non-stormwater discharges, including illegal dumping, to the City's small municipal separate storm sewer system (MS4). The written procedures are required to be developed, implemented, and updated by the City as a condition of the City's MS4 General Permit (General Permit). The General Permit authorizes stormwater discharges from MS4s to surface waters in urbanized areas of the Commonwealth of Virginia. The General Permitting process is designed to prevent pollutants from entering water bodies through stormwater runoff.

The MS4 Program is part of the Federal National Pollutant Discharge Elimination System (NPDES), which is authorized through the Clean Water Act. With delegation from the Environmental Protection Agency (EPA), MS4 General Permits in Virginia are issued through the Virginia Pollution Discharge Elimination System (VPDES) and administered by the Virginia Department of Environmental Quality (DEQ). This manual was developed in general accordance with the EPA's, *"Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments."* To ensure compliance with IDDE requirements of the General Permit, the City is required to perform the procedures outlined in this manual.

The City's IDDE Program includes five distinct components:

1. **Training** – Procedures to train applicable operations and maintenance staff are discussed in Section 2.0 of this manual.
2. **Administration/Documentation** – For the City to demonstrate compliance to the conditions of the General Permit, documentation of IDDE activities performed is paramount. This is discussed in Section 3.0 of this Manual from field through administrative responsibilities.
3. **Identification of an Illicit Discharge** – Procedures to screen, identify and report questionable illicit discharges are outlined in Sections 4.0 and 5.0 of this manual.
4. **Investigating the Source of an Illicit Discharge** – Procedures to investigate potential illicit discharges that have been identified or reported are outlined in Section 6.0 of this manual.
5. **Elimination of an Illicit Discharge** – Procedures to eliminate illicit discharges that have been confirmed through the investigation effort are outlined in Section 7.0 of this manual.

2.0 IDDE TRAINING PROGRAM

The General Permit requires the City to provide **biennial training** to applicable operations and maintenance staff in recognition and reporting of illicit discharges. This manual serves as the training material to meet the General Permit requirement.

The written procedures herein serve as the foundation of a successful IDDE Program and help to achieve General Permit compliance. However, implementation of the procedures is critical for achieving the IDDE Program goal **to eliminate non-stormwater discharges** to the City's storm sewer system and ultimately receiving waters. As referenced throughout this manual, the IDDE Program relies on supplemental materials to assist with implementation and documentation. Documentation that procedures have been implemented is critical to demonstrate permit compliance in the case of a regulatory audit. Operations and maintenance staff who are identified for IDDE training should be familiar with each Section of this Manual, the City's IDDE Field Guide, and the supplemental materials provided in the Appendices of this Manual, which include:

- **The City Point of Contact** – Provides a list of contact information dependent on the type or source of a potential illicit discharge identified or reported. The list is located in Appendix A.
- **Outfall Reconnaissance Inspection Form** – This form is used for outfall screening to assist in determining the potential of an illicit discharge. The form is located in Appendix B.
- **Outfall Inventory** – Provides a list of outfalls and attributes for the City. The inventory is located in Appendix C.
- **IDDE Tracking Form** – A form to assist with ensuring documentation required by the General Permit for each investigation regarding any suspected illicit discharge. To be completed by the Project Coordinator; but required information may be needed from operations and maintenance staff to assist with the completion of the form. The form is located in Appendix D.
- **IDDE Training**– Appendix E & F are intended for use by the Project Coordinator, for training and documentation purposes. For the applicable operations and maintenance staff, the following training is required to be completed each year:
- Attend training session. The session will be scheduled by the Project Coordinator with proper notice provided to each applicable operations and maintenance staff.
- Completion of the 'Knowledge Check' quiz in Appendix E. The quiz will be completed at the end of the training session by applicable operations and maintenance staff and provided to the trainer.
- **Support Mapping**– Provides mapping that identifies the locations of all outfalls that are required to be screened. This mapping is intended to be used by operations and maintenance staff when completing the screening and tracking illicit discharges. Mapping is provided in Appendix G.

3.0 PROGRAM ADMINISITRATION/DOCUMENTATION

As highlighted throughout this Manual, documentation of illicit discharge reports, investigations, and elimination actions is critical for demonstrating compliance to the General Permit. In the case of an illicit discharge, the City's General Permit requires, at a minimum, the following information:

- The date or dates that the illicit discharge was observed and reported;
- The results of the investigation;
- Any follow-up of the investigation;
- Resolution of the investigation; and
- The date that the investigation was closed.

The resolution of a discharge may be a referral to and acceptance by the DEQ or local government for action; however, this action must be properly documented by the City. If the discharge is determined to be a permitted or allowable discharge, then the final action will be documented and the information will be included on the corresponding City Illicit Discharge Tracking Inventory Form. This will enable the City to access this information if future requests are received concerning the discharge in question. The information will also be included in annual reporting described in the following section.

3.1 Annual Reporting to DEQ

The City must annually report to the DEQ information pertaining to its IDDE efforts. The information is included in the City's MS4 Annual Report due October 1st of each year. Information required for reporting includes:

1) A list of any written notifications of physical interconnection given by the operator to other MS4s;
2) The total number of outfalls screened during the reporting period, the screening results, and detail of any necessary follow-up action;
3) A summary of each investigation conducted by the City regarding a suspected illicit discharge. The summary must include:
   a. The date the suspected discharge was observed, reported, or both;
   b. How the investigation was resolved, including any follow-up; and
   c. Resolution of the investigation and the dates the investigation was closed.

3.2 IDDE Program Updates and Modifications

Modifications to the IDDE Program may occur as part of an iterative process to protect water quality. Updates and modifications to the Program may be made in accordance with the following procedures:

- Adding (but not eliminating or replacing) practices to the IDDE Program outlined in this manual may be made by the City at any time. Additions shall be reported as part of the annual report.
- Updates and modifications to the IDDE Program described in this manual are permitted provided the updates and modifications are done in a manner that:
    - Is consistent with the conditions of the General Permit;
    - Follow any public notice and participation requirements established in the General Permit; and
    - Are documented in the annual report
- Replacing, or eliminating without replacement, any ineffective or infeasible strategies, policies, and practices described in this manual with alternate strategies, policies, and BMPs may be requested at any time. Such requests must include the following:
    - An analysis of how or why the practices, strategies, or policies are ineffective or infeasible, including cost prohibitive;
    - Expectations on the effectiveness of the replacement practices, strategies, or policies;
    - An analysis of how the replacement BMPs are expected to achieve the goals of the practices to be replaced;
    - A schedule for implementing the replacement practices, strategies, and policies;
    - An analysis of how the replacement strategies and policies are expected to improve the City's ability to meet the goals of the strategies and policies being replaced; and
    - Requests or notifications must be made in writing to the Department and signed by a principle executive officer or a duly authorized representative. The duly authorized representative must have overall responsibility of the city operations and written authorization must be provided to DEQ.
    - The City follows the Public Involvement requirements identified in the General Permit.

4.0 IDENTIFICATION OF AN ILLICIT DISCHARGE

Municipal separate stormwater sewer (MS4) means a conveyance, or system of conveyances, that ultimately discharges into surface waters and wetlands. That is, any system of drainage from roads, parking lots, catch basins, curbs, gutters, ditches, man-made channels, or storm drains that convey stormwater is part of the MS4. These conveyance systems are vulnerable to contamination that can then travel alone or be carried with stormwater to receiving surface waters. Substances other than stormwater that enter receiving waters may be considered an illicit discharge and elimination of those discharges is the focus of this Manual. An illicit discharge can:

1. Be a measurable flow from a storm drain during dry weather that contains pollutants or pathogens;
2. Have a unique frequency, composition, and mode of entry in the storm drain system;
3. Be caused when the sewage disposal system interacts with the storm drain system; or
4. Be discharges from pollutants from specific source areas and operations known as "generating sites."

4.1 Defining and Illicit Discharge

For the purpose of the City's IDDE Program, an illicit discharge is defined as:

> *Illicit Discharge - Any discharge to an MS4 that is not composed entirely of stormwater, except discharges specifically identified in the Virginia Administrative Code.*

Most sources of an illicit discharge in the City are likely to originate from a generating site or activity, such as a washing area or vehicle maintenance area. These could result from daily practices or from a specific spill incident. Table 1 provides source pollutants that could be generated from areas within the city.

Table 1. Examples of source pollutants of an illicit discharge

Automotive fluids (oil, fuel, antifreeze)	Landscape waste (grass clippings, etc.)
Cooking oil and grease	Improperly applied fertilizer
Solvents	Sediment
Paints	Vehicle wash water
Chemical cleansers (detergents, soaps)	Sanitary sewer wastewaters
Improperly applied pesticides/herbicides	Dumpster leachate
Improperly managed salts	Trash

The regulations do have exemptions for some non-stormwater discharges that would not be considered an illicit discharge if not a significant contributor of pollutants to the City's MS4. Table 2 lists some of these discharges that may be relevant to the City that and are not significant contributors of pollutants and therefore are not considered illicit discharges. If there is uncertainty of the source or constituents within an observed discharge, the City's MS4 Program Administrator should be contacted immediately so a determination can be made. Contact information is provided in Appendix A. Additional detail for identification of an illicit discharge is provided in the *City's IDDE Field Guide*.

Table 2. Examples of sources that are not considered illicit discharges

Fire-fighting activities	Air conditioning condensate
Water line flushing	Footing or foundation drains
Landscape/ lawn irrigation	Springs
Diverted stream flows	Water from crawl space pumps
Rising groundwater	Dechlorinated swimming pool wastewater
Uncontaminated groundwater infiltration	Discharges from potable water sources
Uncontaminated pumped groundwater	Flows from riparian habitats and wetlands

4.2 The City's Stormwater Outfall Mapping/Inventory

An outfall can be considered a point where the City's MS4 discharges concentrated flow to surface waters or wetlands, such as at the end of a pipe or open drainage channel. Generally, these are the locations that drain the city and can be evaluated routinely to identify potential pollutants. Action can then be taken to prevent these pollutants from passing downstream. The General Permit requires the City to maintain a storm sewer map/outfall inventory as part of the IDDE Program. The City may incorporate outfall locations in their mapping and inventory that do not directly discharge into surface waters or wetlands for due diligence during screening procedures.

An illicit discharge identified within the city may also originate from an interconnected upstream MS4. Interconnections are recommended to be identified on the mapping to assist with identifying the contact for a potential off-site pollutant source. The upstream MS4 should be notified immediately so they can perform an investigation to identify and eliminate the pollutant source. Maps of the City's outfalls and interconnections are provided in Appendix G.

The General Permit also requires the City to maintain an Outfall Inventory Form that includes permit-required attributes for each outfall. The form is provided in Appendix C. The Project Coordinator should maintain a copy of both the IDDE Mapping and Outfall Inventory Form for review upon request by the public or DEQ. Each should be updated in the case that additional outfalls are

added to the system, as may be the case with new construction.

4.3 Awareness during Daily Activities and Operations

Potential illicit discharges can be removed prior to entering the storm sewer with the identification and appropriate follow-up when pollutants are observed to be exposed to precipitation, and subsequently stormwater runoff. The City maintenance and operations staff are in the best position to identify these pollutants, such as those identified in Table 1. Table 3 provides several examples of the observations and actions that could prevent an illicit discharge. If the observer is not qualified or appropriately trained to take the appropriate action, or if illegal dumping is observed, notify the Project Coordinator. The City's Pollution Prevention Plans and Standard Operating Procedures can also be a reference for instruction on appropriate actions.

Table 3. Example daily observations and subsequent actions can prevent an illicit discharge

Observation	Action
Uncovered dumpster	Cover dumpster
Uncovered container	Store container indoors
Oil/hydraulic fuel on ground	Clean & dispose of properly

4.4 Special Local Water Quality Concerns

The City's MS4 ultimately discharges to receiving waters that have been identified by the DEQ to not meet water quality standards. Subsequent studies, called Total Maximum Daily Load (TMDL) studies, have been performed by DEQ. The TMDL studies identify specific pollutants causing the impairments to the receiving waters and designate the amount of the pollutant the receiving water can assimilate to achieve water quality standards. A required reduction of the pollutant is typically assigned to the MS4s that drain to the impaired segment of the water body. It is important that the City's maintenance and operations employees be aware of these special pollutants shown in Table 4.

Table 4. Special pollutants of concern

TMDL	Pollutants of Concern
Chesapeake Bay	Nitrogen
	Phosphorus
	Sediment
Appomattox River	Bacteria

4.5 Reporting Procedures

The City's maintenance and operations staff are the first line of defense for preventing sources that could contribute to an illicit discharge. Actions that are taken to remove *potential sources* of an illicit discharge do not need to be reported unless it is suspected an illicit discharge has previously occurred. In this case, the employee needs to report the concern to the Project Coordinator within one (1) business day. The Project Coordinator will then document the report with the IDDE Tracking Form provided in Appendix D. Staff should be familiar with the form to assist with providing the necessary information required to complete the form.

An illicit discharge or potential source for illicit discharges may also be reported by other individuals that are not trained or authorized to perform necessary actions, such as reports from contractors. These individuals may recognize a potential illicit discharge after learning about pollution in stormwater runoff through the City's public education and outreach efforts. The City's stormwater webpage directs these individuals to contact the Project Coordinator, who will subsequently perform the appropriate follow-up action and documentation. If an employee is otherwise notified, the appropriate action should be taken, and if an illicit discharge is potentially occurring, the Project Coordinator shall be notified.

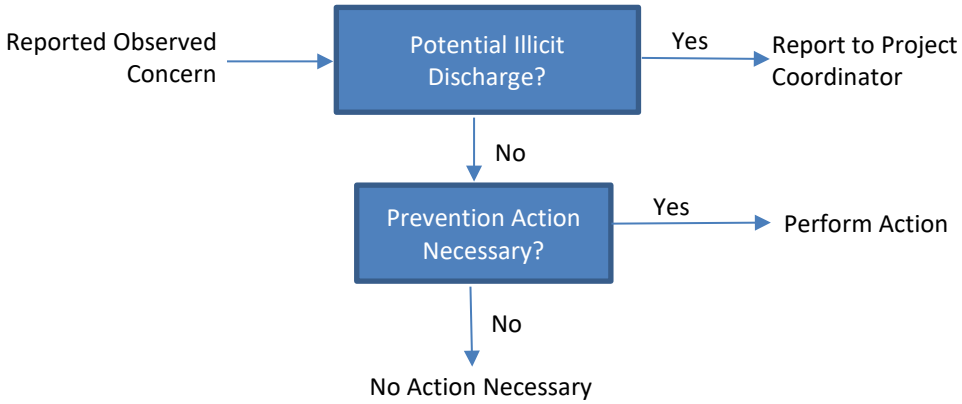

Figure 1. Reporting procedures for field staff

5.0 OUTFALL SCREENING

As an effort to identify illicit discharge occurrences from the City's MS4, annual outfall screening is required by the Program Plan under the General Permit for the outfalls within the City. In the case that potential illicit discharges are observed at specific outfalls and the source is not identified or eliminated, subsequent screening at a higher frequency may be necessary. Screening will be performed by an individual designated by the Project Coordinator.

5.1 Dry-Weather Outfall Screening

Since the City has more than 50 outfalls, the permit requires field screening of a minimum of 50 outfalls annually. Outfall screening shall be performed during dry weather using the Outfall Reconnaissance Inspection (ORI) Form provided in Appendix B. Completion of the form serves as the appropriate documentation that the required outfall screening has been performed and should be retained on file for a minimum of 3 years. Outfalls that are flowing during dry weather may indicate an active pollution issue, depending on if rain has occurred during the last 24 to 48 hours. Special attention should be paid to outfalls that are flowing and when no rain has occurred within the last 48 hours. When the screening of an outfall indicates a potential illicit discharge, the Project Coordinator shall be notified within one business day so an investigation, as described in Section 6.0, can be performed and an IDDE Tracking Form completed.

The ORI Inspection Form includes the following sections, which are to be completed for each outfall screening:

- ***General Information*** **-** Requires general information regarding date and time the screening was performed and the name of the individual that performed the screening.
- ***Environmental Information*** – Requires general information regarding outfall ID, most recent rainfall information, HUC Code, proximity to watercourse, and surrounding land uses. Tips for completing Section 1 include:
  - ✓ The Outfall ID can be found on the IDDE Program Support Mapping in Appendix G. The mapping may be updated from time to time to reflect new outfalls.
  - ✓ Rainfall data can be gathered from the link below by navigating to the location of the city on the map and selecting the last day or last 2 days. The map will depict rainfall precipitation ranges using a color scale (See Figure 2):
    http://www.srh.noaa.gov/ridge2/RFC_Precip/

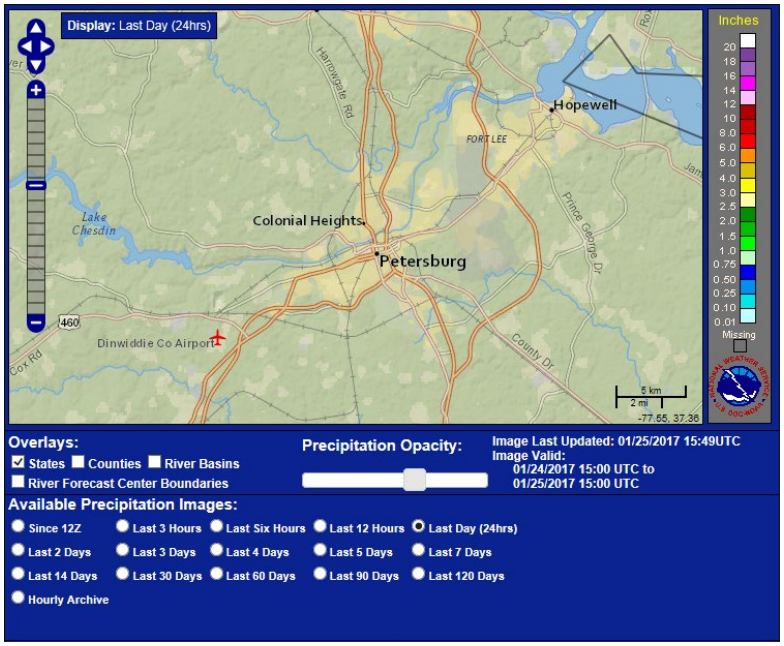

Figure 2. Sample Precipitation Summary

- ***Outfall Observations*** – Requires a description of the outfall such as observed pipe obstructions and general pipe conditions. The inspector performing the outfall screening should identify any other concerns such as overgrowth prohibiting flow, or structural concerns of the outfall (e.g. collapsed pipe).
- ***Illicit Discharge Indicators*** – Requires the observance of physical indicators that are not related to flow, such as odor and color to assist with identifying the source of the discharge. Other indicators to be noted are evidence of deposits and staining which can indicate that an intermittent discharge has occurred in the past, even if not currently flowing. Tips for completing this section include:
  - ✓ Take photos of visible indicators.
  - ✓ Note benthic growth, such as algae or slime on channel surfaces, which can be an indicator of nutrients in the stormwater runoff (See Figure 3).

Figure 3. Example Photo showing algae growth

This section also requires characterization of flow conditions and determination if flow is present during dry weather. If visible flow is present, quantitative information of the flow present at the outfall, including information to determine an estimate of the flow rate is required. Tips for estimating flow rate is outlined below:

- ✓ Flow rate can be estimated with the following equation. Measured data from the form is shown in **bold**. For the open channel flow calculation, travel time is estimated by the time it takes a floating object to travel the defined length.

$$\left(\left(\frac{bottom\ width\ (ft) + top\ width\ (ft)}{2}\right) x\ depth\ (ft)\right) x \frac{length\ (ft)}{travel\ time\ (seconds)} = flow\ rate\ (ft3/sec)$$

- ***Report Summary Characterization*** – Requires the inspector to determine whether there is an unlikely, suspected or obvious illicit discharge observed at the outfall. Photographic documentation **must** be attached to the report.
  - ✓ Take photos of visible indicators for documentation.

- ***Additional Notes*** – Provides a place to note any other outfall observations (e.g. trash or any infrastructural repairs)

5.2 Wet-Weather Screening

While dry-weather screening events can identify possible illicit interconnections that are continuous, wet weather screening events may identify pollutant discharges that are temporary and/or likely to result from improper storage of polluting materials or inadequate cleanup of off-site pollutant releases. Wet-weather screening may be appropriate if dry weather screening identifies physical indicators on the ORI Inspection Form.

6.0 INVESTIGATING ILLICIT DISCHARGE

In the case of the identification of an illicit discharge, it is necessary to conduct an investigation to identify and eliminate the source of the discharge. An investigation may result from:

- A staff observation;
- A report to the City's staff from the general public;
- A report from an interconnected MS4; or
- Results of outfall screening.

The determination of if an illicit discharge has occurred will be made by the Project Coordinator. **In all cases of an illicit discharge, the City's IDDE Tracking Form must be completed as documentation for General Permit annual reporting.**

The following sections outline the methodologies that shall be followed in the investigation an illicit discharge.

6.1 Investigation Triggers and Prioritization

Upon the identification of an illicit discharge, the date, location, and description must be reported in the City's IDDE Tracking Form. The following shall trigger an investigation:

- The determination of the occurrence of an illicit discharge by the Project Coordinator based on an observed illicit discharge by the City staff, such as during daily activities, or a follow-up from a reported observation.
- A classification of either potential, suspect, or obvious. If more than one outfall screenings produce one of these classifications, investigation efforts shall be prioritized as:
  - Obvious – Illicit discharge(s) suspected of being sanitary sewer discharges or significantly contaminated would have this classification.
  - Suspect – Numerous physical indicators result in this classification.
  - Potential - These discharges should not be expected to be hazardous to human health and safety.

The start date of the investigation is required to be provided on the City IDDE Tracking Form.

6.2 Investigation Protocol

An investigation of an illicit discharge may result in the source being easily identified or may be complex and should utilize instruction in this manual, the IDDE Field Guide, storm sewer mapping and may require coordination with administrators of interconnected MS4s.

Based on the familiarity of the city and its drainage areas, an initial field evaluation may easily identify the source of an illicit discharge. Once found, the City staff should notify the Project Coordinator. The Project Coordinator is responsible for ensuring the source is eliminated and efforts are documented on the City IDDE tracking form. It is critical that documentation on the City IDDE tracking form is complete to demonstrate illicit discharges have been addressed in accordance with General Permit conditions.

If the source of an illicit discharge is not easily identified, further investigation is necessary and should be guided by the following procedures:

1) Track the illicit discharge to its point of entry into the storm sewer. Tracking can be supplemented with review of the City outfall mapping to identify flow directions and the drainage area. Cross reference the mapping with the City Pollution Prevention Plans' mapping that indicates areas most likely to be the source of pollutants.
2) Conduct a field inspection of the drainage area near the point of entry to identify the potential pollutant source. Document potential sources with photos, ensuring the photos give the appropriate context to the location of the source.

City employees will primarily rely upon visual inspections of the areas in the storm sewer system above the outfall at which an illicit discharge is detected. However, sampling and analysis can be performed as necessary to determine the characteristics of the illicit discharge and to help identify the most likely source. Improper connections and unpermitted cross-connections to the storm sewer system can be detected by utilizing a combination of methods to investigate non-stormwater discharges, such as visual/video inspections, and dye or smoke tracer testing. Additional dry-weather testing at a discharge point assists in identification of abnormal conditions such as sporadic or continuous discharge, which can facilitate tracing of the source. Tracking techniques also include visual inspections of drainage structures and lines, damming lines to isolate areas, indicator monitoring, and optical brightener monitoring traps. Other more elaborate approaches include using remote sensing tools to identify soil moisture, water temperature, and vegetation anomalies associated with illegal dumping activities.

If an illicit discharge is determined to originate outside of the City's property, then the appropriate locality and/or MS4 Program authority should be contacted immediately by the Project Coordinator and the request made to eliminate the discharge. The interconnected MS4 should initiate corrective action per their prescribed process. The Project Coordinator will follow up with the responsible entity to verify the corrective action has been successfully implemented, and the final action will be documented and tracked on the City IDDE Tracking Form. Additional detail for conducting an investigation is provided in the *City IDDE Field Guide*.

6.3 Timeframes for Performing Investigations

In general, the timeframe for initiation of an investigation should be prioritized with first priority given to illicit discharges suspected of being sanitary sewage or otherwise significantly contaminated. More specifically, timeframes for initiating an investigation are established as follows:

- Obvious – First priority, begin investigation within three business days of identification of an illicit discharge.
- Suspect – Second priority, begin investigation within one week of the report of a suspected illicit discharge.
- Potential - Third priority, begin investigation within two weeks of the report of a potential illicit discharge.

If, after performing an investigation of an observed or reported illicit discharge, the source of the discharge has not been identified and the non-stormwater discharge has not been detected again after 6 months, efforts will be documented and the discharged identified as "non-recurring" with "source not found" on the City IDDE Tracking Form. At that time, no further action is necessary. However, investigatory due diligence should include (with documentation):

- The tracking and field inspection methods described in the previous Section were performed;
- At least one additional dry-weather screening during the 6-month time period; and
- At least one wet-weather screening.

If an observed discharge is intermittent, the Project Coordinator or his designee will perform **three separate investigations** attempting to observe the discharge when it is flowing. If these attempts are unsuccessful, the Project Coordinator will document the occurrence and process and no further action is necessary.

7.0 ELIMINATING VERIFIED ILLICIT DISCHARGES

The ultimate goal of the IDDE Program is to eliminate illicit discharges from the MS4. Once an illicit discharge has been identified and an investigation has determined the source of the discharge, the appropriate actions need to be taken and documented to eliminate the discharge.

7.1 Source Elimination

Prohibition of illicit discharge is addressed through the City's stormwater management ordinance, erosion and sediment control ordinance and contract language with contractors performing work in the City. Further, City daily operations intend to prevent illicit discharges through the practices described in the City's Pollution Prevention Plans and Standard Operating Procedures. Through these mechanisms (See Table 5), the City can eliminate illicit discharges in which the source occurs within its limits.

Table 5. City authority for prohibition of illicit discharges

Source/Discharge Type	Elimination Authority
General	Stormwater Management Ordinance Erosion and Sediment Control Ordinance
Staff During Daily Operations	Pollution Prevention Plans/Standard Operating Procedures
Contractor Operations	Contractor Language in Contract

When an illicit discharge originates within the City's property, the Project Coordinator will take the necessary corrective action to eliminate the discharge. Follow-up inspections may be necessary to ensure the discharge into the City storm drain system has ceased. Periodic inspections should be conducted during both wet and dry- weather after the initial illicit discharge to confirm the identified discharge has been eliminated. Actions and resolutions must be documented and maintained on file for 3 years.

When the source of an illicit discharge originates outside of the city, and therefore the City does not have authority to eliminate the source, the DEQ or interconnected MS4 should be contacted by the Project Coordinator, as applicable. Figure 4 provides examples of the enforcement authorities to contact based on the type of illicit discharge. This list is not all-inclusive and is based on typical sources of illicit discharges. Reports of illicit discharge to an outside agency should be maintained on file along with information related to the case, including dates, locations, photos, results of screenings and investigations, and identified sources.

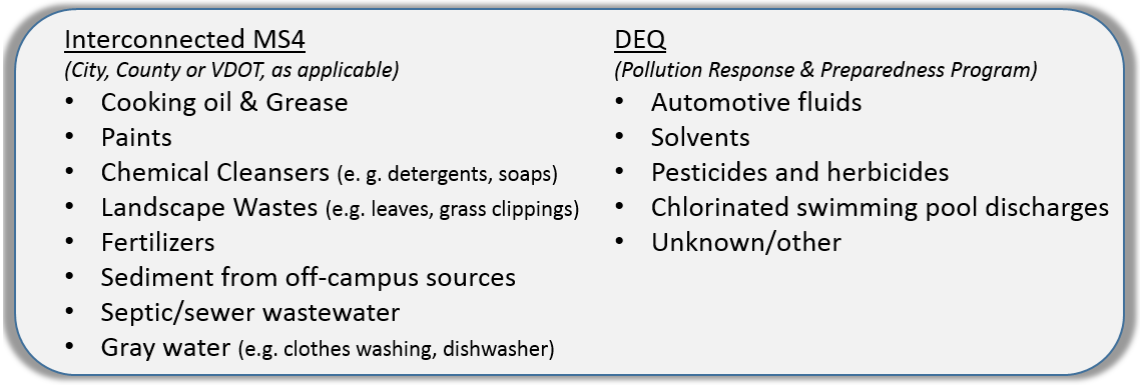

Figure 4. Illicit discharge enforcement contacts for off-site illicit discharges entering the City MS4s

7.2 Follow-up on Source Elimination

Prior to closure of an illicit discharge investigation, the City is required to conduct or request a follow- up investigation to ensure the illicit discharge has been eliminated. When the source originated in the City, the follow-up investigation may simply include a field inspection with documentation including photos where the source had previously been identified. In the case of an out of the city illicit discharge, follow-up should include a request for information from the appropriate upstream enforcement entity. Documentation of outside of the city efforts is also required on the City IDDE Tracking Form.

7.3 Administrative Action, Enforcement and Penalties

Prohibition of illicit discharges is addressed within the Stormwater Management Ordinance, Erosion and Sediment Control Ordinance and individual Contract language. If an individual or entity is identified during an illicit discharge investigation to be responsible for intentionally contributing to the discharge, the following binding documents will be utilized to conduct any necessary administrative action, enforcement, or penalties.

- Stormwater Management Ordinance (Chapter 245 of City Code) – No person shall discharge or cause to be discharged into the municipal storm drain system or watercourses any materials that cause or contribute to a violation of applicable water quality standards, other than storm water. §245-18 outlines possible penalties.
- Erosion and Sediment Control Ordinance (Chapter 241 of City Code) - The purpose of this ordinance is to prevent degradation of properties, stream channels, waters and other natural resources of the City of Colonial Heights by establishing requirements for the control of soil erosion, sediment deposition, and nonagricultural runoff, and by establishing procedures whereby these requirements shall be administered and enforced.

- Contract Language – Whenever the Department of Public Works finds that a person has violated a prohibition or failed to meet a requirement, the Department may order compliance by written notice of violation to the responsible person. The notice requirements range from performing analysis and reporting to ceasing all operations to payment of fines and remediation costs.

The City may refer the complaint to DEQ for further investigation following their procedures, including enforcement provisions, in accordance with the Code of Virginia (§18.2-119) as appropriate.

7.4 Reportable Spills

If any unusual or extraordinary discharge should occur from a facility and the discharge enters or could be expected to enter surface waters, the City shall promptly notify, in no case later than within 24 hours, DEQ by telephone after the discovery of the discharge. This notification shall provide all available details of the incident, including any known adverse effects on aquatic life. Unusual and extraordinary discharges include but are not limited to any discharge resulting from:

- Unusual spillage of materials resulting directly or indirectly from processing operations;
- Breakdown of processing or accessory equipment;
- Spills of large quantities of chemicals or fuels; and
- Flooding or other acts of nature.

NOTE: The immediate (within 24 hours) reports required to be provided to DEQ may be made to the appropriate Regional Office Pollution Response Program as found at http://deq.virginia.gov/Programs/PollutionResponsePreparedness.aspx. Reports may be made by telephone or by fax. For reports outside normal working hours, leave a message and this shall fulfill the immediate reporting requirement. For emergencies, the Virginia Department of Emergency Services maintains a 24- hour telephone service at 1-800-468-8892.

APPENDIX A: The City IDDE Points of Contact

City IDDE Points of Contact

Below is a table of points of contact that can be useful throughout the various components of the program.

City of Colonial Heights		
Troy McCain Project Coordinator mccaint@colonialheightsva.gov		(804) 520-9334
Interconnected MS4 Localities/Entities		
Chesterfield County	Scott Flanigan Water Quality Manager flanigans@chesterfield.gov	(804) 748-1035
Virginia Department of Transportation (VDOT)	Chris Swanson State Ms4/Stormwater Management Engineer Chris.Swanson@VDOT.Virginia.gov	(804) 786-6839
Virginia State University (VSU)	Jane Harris Assistant VP for Capital Outlay and Facilities	(804) 524-6239
Agencies		
DEQ	Pollution Response & Preparedness Program	(804) 698-4000
Emergency Notification		911
National Response Center		(800) 424-8802

APPENDIX B: The City Outfall Reconnaissance Inspection Form

DRY-WEATHER FIELD REPORT
STORMWATER MANAGEMENT PROGRAM
CITY OF COLONIAL HEIGHTS, VIRGINIA

DATE: _____

TIME: _____ ☐ **AM** ☐ **PM**

FILED BY: _____

- ENVIRONMENTAL INFORMATION -

OUTFALL ID: _____

MOST RECENT RAIN EVENT ▼

Time Lapse:

☐ < 2 days ☐ > 2 days

Estimated Amount:

☐ < 0.5 inches ☐ > 0.5 inches

HYDROLIC UNIT CODE (HUC) ▼

☐ **JA40** *(Appomattox River I and II)*

☐ **JA44** *(Swift Creek, Old Town Creek*

☐ **JA-J** *(Fleets Branch)*

PROXIMITY TO WATERCOURSE ▼

☐ **Corridor** *(In or adjacent to watercourse)*

☐ **Upland** *(Not adjacent to watercourse)*

☐ **Tributary** *(In or near basin, wetland, etc.)*

SURROUNDING LAND USE(S) ▼

☐ Industrial ☐ Commercial ☐ Residential ☐ Institutional ☐ Open space *(check all that apply)*

- OUTFALL OBSERVATIONS -

PIPE OBSTRUCTIONS ▼

☐ Collapsed pipe ☐ Roots\brush ☐ Earth\sediment ☐ Rock\rubble ☐ No obstruction

PIPE SITUATION ▼

☐ Stabilized embankment ☐ Eroded embankment ☐ On\In concrete structure

☐ In\Near watercourse ☐ Upland area\away from watercourse ☐ Maintained earth

- ILLICIT DISCHARGE INDICATORS -

ODOR

☐ **None** *(no detectable scent)* ☐ **Sewage** ☐ **Rancid\Sour\Pungent**

☐ **Sulfide** *(rotten eggs)* ☐ **Natural gas** ☐ **Petroleum** *(gas)*

☐ **Other:**

_____

APPEARANCE

☐ **Normal** ☐ **Oily sheen\film** ☐ **Cloudy** ☐ **Suds** ☐ **Colored** *(describe)*: _____

☐ **Other:**

_____

Deposits\Stains:

☐ **Oily** ☐ **Paint** ☐ **Flow line** ☐ **Other** *(describe)*: _____

FLOATABLES

☐ **None** ☐ **Algae** ☐ **Dead fish** ☐ **Suspended solids** ☐ **Sewage**

☐ **Other:**

_____

- REPORT CONTINUED NEXT PAGE -

FLOW CONDITIONS	☐ 1 - No flow\interior conditions are dry ☐ 2 - No visible flow\interior conditions are moist or damp ☐ 3 - Visible flow **Flow Estimates:** Width of flow surface: ____ inches ____ feet Approximate depth of flow: ____ inches _____ feet Approximate flow rate: _____ feet per second

- REPORT SUMMARY CHARACTERIZATION -

☐ Unlikely Illicit Discharge ☐ Suspected Illicit Discharge ☐ Obvious Illicit Discharge

	Photographic Documentation of Outfall Must be Attached to Complete Report

ADDITIONAL NOTES:

_____

_____

_____

REPORTER SIGNATURE: _____

APPENDIX C: The City Outfall Inventory

The City of Colonial Heights Outfall Reconnaissance Inventory

OUTFALL_ID	Subwatershed	Nearest_Ac	HUC_Code	Est_Drain_Area	Outfall_Ty	__of_Pipes	Pipe_s__Ma	Pipe_s__Di	Pipe_s__Sh	Other_Pipe	Pipe_s__Su	Sediment_i	Channel_Sh	Channel_Ma	Channel_Ty	Channel_De	Top_Width_	Bottom_Wid	Channel_Se	Obstructio	Other_Obst	Regulated
OF-001	Oldtown Creek	Old Town	JA-J	0	Pipe	Single	RCP	36 in.	Circular	NA	No	None	N/A	N/A	N/A	NA	NA	NA	N/A	None	NA	Yes
OF-002	Swift Creek	Nantucket Ct	JA-J	0	Pipe	Double	RCP	15 in.	Circular	NA	No		Irregular	Earthen	Collected Flow	10	25	15	Partially Obstructed	Roots/Collapse	Eroding embankment	No
OF-003	Appomattox	Kennon Point	JA-J	0	Pipe	Single	RCP	36 in.	Circular	NA	Partially		Irregular	Earthen	Collected Flow	1	4	2	Partially Obstructed	Other	Sediment and brush	Yes
OF-004	Oldtown Creek	Temple	JA-J	0	Pipe	Single	RCP	24 in.	Circular	NA	No	Partially Obstructed	Irregular	Earthen	Collected Flow	NA	NA	NA	Fully Obstructed	Other	All	Yes
OF-005	Swift Creek	Forest View	JA-I	0	Pipe	Single	CMP	36 in.	Circular	NA	No		N/A	N/A	N/A	0	0	0	N/A	None	NA	Yes
OF-006	Appomattox	Clifton Drive	JA-J	0	Pipe	Single	RCP	36 in.	Circular	NA	Fully	N/A	N/A	N/A	N/A	0	0	0	N/A	None	NA	Yes
OF-007	Oldtown Creek	Temple	JA-J	0	Pipe	Single	RCP	24 in.	Circular	NA	No	Partially Obstructed	Irregular	Earthen	Collected Flow	NA	NA	NA	Fully Obstructed	Other	All	Yes
OF-008	Swift Creek	Forest View	JA-I	0	Pipe	Single	N/A	24 in.	Circular	NA	Partially	Partially Obstructed	N/A	N/A	N/A	0	0	0	N/A	Roots/Brush	Debris	Yes
OF-009	Appomattox	Yacht Basin Drive	JA-J	0	Pipe	Single	RCP	48 in.	Circular	NA	No	N/A	Irregular	Earthen	Collected Flow	30	60	15	N/A	Collaped Structure	Erosion and earth	Yes
OF-010	Oldtown Creek	Old Town	JA-J	0	Pipe	Single	RCP	24 in.	Eliptical	NA	No	None	Irregular	Rip Rap	Constructed Ditch	NA	NA	NA	None	Roots/Brush	NA	No
OF-011	Swift Creek	Sherwood at Springdale	JA-I	0	Pipe	Single	Steel	21 in.	Circular	NA	No	None	N/A	N/A	N/A	0	0	0	None	None	NA	Yes
OF-012	Appomattox	Royal Oak	JA-J	0	Pipe	Double	RCP	36 in.	Circular	NA	No	None	Irregular	Earthen	Collected Flow	1	4	1	Partially Obstructed	Collaped Structure	Rocks	Yes
OF-013	Swift Creek	Sherwood Drive	JA-I	0	Pipe	Single	RCP	24 in.	Circular	NA	No	N/A	Triangluar	Concrete	Constructed Ditch	1	3	1	None	None	NA	Yes
OF-014	Oldtown Creek	Conduit	JA-J	0	Pipe	Single	RCP	48 in.	Circular	NA	No	None	Irregular	Earthen	Collected Flow	1	3	1	None	Roots/Brush	NA	Yes
OF-015	Swift Creek	Sherwood Drive	JA-I	0	Pipe	Single	RCP	24 in.	Circular	NA	No		Triangluar	Concrete	Constructed Ditch	1	3	1	None	None	NA	Yes
OF-016	Oldtown Creek	Temple at Conduit	JA-J	0	Pipe	Double	RCP	96 in.	Box	NA	No	None	Irregular	Earthen	Collected Flow	2	18	12	Partially Obstructed	Other	Sediment	Yes
OF-017	Swift Creek	Sherwood Drive	JA-I	0	Pipe	Single	RCP	30 in.	Circular	NA	No	None	Triangluar	Concrete	Constructed Ditch	1	3	1	None	None	NA	Yes
OF-018	Oldtown Creek	Old Town	JA-J	0	Pipe	Single	CMP	12 in.	Circular	NA	No	None	N/A	N/A	N/A	NA	NA	NA	N/A	None	NA	Yes
OF-019	Oldtown Creek	Old Town	JA-J	0	Pipe	Single	RCP	24 in.	Circular	NA	No	None	Irregular	Rip Rap	Collected Flow	8	15	6	None	Roots/Brush	NA	Yes
OF-020	Swift Creek	Forest View	JA-I	0	Pipe	Single	CMP	36 in.	Circular	NA	Partially	None	N/A	N/A	N/A	0	0	0	N/A	None	NA	Yes
OF-021	Oldtown Creek	Old Town	JA-J	0	Pipe	Double	Steel	27 in.	Eliptical	NA	No	N/A	Irregular	Rip Rap	Collected Flow	6	12	5	N/A	None	NA	Yes
OF-022	Oldtown Creek	Newcastle	JA-J	0	Pipe	N/A	N/A	N/A	N/A	NA	N/A	N/A	Irregular	Rip Rap	Collected Flow	3	8	3	N/A	Roots/Brush	Badly overgrown	Yes
OF-023	Swift Creek	Springdale	JA-I	0	Pipe	Single	RCP	36 in.	Circular	NA	No		N/A	N/A	N/A	0	0	0	None	Collaped Structure	NA	Yes
OF-024	Oldtown Creek	Boulevard	JA-J	0	Pipe	Single	RCP	18 in.	Circular	NA	No	None	N/A	N/A	N/A	NA	NA	NA	N/A	None	NA	Yes
OF-025	Swift Creek	Boulevard	JA-I	0	Pipe	Single	RCP	30 in.	Circular	NA	Partially	None	N/A	N/A	N/A	0	0	0	N/A	Other	Standing water per bridge.	Yes
OF-026	Oldtown Creek	Cedar Lane	JA-J	0	Pipe	Single	RCP	30 in.	Circular	NA	No	None	Irregular	Rip Rap	Constructed Ditch	3	10	4	None	None	NA	Yes
OF-027	Swift Creek	Boulevard	JA-I	0	Pipe	Single	RCP	18 in.	Circular	NA	No	Partially Obstructed	N/A	N/A	N/A	0	0	0	Partially Obstructed	Other	Rocks, sediment, brush, trash.	Yes
OF-028	Swift Creek	Longhorn Drive	JA-I	0	Pipe	Single	RCP	48 in.	Circular	NA	No	None	Irregular	Concrete	Constructed Ditch	4	12	3	None	None	NA	Yes
OF-029	Swift Creek	Bearchase Court	JA-I	0	Pipe	Single	RCP	24 in.	Circular	NA	No	None	Irregular	Rip Rap	Collected Flow	1	NA	2	Partially Obstructed	Roots/Brush	Trash	Yes
OF-030	Swift Creek	Waterfront Drive	JA-J	0	Pipe	Single	RCP	48 in.	Circular	NA	Partially	Partially	Irregular	Rip Rap	Collected	NA	NA	15	Partially	Other	Rocks, raised	Yes

OUTFALL_ID	Subwatershed	Nearest_Ac	HUC_Code	Est_Drain_Area	Outfall_Ty	__of_Pipes	Pipe_s__Ma	Pipe_s__Di	Pipe_s__Sh	Other_Pipe	Pipe_s__Su	Sediment_i	Channel_Sh	Channel_Ma	Channel_Ty	Channel_De	Top_Width_	Bottom_Wid	Channel_Se	Obstructio	Other_Obst	Regulated
												Obstructed			Flow				Obstructed		grade.	
OF-031	Swift Creek	Ellerslie	JA-I	0	Pipe	Single	RCP	18 in.	Circular	NA	No	None	Trapezoidal	Concrete	Constructed Ditch	3	3	1	None	None	NA	No
OF-032	Swift Creek	Taylor	JA-I	0	Pipe	Single	RCP	18 in.	Circular	NA	No		N/A	N/A	N/A	0	0	0	None	Other	Sediment	Yes
OF-033	Swift Creek	Taylor	JA-I	0	Pipe	Single	RCP	36 in.	Circular	NA	Partially	None	Irregular	Earthen	Collected Flow	4	10	4	None	None	NA	Yes
OF-034	Swift Creek	Huntington	JA-I	0	Pipe	Single	RCP	24 in.	Circular	NA	No	None	N/A	N/A	N/A	0	0	0	None	None	NA	Yes
OF-035	Swift Creek	Huntington	JA-I	0	Pipe	Single	PVC	36 in.	Circular	NA	No	None	N/A	N/A	N/A	0	0	0	N/A	None	NA	Yes
OF-036	Swift Creek	Comstock Drive	JA-J	0	Pipe	Single	RCP	36 in.	Circular	NA	Partially		Irregular	Earthen	Collected Flow	NA	0	0	Partially Obstructed	Other	Rocks and earth.	No
OF-037	Appomattox	Waterfront	JA-J	0	Pipe	Single	RCP	24 in.	Eliptical	NA	No	None	N/A	N/A	N/A	0	0	0	N/A	None	NA	Yes
OF-038	Swift Creek	Sherwood Drive	JA-I	0	Pipe	Single	RCP		Circular	NA	No	None							None	None	NA	Yes
OF-039	Fleets Branch	Bradsher Ave	JA-J	0	Pipe	Single	RCP	54 in.	Circular	NA	No	None	Irregular	Earthen	Collected Flow	15	40	10	None	None	NA	Yes
OF-040	Oldtown Creek	Snead	JA-J	0	Pipe	Single	CMP	36 in.	Circular	NA	No	None	Irregular	Concrete	Constructed Ditch	12	20	6	None	Earth, structure	Sediment and brush	No
OF-041	Oldtown Creek	Ridge	JA-J	0	Pipe	Triple	CMP	36 in.	Eliptical	NA	No	None	Irregular	Earthen	Collected Flow	3	10	4	None	Some rip-rap	NA	No
OF-042	Fleets Branch	Chesterfield Ave	JA-J	0	Pipe	Single	RCP	48 in.	Circular	NA	No	None	Trapezoidal	Concrete	Constructed Ditch	1	6	2	None	None	NA	No
OF-043	Oldtown Creek	Meridian	JA-J	0	Box culvert	Double	RCP	54 in.	Box	NA	No	None	Trapezoidal	Concrete	Constructed Ditch	3	12	4	None	None	NA	No
OF-044	Swift Creek	Ayrshire	JA-I	0	Pipe	Single	RCP	24 in.	Circular	NA	Partially	None	Irregular	Earthen	Collected Flow	1	8	3	Partially Obstructed	Sediment, brush	NA	No
OF-045	Fleets Branch	Cambridge	JA-J	0	Box, Pipe	Double	RCP	48 in.	Box	NA	Partially	None	Irregular	Earthen	Collected Flow	25	40	8	Partially Obstructed	Trees, brush	NA	No
OF-046	Oldtown Creek	Wildwood	JA-J	0	Pipe	Single	RCP	24 in.	Circular	NA	No	None	Irregular	Earthen	Collected Flow	20	15	5	Partially Obstructed	Trees/Collapse	Severe erosion	Yes
OF-047	Oldtown Creek	Driftwood	JA-J	0	Pipe	Single	RCP	18 in.	Circular	NA	No	None	Irregular	Earthen	Collected Flow	20	15	8	Partially Obstructed	Trees, structure	Partial collapse at outfall	Yes
OF-048	Oldtown Creek	Snead	JA-J	0	Pipe	Single	RCP	12 in.	Circular	NA	No	None	Irregular	Earthen	Collected Flow	5	10	3	None	None	NA	No
OF-049	Appomattox	Covington	JA-J	0																		
OF-050	Swift Creek	Forest View	JA-I	0	Pipe	Single	RCP		Circular	NA			N/A	N/A	N/A	NA	NA	NA	N/A	None	NA	No
OF-051	Swift Creek	Pertshire	JA-I	0	Pipe	Single	CMP	60 in.	Circular	NA	No	None	Trapezoidal	Concrete	Constructed Ditch	3	10	3	None	None	NA	No
OF-052	Oldtown Creek	Concord	JA-J	0	Pipe	Single	RCP	24 in.	Circular	NA	No	None	N/A	N/A	N/A	NA	NA	NA	N/A	None	NA	Yes
OF-053	Oldtown Creek	Concord	JA-J	0	Pipe	Single	RCP	18 in.	Circular	NA	No	None	N/A	N/A	N/A	NA	NA	NA	N/A	None	NA	Yes
OF-054	Oldtown Creek	Concord	JA-J	0	Pipe	Single	RCP	18 in.	Circular	NA	No	None	N/A	N/A	N/A	NA	NA	NA	N/A	None	NA	Yes
OF-055	Fleets Branch	Orchard	JA-J	0	Pipe	Single	RCP	12 in.	Circular	NA	Partially	Partially Obstructed	Irregular	Earthen	Collected Flow	2	8	1	Partially Obstructed	Brush, earth	NA	No
OF-056	Appomattox	Duke of Gloucester	JA-J	0	Pipe	Single	RCP		Circular	NA	No	Partially Obstructed	Irregular	Earthen	Collected Flow	5	15	3	Partially Obstructed	Leaves/Debris	Fence on Easement	No
OF-057	Swift Creek	Fairmont/Winston	JA-I	0	Pipe	Single	CMP	48 in.	Circular	NA	Partially	None	Irregular	Earthen	Collected Flow	1.5	8	2	None	Rip-rap		Yes
OF-058	Swift Creek	Nottingham (end)	JA-I	0	Pipe	Single			Circular		No		Irregular	Rip Rap	N/A					Rip-rap		Yes
OF-059	Swift Creek	Shade Tree	JA-I	0	Pipe	Single	RCP	54 in.	Circular	NA	Partially	Partially Obstructed	Irregular	Rip Rap	Collected Flow	1	18	4	None	None		Yes
OF-060	Swift Creek	Hemlock (end)	JA-I	0	Pipe	Single	RCP	18 in.	Circular	NA	No	None	Irregular	Rip Rap	Collected Flow	4	10	1	Partially Obstructed	Earth	NA	Yes
OF-061	Appomattox	Breezy Hill	JA-J	0	Pipe	Single	RCP															Yes
OF-062	Appomattox	Charles Dimmock	JA-J	0	Pipe																	Yes
OF-063	Oldtown Creek	Fairfax Ave	JA-J	0	Pipe	Single	RCP	18 in.														Yes

OUTFALL_ID	Subwatershed	Nearest_Ac	HUC_Code	Est_Drain_Area	Outfall_Ty	__of_Pipes	Pipe_s__Ma	Pipe_s__Di	Pipe_s__Sh	Other_Pipe	Pipe_s__Su	Sediment_i	Channel_Sh	Channel_Ma	Channel_Ty	Channel_De	Top_Width_	Bottom_Wid	Channel_Se	Obstructio	Other_Obst	Regulated
OF-064	Oldtown Creek	Fairfax Ave (in culvert)	JA-J	0	Pipe	Single	RCP	24 in.														Yes
OF-066	Oldtown Creek	sadler	JA44	0	Pipe	Single	RCP	18 in.	Circular	na	No	None	Irregular	Earthen	Collected Flow	na	3ft	3ft	None	None	na	
OF-067	Oldtown Creek	taswell	JA44	0	Pipe	Single	RCP	18 in.	Circular	na	No	Partially Obstructed	Triangluar	Earthen	Collected Flow	na	na	na	Fully Obstructed	Roots/Brush	trash yard waste	
OF-068	Swift Creek	taswell	JA44	0	Pipe	Single	RCP	18 in.	Circular	na	Partially	None	Irregular	Rip Rap	Constructed Ditch	na	na	na	Partially Obstructed	Other	rip rap in bmp as designed	
OF-070	Swift Creek	camelot	JA44	0	Pipe	Single	RCP	18 in.	Circular	na	No	None	Irregular	Earthen	Collected Flow	na	na	na	None	Roots/Brush	na	
OF-071	Swift Creek	seaton	JA44	0	Pipe	Single	RCP	18 in.	Circular	na	Partially	N/A	Irregular	Earthen	Collected Flow	na	na	na	None	None	na	
OF-072	Swift Creek	tudor	JA44	0	Pipe	Single	RCP	15 in.	Circular	na	No	None	Irregular	Rip Rap	Collected Flow	na	na	na	None	None	ivy	
OF-073	Swift Creek	nottingham	JA44	0	Pipe	Single	RCP	15 in.	Circular	na	No	None	Trapezoidal	Rip Rap	Collected Flow	na	na	na	None	None	na	
OF-075	Swift Creek	hargrave	JA44	0	Pipe	Single	RCP	24 in.	Circular	na	No	None	Triangluar	Rip Rap	Collected Flow	na	na	na	None	None	na	
OF-076	Swift Creek	yew	JA44	0	Pipe	Single	RCP	18 in.	Circular	na	No	None	Triangluar	Rip Rap	Constructed Ditch	na	na	na	None	None	na	
OF-077	Swift Creek	east	JA44	0	Pipe	Single	RCP	18 in.	Circular	na	No	None	Trapezoidal	Rip Rap	Constructed Ditch	na	na	na	None	Other	overgrown with ivy	
OF-078	Oldtown Creek	brookedge	JA44	0	Pipe	Single	RCP	24 in.	Circular	na	No	None	Trapezoidal	Concrete	Constructed Ditch	na	na	na	None	None	none	
OF-079	Oldtown Creek	brookedge	JA44	0	Pipe	Single	RCP	24 in.	Circular	na	Partially	None	Irregular	Earthen	Collected Flow	na	na	na	Partially Obstructed	Other	earth	
OF-080	Appomattox	chesterfield	JA40	0	Pipe	Single	RCP	15 in.	Circular	na	No	None	Irregular	Earthen	Constructed Ditch	4ft	10ft	3ft	None	Other	tall grass	
OF-081	Appomattox	chesterfield	JA40	0	Pipe	Single	RCP	15 in.	Circular	na	No	None	Irregular	Earthen	Constructed Ditch	4ft	10ft	2ft	Partially Obstructed	Other	tall grass	
OF-082	Swift Creek	dunlop farms blvd	JA44	0	Pipe	Single	RCP	36 in.	Circular	na	No	None	Triangluar	Rip Rap	Collected Flow	na	na	na	None	Other	small saplings	
OF-083	Swift Creek	bluffs	JA44	0	Pipe	Single	RCP	24 in.	Circular	na	No	None	Triangluar	Concrete	Constructed Ditch	2ft	4ft	2ft	None	None	na	
OF-084	Swift Creek	bluffs	JA44	0	Pipe	Single	RCP	24 in.	Circular	na	No	Fully Obstructed	Irregular	Earthen	Collected Flow	na	na	na	Fully Obstructed	Other	silt	
OF-085	Swift Creek	windmere	JA44	0	Pipe	Single	RCP	30 in.	Circular	na	Partially	None	N/A	Earthen	Collected Flow	na	na	na	Partially Obstructed	Other	silt/sand	
OF-086	Swift Creek	heroda	JA44	0	Pipe	Single	RCP	15 in.	Circular	na	Fully	None	Irregular	Earthen	Collected Flow	na	na	na	Partially Obstructed	Other	lilly pads	
OF-088	Appomattox	whipporwill	JA40	0	Pipe	Single	PVC	15 in.	Circular	na	No	None	Irregular	Earthen	Collected Flow	na	na	na	None	None	na	
OF-090	Appomattox	deerwood	JA40	0	Pipe	Single	PVC	24 in.	Circular	na	No	None	Triangluar	Rip Rap	Constructed Ditch	na	na	na	Partially Obstructed	Other	trees silt	
OF-091	Appomattox	lexington dr	JA40	0	Pipe	Single	RCP	18 in.	Circular	na	No	None	Irregular	Earthen	Collected Flow	na	na	na	Fully Obstructed	Collaped Structure	roots	
OF-092	Appomattox	choptank	JA40	0	Pipe	Single	RCP	15 in.	Circular	na	No	None	Irregular	Earthen	Collected Flow	na	na	na	None	Roots/Brush	na	
OF-093	Appomattox	whitehall	JA40	0	Pipe	Single	Steel	15 in.	Circular	na	No	None	Irregular	Rip Rap	Collected Flow	na	12 ft	12 ft	Partially Obstructed	Roots/Brush	na	
OF-094	Appomattox	duke of gloucester	JA40	0	Pipe	Single	RCP	18 in.	Circular	na	No	None	Irregular	Concrete	Constructed Ditch	na	na	na	None	Roots/Brush	earth trees	
OF-096	Appomattox	breezy hill	JA40	0	Pipe	Single	RCP	15 in.	Circular	na	No	None	Trapezoidal	Concrete	Constructed Ditch	na	na	na	None	None	na	

APPENDIX D: The City IDDE Tracking Form

The City of Colonial Heights IDDE Tracking Form

TRADE NAME	FULL NAME	ADDRESS #	STREET NAME	CITY	STATE	ZIP	LICENSE NO	ALTERNATIVE CONTACT	FACILITIES	TYPE OF DISCHARGE	PAST VIOLATIONS	STATUS	INCIDENT DATE	ACTION TAKEN	DATE CLOSED

APPENDIX E: The City Knowledge Check Quiz

IDDE Knowledge Check Quiz

Name: _____

Date: _____

1. IDDE stands for:
    a. Illegal Dormant Discharge and Experiment
    b. Illicit Discharge Detection and Elimination
    c. Important Discovery Development and Explosion
    d. Impulsive Document Disposal and Exposure

2. An illicit discharge is defined as:
    a. Wearing away of soils by wind, air, and rain.
    b. A discharge from a harmful chemical reaction
    c. Discharges from permitted industrial operations
    d. Any discharge that is not composed entirely of stormwater

3. The IDDE program outlines actions to eliminate illicit discharges including all of the following except:
    a. Identify the source
    b. Ignore the complaint
    c. Investigate the discharge
    d. Document activities

4. The severity index classifications to prioritize illicit discharges do NOT include:
    a. Obvious
    b. Preventative
    c. Potential
    d. Suspect

5. If the source of an Illicit Discharge is not easily identifiable you should:
    a. Leave the site
    b. Come back next year
    c. Call the police department
    d. Track the discharge to its point of entry into the drainage system and document conditions

6. If the illicit discharge originates outside of the property the proper action is to:
    a. Contact the adjacent locality/authority and request the elimination of the discharge
    b. File charges in court.
    c. Ignore it because you aren't causing it.
    d. Re-inspect at a later date.

7. The goal of the IDDE program is to:
    a. Eliminate non-stormwater discharges
    b. Prevent erosion
    c. Prevent overuse of fertilizers
    d. Protect animal welfare.

8. True or False: To qualify as an illicit discharge it must occur continuously, and one time episodes do not qualify.

9. Which is these sources <u>is</u> an illicit discharge:
    a. Waterline flushing
    b. Air conditioning condensate
    c. Automotive fluids
    d. Fire-fighting activities

10. An outfall can be defined as:
    a. A drop inlet in the parking lot
    b. A filter that separates oil and water
    c. A location where concentrated flow discharges to surface waters
    d. A low lying wet area commonly filled with cattails

Answer Key

1. IDDE stands for
    a. Illegal Dormant Discharge and Experiment
    b. ~~Illicit Discharge Detection and Elimination~~
    c. Important Discovery Development and Explosion
    d. Impulsive Document Disposal and ExposureF

2. An illicit discharge is defined as:
    a. Wearing away of soils by wind, air, and rain.
    b. A discharge from a harmful chemical reaction
    c. Discharges from permitted industrial operations
    d. ~~Any discharge that is not composed entirely of stormwater~~

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    a. Identify the source
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    b. ~~Preventative~~
    c. Potential
    d. Suspect

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APPENDIX F: The City Annual Training Documentation Form

The City of Colonial Heights Annual IDDE Training Documentation Form

THIS SECTION TO BE COMPLETE BY PROJECT COORDINATOR OR DESIGNEE ONLY		*THIS SECTION TO BE COMPLETED BY STAFF RECEIVING TRAINING*	
Staff identified to receive training			
Name (Printed)	**Position**	**Staff Signature**	**Date of Training**

APPENDIX G: The City IDDE Program Support Mapping

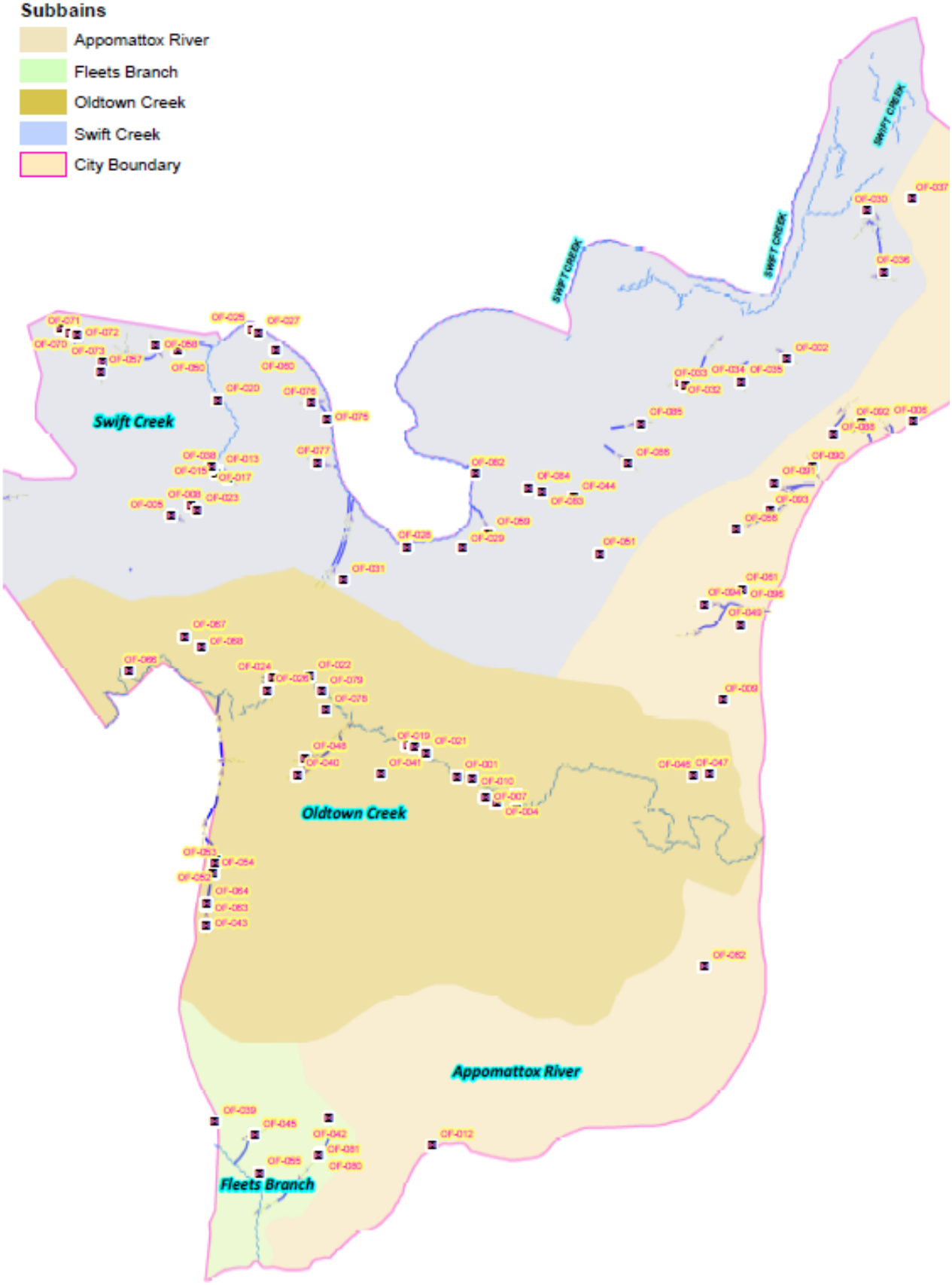
Legend

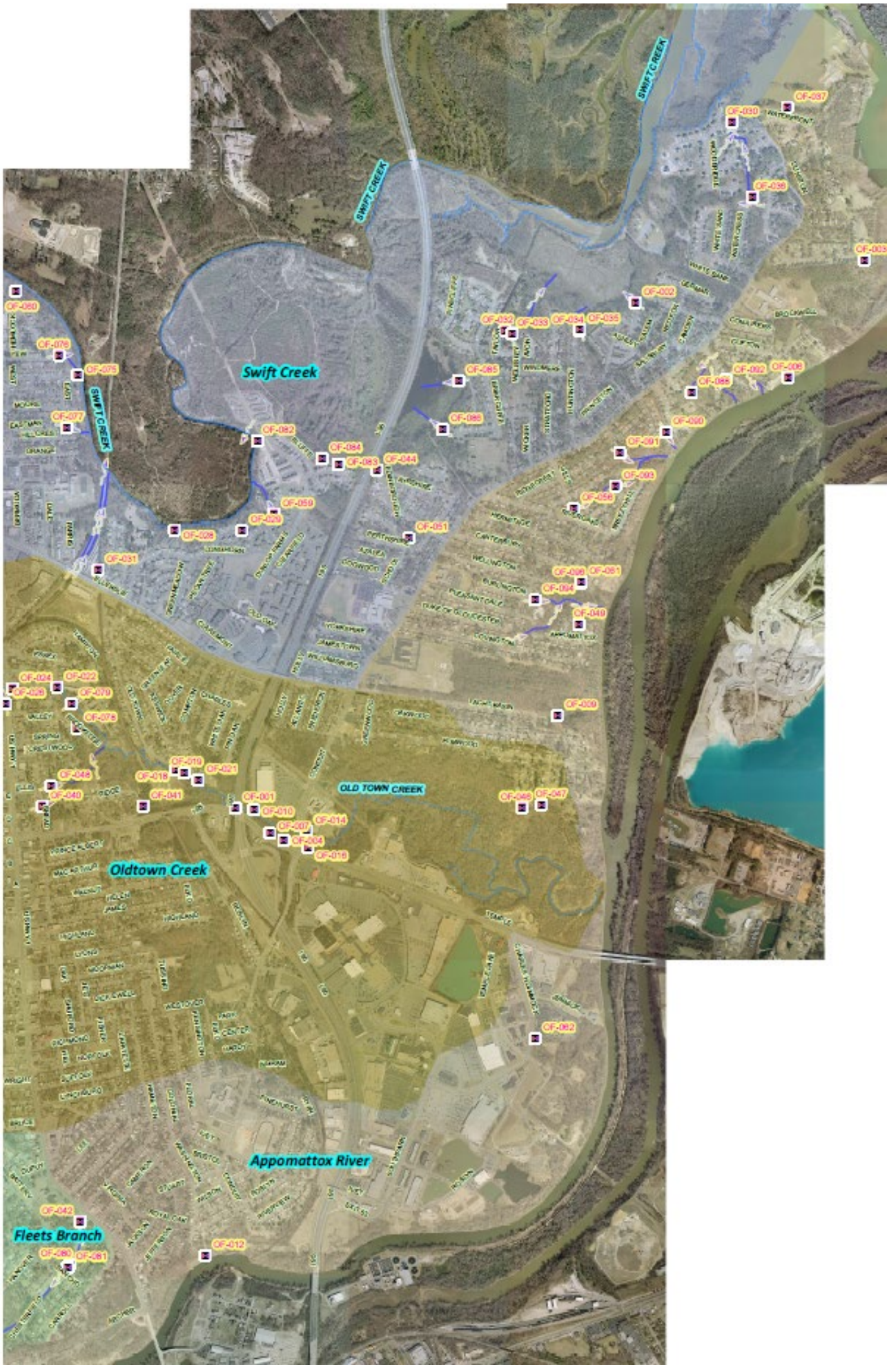
- Outfalls

CH Basins Final

Subbains

- Appomattox River
- Fleets Branch
- Oldtown Creek
- Swift Creek
- City Boundary




Swift Creek
SWIFT CREEK
SWIFT CREEK
SWIFT CREEK
OLD TOWN CREEK
Oldtown Creek
Appomattox River
Fleets Branch
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OF-003
OF-002
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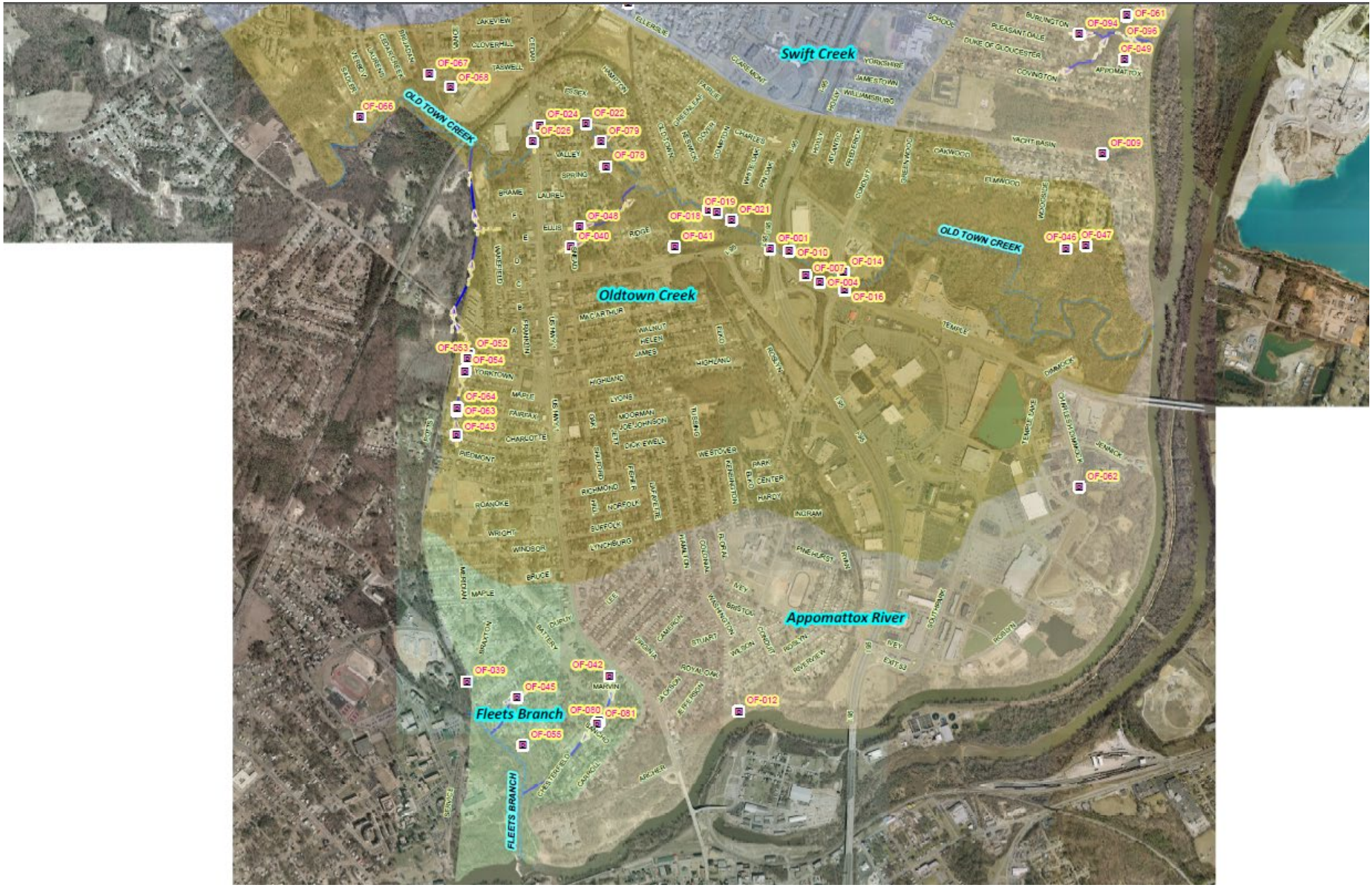
OF-081
OF-012


Swift Creek
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Fleets Branch
FLEETS BRANCH
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OF-055
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Swift Creek
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Appomattox River
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BRIAN
SHERWOOD
LAKEWOOD
FORESTVIEW
ASHBY
BIRCH
YEW
WEST
EAST
MOORE
EASTMAN
HILLCREST
ORANGE
ROSS
US HWY 1
WILTON
DALE
FARRIS
ELLERSLIE
DAVIS
LAKE
WOODLAWN
PICKETT
LAKEVIEW PARK
CABELL
PANDOLA
BRAMERTON BRIDGE
SWIFT CREEK
WINSTON
NORTHINGHAM
NORWOOD
HOMESTEAD
BILTMORE
LAKEVIEW
CLOVERHILL
TASWELL
CEDAR
CEDAR CREEK
BRIARDAN
LAUREL
SALEM
VERBOY
ESSEX
HAMPTON
OLD TOWN
GREENLEAF
FAIRDALE
NEWMAN
DOVER
COMPTON
CHARLES
WHITE OAK
PIN OAK
HOLLY
ATLANTIC
FREDERICK
CONDUIT
GREENWOOD
OAKWOOD
ELMWOOD
YACHT BASIN
VALLEY
SPRING
CRESTWOOD
LONGHORN
GREENMEADOW
PECAN TREE
DUNLOP FARMS
CLEARFIELD
HOLLY
DOGWOOD
SCHOOL
OLD OAK
CLAREMONT
YORKSHIRE
JAMESTOWN
WILLIAMSBURG
PERTHSHIRE
AZALEA
HAWICK
EDINBOROUGH
AYRSHIRE
DUNDON
RIVEROAKS
RIDGECREST
HILLS
CANTERBURY
WELLINGTON
BURLINGTON
PLEASANT DALE
DUKE OF GLOUCESTER
COVINGTON
APPOMATTOX
PINECLIFFE
TAYLOR
WELLESLEY
AVON
WINDMERE
BRIARCLIFFE
WICKER
STRATFORD
HUNTINGTON
PRINCETON
LEXINGTON
VALMARD
ASHLEY
SAXBY
REDLION
CAMDEN
SALISBURY
GERMAR
WHITE BANK
BROCKWELL
CONJURERS
CLIFTON
WATERFRONT
WOODBRIDGE
DUNSTON
COMSTOCK
WATERCRESS
WHITESAND
KENTMERE
KENTMERE POINTE

Construction Site
Stormwater Runoff Control
Inspection and Enforcement Procedures

DEPARTMENT OF PUBLIC WORKS

201 James Avenue

P.O. Box 3401

Colonial Heights, VA 23834

April 2017

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APPENDIX A. VSMP Permit & SWPPP Construction Inspection Forms – Example

1.0 PURPOSE

The purpose of this document is to identify policies and procedures for the inspection of construction sites for stormwater runoff control. Constructions sites will be inspected for compliance with erosion and sedimentation control in accordance with the City's ordinance and for compliance with the site's VSMP permit as applicable.

2.0 LEGAL AUTHORITY

2.1 Commonwealth of Virginia

Legal Authority to enforce stormwater runoff controls on construction sites is granted to the City by the Code of Virginia. Specifically, authority is granted by the Stormwater Management Act, Title 62.1, Chapter 3.1, Article 2.3 of the Code of Virginia; the Virginia Stormwater Management Program (VSMP) Regulation, Chapter 870 of the Virginia Administrative Code; and by Chapter 880 the General VPDES Permit for Discharges of Stormwater From Construction Activities, Chapter 880 of the Virginia Administrative Code and the Virginia Erosion and Sediment Control Regulations (9VAC25-840) as revised.

2.2 City of Colonial Heights

The City of Colonial Heights recognizes that its goal of effective enforcement may be accomplished in most cases by offering compliance assistance to the regulated community and ensuring that any noncompliance is corrected quickly. Nonetheless, The City of Colonial Heights will use the full range of its enforcement authority as needed to deter violations and ensure that its mission to conserve and protect the environment and the health and well-being of the Commonwealth's citizens is fulfilled.

The City of Colonial Heights is authorized by the Code of Virginia § 62.1-44.15:27 to establish and enforce the Virginia Stormwater Management Program (VSMP) and has delegated program administration to the Director of Public Works. The City integrates the City of Colonial Heights Stormwater Management requirements (Chapter 245) with the Erosion and Sediment Control Ordinance of Colonial Heights (Chapter 241) and the Chesapeake Bay Preservation Ordinance requirements in a unified stormwater program.

3.0 CITY PROCEDURES FOR INSPECTIONS

3.1 Inspection Schedule

All permitted projects will be inspected as follows:

Erosion and Sediment Control (E&S) Inspections

A. During or immediately following initial installation of erosion and sediment controls;
B. At least once in every two week period;
C. Within 48 hours following any runoff producing storm event; and
D. At the completion of the project prior to the release of any performance bonds.

Stormwater Management (SWM) Inspections

A. Stormwater inspections will be completed on a periodic basis

3.2 Inspection Procedure

City inspections will be performed according to the following procedures:

1. E&S Inspections will be performed to inspect for compliance with the approved erosion and sedimentation control plan. City staff will attempt to inform the construction site operator and/or permittee prior to the inspection.
2. Stormwater Management Inspections will be documented on VSMP Permit & SWPPP Construction Inspection Forms found in Appendix A.
3. After the inspection has been completed, a hard copy of the documentation and any pictures taken will be kept by the Inspector.
4. When a site fails an inspection, the information will be forwarded to the Assistant Director. The Assistant Director will consult with the Director of Public Works regarding the appropriate enforcement action. The enforcement actions are discussed in Section 4.

3.3 Documentation

The inspection records shall include at a minimum:

1. The date of inspection,
2. The result of the inspection,
3. Any deficiencies,
4. The timeframe allowed for compliance with any noted deficiencies.

All records must be kept on file for a minimum of five years.

4.0 ENFORCEMENT OF VIOLATIONS

For violation(s) noted by the inspector pertaining to failure to comply with an approved erosion and sedimentation control plan or for performing land disturbing activities without an approved plan, the Director of Public Works may follow the subsequent general steps to enforce compliance of the regulations by issuing will follow these steps:

1. Verbal warning and inspection report;
2. Notice of Corrective Action;
3. Stop work order;
4. Emergency special orders;
5. An injunction; and Civil penalty(ies)

4.1 Verbal Warning/Inspection Report

Under circumstances where an inspection reveals routine noncompliance that can be corrected within a reasonably short time, the Director of Public Works may choose to issue a verbal warning accompanied by an inspection report that describes the specific problems and includes a schedule for correcting the noncompliance.

The purpose of the verbal warning is to give the regulated party responsible for the alleged noncompliance an opportunity to comply voluntarily and thus avoid sanctions that might be imposed by an escalated enforcement response.

4.2 Notice of Corrective Action

In accordance with § 62.1-44.15:37 of the Code of Virginia, when the Director of Public Works' or designee's initial attempts to secure a voluntary return to compliance are unsuccessful, the director may issue a Notice of Corrective Action (NOCA). Examples of situations where issuance of a NOCA is appropriate include the following:

1. When the regulated party has failed to correct the noncompliance at the site pursuant to a prior Verbal Warning;
2. Where inspections of a construction site indicate a continuing pattern of various routine noncompliance after the Director has issued one or more Verbal Warnings for specific noncompliance; and/or
3. Noncompliance at a construction site is causing an adverse impact to human health or the environment such as a discharge of sediment to a stream or wetland. This situation does not necessarily require prior issuance of a Verbal Warning.

The purpose of a NOCA is to inform the regulated party responsible for the alleged noncompliance of the facts surrounding the allegations, the applicable law, and the potential consequences for failing to address the situation, should the allegations prove true. The NOCA also gives the regulated party an opportunity to refute the allegations or to address the discrepancies described in the NOCA within a specified time.

It is important that field staff gathers sufficient evidence throughout the informal enforcement process to support escalating the enforcement response, should the need arise. For this reason, field staff should carefully document all of the steps of the informal process in inspection reports, photographs, telephones logs, and field notes.

NOCA Process

1. Except for special circumstances (e.g., ongoing adverse impacts to human health or the environment), past noncompliance should be documented in one or more Verbal Warning and VSMP Permit & SWPPP Construction Inspection Report issued pursuant to the guidelines in this Manual.
2. Explain to the responsible party in easily understood terms (i) any noncompliance identified during the site inspection or investigation and (ii) describe specific measures needed to achieve compliance. Also explain any (i) documented history of noncompliance at the site, (ii) your decision to issue NOCA, (iii) the reasons for that decision, and (iv) the potential consequences, should the responsible party fail to complete the measures specified in the NOCA within the allotted time (i.e., may result in escalation to formal enforcement, such as a Stop Work Order and potentially a civil charge).
3. Complete the VSMP Permit & SWPPP Construction Inspection Report.
4. Draft the NOCA letter.
5. Deliver the approved NOCA by hand or send it by certified mail.
6. Conduct a follow- up inspection to ensure compliance.
7. Under circumstances where the responsible party has not corrected the problem or where significant new noncompliance is identified and if the responsible party has good reason for needing a short extension to complete the agreed upon measures or if the new noncompliance is minor and can be corrected immediately, issue a second NOCA.
8. If professional judgment dictates that issuing a second NOCA is not appropriate, initiate a Stop Work Order by discussing the facts of case with the Director or its designee.

4.3 Stop Work Order

In accordance with § 62.1-44.15:37 of the Code of Virginia, if a Permittee fails to comply with the verbal warnings, inspection reports recommended corrective actions, and/or NOCA, the Director may issue an order requiring the owner, Permittee, person responsible for carrying out an approved plan, or person conducting the land- disturbing activities without an approved plan or required permit to cease all land-disturbing activities until the violation of the permit has ceased, or an approved plan and required permits are obtained, and specified corrective measures have been completed.

The stop work order shall become effective upon service on the person by mailing, with confirmation of delivery, sent to his address specified in the land records of the City, or by personal delivery by an agent of the Director.

4.4 Emergency Special Orders

In accordance with § 62.1-44.15:25 and § 62.1-44.15:37 of the Code of Virginia, if the Director finds that any such violation is grossly affecting or presents an imminent and substantial danger to (i) the public health, safety, or welfare or the health of animals, fish, or aquatic life; (ii) a public water supply; or (iii) recreational, commercial, industrial, agricultural, or other reasonable uses, it may issue, without advance notice or hearing, an emergency order directing such person to cease immediately all land- disturbing activities on the site and shall provide an opportunity for a hearing, after reasonable notice as to the time and place thereof, to such person, to affirm, modify, amend, or cancel such emergency order.

4.5 Injunction

In accordance with § 62.1-44.15:37 and § 62.1-44.15:42 of the Code of Virginia, if a person who has been issued an order is not complying with the terms thereof, the Director may institute a proceeding in Circuit Court.

4.6 Civil Penalties

In accordance with § 62.1-44.15:42 and § 62.1-44.15:48 of the Code of Virginia, any person who violates any provision of the Code of Virginia or of any regulation, ordinance, or standard and specification adopted or approved hereunder or who fails, neglects, or refuses to comply with any order of the Director or a court, issued as herein provided, shall be subject to a civil penalty not to exceed $32,500 for each violation within the discretion of the court. Each day of violation of each requirement shall constitute a separate offense.

Violations for which a penalty may be imposed under this subsection shall include but not be limited to the following:

(i) No state permit registration;
(ii) No SWPPP;
(iii) Incomplete SWPPP;
(iv) SWPPP not available for review;
(v) No approved erosion and sediment control plan;
(vi) Failure to install stormwater BMPs or erosion and sediment controls;
(vii) Stormwater BMPs or erosion and sediment controls improperly installed or maintained;
(viii) Operational deficiencies;
(ix) Failure to conduct required inspections;
(x) Incomplete, improper, or missed inspections; and
(xi) Discharges not in compliance with the permit requirements of Section 4VAC 50-60-1170 of the General Permit.

4.7 Payments of Civil Penalties

Pursuant to § 62.1-44.15:48 A of the Code of Virginia, civil penalties recovered by the City's VSMP Authority shall be paid into the City's Treasury in which the violation occurred and are to be used for the purpose of minimizing, preventing, managing, or mitigating pollution of the waters of the City and abating environmental pollution therein in such manner as the court may, by order, direct.

APPENDIX A
VSMP PERMIT CONSTRUCTION INSPECTION FORM
and
NOTICE OF CORRECTIVE ACTION

Reply To:
Department of Public Works
Attn: EC Inspection Report
201 James Avenue
P.O. Box 3401
Colonial Heights, VA 23834

City of Colonial Heights
P.O. Box 3401
Colonial Heights, VA 23834-9001
www.colonial-heights.com

INSPECTION REPORT

Project Name:_____ Project Authority:_____

RLD Name:_____ RLD No. _____

Project Location:_____ Project No:_____

Inspector Name:_____ Inspection Date:_____ Time _____

STAGE OF CONSTRUCTION

Pre-Construction Conference ☐	*Building Construction* ☐	*Construction of SWM Facilities* ☐
Clearing & Grubbing ☐	*Finish Grading* ☐	*Maintenance of SWM Facilities* ☐
Rough Grading ☐	*Final Stabilization* ☐	*Other*_____ ☐

Item#	*State/Local Regulation*[1]	*Violation*		*Description and Location of Problem/Violation*[2]*, Required or Recommended Corrective Actions, and Other Comments/Notes*
		Initial	*Repeat*	

(1) Refers to applicable regulation found in the most recent publication of the *Virginia Erosion and Sediment Control Regulations* (4VAC50-30), *Virginia Stormwater Management Regulations* (4VAC3-20), or local ESC/SWM ordinance.

(2) Note whether or not off-site damage resulting from the problem/violation was evident during the inspection.

REQUIRED CORRECTIVE ACTION DEADLINE DATE:_____ **Re-inspection Date:** _____
(DD/MM/YY) (DD/MM/YY)

The required corrective action deadline date applies to all violations noted on this report. If listed violation(s) currently constitute non-compliance and/or required corrective actions are not completed by the deadline, a **NOTICE TO COMPLY**, **STOP WORK ORDER**, and/or other enforcement actions may be issued to the entity responsible for ensuring compliance on the above project.

Inspector:_____ _____ Signature
Date

*Acknowledgement of on site report receipt:*_____ _____ _____
Print Name *Signature* *Date*

This report will be provided to the following parties via mail, fax, or e-mail within 24 hours of inspection:

_____

_____

Reply To:
Department of Public Works
Attn: EC Inspection Report
201 James Avenue
P.O. Box 3401
Colonial Heights, VA 23834

City of Colonial Heights
P.O. Box 3401
Colonial Heights, VA 23834-9001
www.colonial-heights.com

INSPECTION REPORT

Project Name: _____ Inspection Date: _____

Item#	*State/Local Regulation[1]*	*Violation*		*Description and Location of Problem/Violation[2], Required or Recommended Corrective Actions, and Other Comments/Notes*
		Initial	*Repeat*	

(1) Refers to applicable regulation found in the most recent publication of the *Virginia Erosion and Sediment Control Regulations* (4VAC50-30), *Virginia Stormwater Management Regulations* (4VAC3-20), or local ESC/SWM ordinance.

(2) Note whether or not off-site damage resulting from the problem/violation was evident during the inspection.

Sheet____ of ____

Reply To:
Department of Public Works
201 James Avenue
P.O. Box 3401
Colonial Heights, VA 23834
804-520-9334

CONSTRUCTION GENERAL PERMIT SITE

Project Name:		Permit Number:	
Project Address:		County/City:	
Project Operator:		Operator Telephone:	
Project Contact:		Contact Telephone:	
Contact E-Mail:		Qualified Personnel (QP):	
Inspector:		Weather (Wet/Dry/Rain):	
Disturbed Acreage:		Inspection Date & Time:	

INSPECTION LEVEL 2 (COMPREHENSIVE)

STAGE OF CONSTRUCTION:

☐ Building Construction ☐ Construction of SWM Facilities ☐ Clearing & Grading ☐ Final Grading

☐ Rough Grading ☐ Final Stabilization ☐ Other: _____

NATURE OF PROJECT:

☐ Public ☐ Private ☐ State ☐ Federal ☐ Other: _____

		Yes	*No*	*N/A*	*Comments/Description*
	COVERAGE AND POSTING REQUIREMENTS				
1	Project has permit coverage? (9VAC 25-870-310)(Va. Code § 62.1-44.15:34.A)				
2	Project's coverage letter posted near the site's entrance? (CGP Part II. C)				
3	Notice of location of the SWPPP posted near the site's entrance, if applicable, and information for public access is provided? (9VAC25-870-54.G)(CGP Part II D.2 & 3)				
	SWPPP REQUIREMENTS				
4	SWPPP on-site **or** made available during the inspection? (CGP Part II D.1 & 2)(9VAC25-870-54.G)				
5	SWPPP has been prepared? (9VAC25-880-50.B.10)				
6	SWPPP contains a signed copy of the registration statement? (CGP Part II A.1.a)				
7	SWPPP contains, upon receipt, a copy of the notice of coverage letter and the CGP? (CGP Part II A.1.b & c)				

Reply To:
Department of Public Works
201 James Avenue
P.O. Box 3401
Colonial Heights, VA 23834
804-520-9334

8	A narrative description and site plan are included? (CGP Part II A.1(d-e))				
9	Is the ESC plan approved and properly implemented? (CGP Part II A.2. (a-c)) (9VAC25-870-54.B)				
10	Is the SWM plan consistent with the CGP requirements for new and existing construction activities? (CGP Part II A.3(a-b))(9VAC25-870-55)				
11	Is the pollution prevention plan consistent with the requirements of the CGP and VSMP Regulations? (CGP Part II A.4(a-f))(9VAC25-870-56)				
12	Discharges to impaired waters, surface waters with an applicable TMDL wasteload allocation established and exceptional waters are addressed as required in the SWPPP? (CGP Part II A.5(a-b))(9VAC25-870-54E)				
13	Name, phone number and qualifications of "Qualified Personnel" conducting inspections? (CGP Part II A.6)				
14	Delegation of Authority is provided and signed in accordance with Part III K? (CGP Part II A.7)				
15	The SWPPP is signed and dated in accordance with Part III K? (CGP Part II A.8)				
	SWPPP ADMINISTRATION				
16	SWPPP is being amended, modified and updated appropriately? (CGP Part II B (1, 2, 4 and 5))(9VAC25-870-54.G)				
17	Contractor(s) that will implement and maintain each control measure are identified? (CGP Part II B.3)				
18	Control measures implemented in accordance with the SWPPP? (CGP II E(1-2)) (9VAC25-870-54)				
19	Inspections conducted appropriately and at required frequency? (CGP Part II F(1-4))				
20	Corrective actions are taken consistent with the requirements of the CGP? (CGP Part II G(1-2))				
	ADVERSE IMPACTS AND PROHIBITED DISCHARGES				
21	Adverse impact(s) to receiving waters? (CGP Part I B.6)(Part I G.1)(Part II G.2)(Part II A.4.e(1-6))				
22	Potential or actual unusual or extraordinary discharge, bypass, or upset? (CGP Part III H, U, V)				
23	Prohibited Non-Stormwater Discharges? (CGP Part I B.2)(CGP Part I D)				
	AGENCY RECOMMENDATION				
24	Site Inspection results in immediate or subsequent recommendation for issuance of Request for Corrective Action, Warning Letter, or Notice of Violation?				

Reply To:
Department of Public Works
01 James Avenue
P.O. Box 3401
Colonial Heights, VA 23834
04-520-9334

CONSTRUCTION GENERAL PERMIT SITE INSPECTION REPORT
REQUEST FOR CORRECTIVE ACTION

Project Name: _____ Permit Number (if applicable): _

Checklist #	Regulatory Citation/Legal requirement	Occurrence	Observation/Legal Requirement/Recommended Corrective Action
			Observation/Legal Requirement: ***Recommended Corrective Action:***

Targeted Re-Inspection Date:____ Recommended Corrective

Action Deadline:___

The recommended corrective action deadline date applies to all conditions noted on this report unless otherwise noted. If listed condition(s) currently constitute non-compliance and/or corrective actions are not completed by the deadline, other enforcement actions may be issued to the entity responsible for ensuring compliance on the above project.

Inspector Signature:_____ Date:_____

Construction General Permit Site Inspection Photo Log

Project Name: **Date:**

Post-Construction BMP
Inspection and Maintenance Manual

DEPARTMENT OF PUBLIC WORKS

201 James Avenue

P.O. Box 3401

Colonial Heights, VA 23834

April 2017

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APPENDIX A. Stormwater Management Facility Maintenance Agreement

APPENDIX B. Privately-Owned BMP Operation and Maintenance Inspection Form

APPENDIX C. City-Owned BMP Inspection Form

1.0 PURPOSE

The purpose of this document is to provide procedures for the long-term maintenance of Stormwater Best Management Practices (BMPs) located in the City of Colonial Heights. The stormwater management facilities are either owned by the City or by private entities.

Inspection and maintenance will be performed for all municipally owned and operated BMPs based on the City's inspection schedule as outlined in this document. Privately owned BMPs will be maintained and inspected by the owner. The inspection for privately owned BMPs will occur during the last sixty (60) days of the first year of operation and at least every two (2) years thereafter. However, the City reserves the right to inspect, maintain and repair the BMP, at the owner's expense, in the event of any default or failure by the owner with respect to BMP inspection or maintenance.

2.0 PRIVATE STORMWATER BMP INSPECTIONS AND MAINTENANCE

2.1 Authority

The City has a Stormwater Management Facility Maintenance Agreement that outlines the requirements for privately owned stormwater management facilities. The agreement is included in Appendix A.

2.2 Maintenance

It is the responsibility of the owner of any stormwater BMP facility as described in the Stormwater Management Facility Maintenance Agreement to maintain the BMP facility to allow it to perform the purposes for which it was design and constructed, and in accordance with the standards by which it was designed and constructed, as shown on approved Plans. Specifically, the owner agrees to:

A. Remove silt and other debris from the Facility so as to maintain the elevation of the bottom of the Facility as shown on the approved plans.

B. Plant and mow grass or maintain a vegetative cover on the slopes, if applicable, surrounding the Facility.

C. Maintain in good order and repair the principal and emergency spillways and/or outlet orifice which serve as the outflow devices for the Facility.

The owner is responsible for promptly performing all needed maintenance as a result of the preventive inspections as discussed in the next section.

2.3 Inspections

The owner of any stormwater BMP facility is responsible for retaining a Professional Engineer to perform preventive maintenance inspections on the BMP. The inspections should occur during the last sixty (60) days of the first year of operation and at least once every two (2) years thereafter.

The inspection reports should be submitted in writing to the City within thirty (30) days after each inspection and should include the following:

(1) the date of inspection;

(2) name of inspector;

(3) the condition of:

- (a) vegetation;
- (b) fences;
- (c) spillways and/or outlet orifice;
- (d) embankments;

(e) reservoir area;
(f) inlet and outlet channels;
(g) underground drainage structures;
(h) sediment load;
(i) gates and valves; or
(j) any other item that could affect the proper function of the Facility; and

(4) description of needed maintenance.

The operation and maintenance inspection form is included in Appendix B.

The owner is also responsible for promptly performing all needed maintenance reported by the inspector.

2.4 City Inspections

In the event of any default or failure by the owner to perform inspections and/or maintenance to the stormwater BMP facility, for a period of thirty (30) days after notice in writing given to the owner by the City, the City shall have the right, at its option, to enter upon the properties owned by the owner and, for the account of the owner, maintain and repair the stormwater BMP facility. All costs shall be at the expense of the owner.

2.5 Inspection and Maintenance Records

All inspection and maintenance records should be kept on file for a minimum of three years. The City is responsible for obtaining inspection information on all BMPs every 5 years. The Project Coordinator is responsible for maintaining the stormwater management facility tracking spreadsheet.

3.0 MUNICIPAL STORMWATER BMP INSPECTIONS AND MAINTENANCE

The City's MS4 Permit requires the City to inspect municipal stormwater management facilities annually. However, the permit allows the City to implement an alternative schedule for inspections based on facility type and expected maintenance needs provided it is included in the MS4 Program Plan. The City is also required to conduct maintenance on its stormwater management facilities as necessary.

3.1 Inspection Schedule and Guidelines

Municipal BMPs will be inspected by Department of Public Works (DPW) staff according to the BMP inspection schedule and guideline specific to each BMP found in Table 1.

Table 1. Stormwater Management BMP Inspection Frequencies

BMP Classification	BMP Type	Minimum Inspection Schedule	Notes
1	Rooftop Disconnection	Every 5 Years	DPW shall inspect and provide documentation as per the requirements found on the Virginia Stormwater BMP Clearinghouse Website, except for BMP Classification 1 facilities, where the Department of Public Works will be responsible for obtaining inspection information. DPW will be responsible for obtaining inspection information on all BMPs every 5 years.
1	Sheetflow to Vegetated Filter or Conserved Open Space	Every 5 Years	
1	Grass Channel	Every 5 Years	
1	Soil Amendments	Every 5 Years	
2	Permeable Pavement	Annually	
2	Infiltration	Annually	
2	Bioretention	Annually	
2	Dry Swale	Annually	
2	Wet Swale	Annually	
2	Filtering Practice	Annually	
2	Constructed Wetland	Annually	
2	Wet Pond	Annually	
2	Extended Detention Pond	Annually	
3	Vegetated Roof	Twice per year (Spring/Fall)	
3	Rainwater Harvesting	Twice per year (Spring/Fall)	
4	Manufactured/Other BMP	Yearly or per manufacturer recommendations, whichever is more frequent.	DPW shall inspect and provide documentation according to manufacturer's guidelines.

Inspections performed on City owned BMPs should be documented on the inspection forms found in Appendix C of this document. After completion, the results of each inspection and any associated pictures should be submitted to the Project Coordinator.

3.2 Follow up and BMP Maintenance

For any BMPs requiring maintenance, the required maintenance tasks should be addressed as soon as possible. If the maintenance required is minimal (sediment removal, minor repair), the City will perform maintenance work within 45 days from the date of inspection. If major maintenance is required and substantial funding is required, the City will develop a plan of action and initial scoping report within 60 days from the date of inspection. Upon approval of funding, the City will work expeditiously to proceed with the implementation of the project.

Any work performed, maintenance inspection forms and pictures should be documented and submitted to the Project Coordinator.

3.3 Inspection and Maintenance Records

All inspection and maintenance records should be kept on file for a minimum of three years. The Project Coordinator is responsible for maintaining the stormwater management facility tracking spreadsheet.

APPENDIX A

Stormwater Management Facility Maintenance Agreement

CITY OF COLONIAL HEIGHTS, VIRGINIA

EASEMENT AGREEMENT

This deed is exempt from the recordation taxes imposed by § 58.1-801 of the Code of Virginia (1950), as amended, pursuant to § 58.1-811.A.

THIS DEED OF EASEMENT, made and entered into this _____ day of _____, 20____, by and between _____ _____, a _____ Corporation, and its heirs, successors and assigns, hereinafter referred to as "Owner," party of the first part; and the CITY OF COLONIAL HEIGHTS, VIRGINIA, a Municipal Corporation of the Commonwealth of Virginia, and its successors and assigns, hereinafter referred to as "City," party of the second part, whose address is City of Colonial Heights, c/o City Clerk's Office, P. O. Box 3401, Colonial Heights, VA 23834-9001.

WHEREAS, Owner has submitted for approval by the City an Erosion and Sediment Control Plan (the "Plan"), pursuant to Chapter 241, Soil Erosion and Sediment Control, of the Code of the City of Colonial Heights; and

WHEREAS, the Plan requires permanent facilities for storm water detention, the maintenance of which must be guaranteed by the Owner; NOW, THEREFORE,

WITNESSETH: That for and in consideration of the sum of ONE DOLLAR ($1.00) and other good and valuable consideration, the receipt of which is hereby acknowledged, the Owner does hereby grant and convey with GENERAL WARRANTY unto the City an easement and right-of-way for the purpose of guaranteeing the maintenance of a storm water management facility as shown and described on the

approved "Plan" which is on file in the Office of the City Engineer, and is made a part hereof by reference, under, through, upon, over and across the property of the Owner located in the City of Colonial Heights, Virginia, together with all of the rights and privileges hereinafter enumerated pertaining to said property, being more particularly bounded and described as follows:

[Description of Property]

This easement is granted for the following purposes and subject to the following conditions:

1. Maintenance of the Storm Water Management Facility

The Owner agrees that it shall maintain indefinitely the Storm Water Management Facility (hereinafter referred to as "Facility") in a manner which will permit the Facility to perform the purposes for which it was designed and constructed, and in accordance with the standards by which it was designed and constructed, all as shown and described on the approved Plan hereinabove referred to. Specifically, the Owner agrees that it shall:

A. remove silt and other debris from the Facility so as to maintain the elevation of the bottom of the Facility as shown on the approved plans.

B. plant and mow grass or maintain a vegetative cover on the slopes, if applicable, surrounding the Facility.

C. maintain in good order and repair the principal and emergency spillways and/or outlet orifice which serve as the outflow devices for the Facility.

2. Final Inspection Reports

The Owner agrees that, upon completion of the Facility, it will retain at its expense a Professional Engineer registered in Virginia and approved by the City to

certify in writing to the City within thirty (30) days of completion that the Facility is constructed in accordance with the approved plans and specifications.

3. Inspection for Preventive Maintenance

A. The Owner agrees to cause inspections to be made of the Facility by a Professional Engineer registered in Virginia, retained by the Owner at its expense, and approved by the City. The inspection shall occur during the last sixty (60) days of the first year of operation and at least once every two (2) years thereafter.

B. The inspection reports shall be submitted in writing to the City within thirty (30) days after each inspection and shall include the following:

(1) the date of inspection;

(2) name of inspector;

(3) the condition of:

(a) vegetation;

(b) fences;

(c) spillways and/or outlet orifice;

(d) embankments;

(e) reservoir area;

(f) inlet and outlet channels;

(g) underground drainage structures;

(h) sediment load;

(i) gates and valves; or

(j) any other item that could affect the proper function of the Facility; and

(4) description of needed maintenance.

C. The Owner agrees to perform promptly all needed maintenance reported by the Inspector.

4. Rights of the City in the Event of Default by the Owner

In the event of any default or failure by the Owner in the performance of any of the covenants and warranties pertaining to the maintenance of the Facility, in accordance with the terms and conditions hereof, which continues for a period of thirty (30) days after notice in writing thereof given to the Owner by the City, the City shall have the right, at its option, to enter upon the properties owned by the Owner and, for the account of the Owner, maintain and repair the Facility as provided herein. All costs thereof shall constitute a lien upon the properties owned by the Owner. Nothing herein shall obligate the City to maintain the Facility.

5. Indemnification of City

The Owner hereby agrees that it shall save, hold harmless, and indemnify the City from and against all liability, losses, claims, demands, costs and expenses arising from, or out of, default or failure by the Owner to maintain the Facility, in accordance with the terms and conditions set forth herein or arising from, or out of, the construction, operation, repair or maintenance of the Facility.

6. No Public Rights

The parties hereto expressly do not intend by execution of this Agreement to create in the public, or any member thereof, any rights as a third party beneficiary or to authorize anyone not a party hereto to maintain a suit for any damages pursuant to the terms or provisions of this Agreement.

7. Covenants Running With the Land

The foregoing agreements shall be covenants which run with the land and shall inure solely to the benefit of, and shall be binding upon the parties hereto, their respective successors and assigns, and all subsequent owners of the property.

8. Recordation

Upon execution of this Agreement, it shall be recorded in the Clerk's Office of the Circuit Court of the City of Colonial Heights, Virginia, at the Owner's expense.

WITNESS the following signatures:

_____
OWNER

By_____

Type Name_____

Title_____

Attest:

_____
Secretary

Accepted:

CITY OF COLONIAL HEIGHTS, VIRGINIA

By_____
Thomas L. Mattis
City Manager

Attest:

_____
Pamela B. Wallace, City Clerk

Approved as to location and size:

_____
William E. Henley
City Engineer

Approved as to form:

_____
Hugh P. Fisher, III
City Attorney

STATE OF _____,
City/County of _____, to-wit:

The foregoing instrument was acknowledged before me this _____ day of _____, 20_____, by _____, _____, on behalf of _____, Owner.

_____
Notary Public

My commission expires: / /

COMMONWEALTH OF VIRGINIA,
City of Colonial Heights, to-wit:

The foregoing instrument was acknowledged before me this _____ day of _____, 20_____, by Thomas L. Mattis, City Manager, on behalfof the City of Colonial Heights, Virginia.

_____
Notary Public

My commission expires: / /

APPENDIX B

Privately-Owned BMP Operation and Maintenance Inspection Form

CITY OF COLONIAL HEIGHTS
DEPARTMENT OF PUBLIC WORKS
OPERATION AND MAINTENANCE INSPECTION RECORD

1. A licensed professional engineer must conduct all inspections utilizing the approved construction plans.
2. As a minimum, all items must be inspected and any discrepancies and necessary repairs noted. Include estimated cost of necessary repairs or actions.
3. Upon completion of the inspection, one (1) copy, indicating estimated completion date and cost of noted discrepancies and repairs, is to be forwarded by the inspection firm to the: City of Colonial Heights, Department of Public Works, Attn: SWM/BMP Inspection Report, P. O. Box 3401 Colonial Heights, VA 23834. The original form must be forwarded to the owner of the facility.
4. The facility owner's representative must indicate on the original form the actual completion date and actual cost of acquired repairs, after which the facility owner must sign and return one (1) copy of the form to the: City of Colonial Heights, Department of Public Works, Attn: SWM/BMPInspection Report, P.O. Box 3401 Colonial Heights, VA 23834.

Name of Project:				Location Project:	
Owner of Facility:				Date of Inspection:	
Inspection Item	Acceptable?		N/A	If Not Acceptable Describe Repairs Needed	Estimated Cost of Repairs
	Yes	No			
I. DAM / EMBANKMENT					
A. Vegetation					
1.) Trees					
2.) Bare Spots					
B. Settlement/Stabilization					
1.) Cracks					
2.) Depressions					
3.) Erosion					
C. Rodent/Wildlife Damage					
D. Evidence of seepage					
E. Bridges					
II. PRINCIPAL SPILLWAY					
A. Obstructions in Spillway					
B. Inlet and Outlet Structures					
1.) Signs of seepage					
2.) Separation of joints					
3.) Cracks, Breaks, or Deterioration of Concrete					
4.) Differential Settlement					
5.) Undermining					

FORM REVISED FEBRUARY 2009. OTHER VERSIONS OF THIS FORM ARE OBSOLETE AND WILL NOT BE ACCEPTED.

OPERATIONS AND MAINTENANCE INSPECTION RECORD					Page 2
Name of Project:					
Inspection Item	Acceptable?		N/A	If Not Acceptable Describe Repairs Needed	Estimated Cost of Repairs
	Yes	No			
II. PRINCIPAL SPILLWAY (cont'd)					
C. Settlement Buildup					
D. Scour at Inlet					
E. Riser and Trash Rack					
1.) Vertical Position					
2.) Securely Attached					
3.) Stone Cone Functional					
4.) Low Flow Perforations Functional					
5.) No Accumulated Debris					
III. GATES OR VALVES					
A. Fully Functional					
B. No Rust Damage					
C. No Evidence of Leaking					
VI. RESERVOIR AREA					
A. Inlet Structures					
1.) No Erosion					
2.) No Settlement					
3.) No Undermining					
4.) No Silt Buildup in Forebays					
B. No Silt Buildup in Entire Basin					
C. Wet Volume per Design					
V. LOW FLOW CHANNELS					
A. No Sediment Buildup					
B. No Accumulated Debris					
C. No Undermining					
D. No Other Damage of Deterioration					
VI. WETLAND GRASSES					
A. If Required by Plan, Present Where So Required					

OPERATIONS AND MAINTENANCE INSPECTION RECORD					Page 3
Name of Project:					
Inspection Item	Acceptable? Yes	Acceptable? No	N/A	If Not Acceptable Describe Repairs Needed	Estimated Cost of Repairs
II. FENCES					
A. Posts in Place and Secure					
B. Fencing in Place and Secure					
C. No Accumulated Debris					
D. Access Gate Functions					
E. Vegetative Barriers in Place					
Note Any Other Discrepancies Observed and Necessary Repairs (attach separate page if necessary). Attach Pictures of Condition at					
Time of Inspection.					
Estimate Repairs Completion Date:				**Total Estimated Cost of All Repairs:**	

The Professional Engineer's Information:

Inspection Conducted by: _____ P.E.

Firm: _____

Address: _____

_____

_____

Phone: _____

Signature of P.E.
Performing the Inspection: _____

Place signed, Professional Stamp Here

Facility Owner Information:

Owner's Representative: _____

Representative's Title: _____

Mailing Address: _____

_____

_____

Phone: _____

ACTUAL DATE All REPAIRS COMPLETED:

ACTUAL TOTAL COST OF ALL REPAIRS

Attach pictures of completed repairs

Representative's Signature: _____

APPENDIX C

City-Owned BMP Inspection Form

CITY OF COLONIAL HEIGHTS, VA OPERATIONS & MAINTENANCE BMP CHECKLIST	Inspected By:
	DATE:
	BMP ID#
	TYPE of BMP:
	NUMBER if PRIVATE:

Item	Yes/No	Repair	Investigate	COMMENTS	ACTION
I. EMBANKMENT					
A. Crest					
1. Visual Settlement					
B. Upstream Slope					
1. Erosion					
2. Adequate Groundcover					
3. Trees, Shrubs, Other					
4. Cracks, Settlements, Other					
5. Rodent Holes					
C. Downstream Slope					
1. Erosion					
2. Adequate Groundcover					
3. Trees, Shrubs, Other					
4. Cracks, Settlements, Other					
5. Rodent Holes					
D. Abutments					
1. Erosion					
2. Seepage					
3. Cracks					
E. Drainage, Seepage Control					
1. Seepage at Toe					
II. EMERGENCY SPILLWAY					
1. Eroding or Back Cutting					
2. Obstructed					
3. Leaking					
III. PRINCIPAL SPILLWAY BARREL					
1. Seepage into Conduit					
2. Debris Present					
3. Displaced or Offset Joints					
IV. OUTLET PROTECTION					
1. Obstructed					
2. Undercutting at Outlet					
3. Outlet Channel Scour					
V. BASIN & UPLAND BUFFER AREA					
A. Low Flow Channel					
1. Erosion					
2. Obstructed					
B. Basin Bottom & Side Slopes					
1. Erosion					
2. Adequate Stabilization					
3. Sediment Accumulation					
4. Floating Debris					
5. High Water Marks					
C. Inflow Channel/Pipes					

CITY OF COLONIAL HEIGHTS, VA
OPERATIONS & MAINTENANCE
BMP CHECKLIST

Inspected By:	
DATE:	
BMP ID#	
TYPE of BMP:	
NUMBER if PRIVATE:	

Item	Yes/No	Repair	Investigate	COMMENTS	ACTION
1. Erosion					
2. Adequate Stabilization					
3. Undecutting					
D. Sediment Forebay					
1. Sediment Accumulation					
2. Stable Overflow into Basin					
E. Permanent Pool					
1. Sediment Accumulation					
2. Shoreline Erosion					
3. Floating Debris					
4. Oil Slick					
5. Mosquito Problem					
F. Vegetation					
1. Shoreline					
2. Permanent Pool					
G. Landscaping/Fences Maintained					

Type Of Inspection (circle one) Annual - Complaint - Other

Photos

Pollution Prevention
Standard Operating Procedures

DEPARTMENT OF PUBLIC WORKS

201 James Avenue
P.O. Box 3401
Colonial Heights, VA 23834

April 2017

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ACRONYMS

BMP	Best Management Practice
DEQ	Department of Environmental Quality
EPA	Environmental Protection Agency
MCM	Minimum Control Measure
MS4	Municipal Separate Stormwater Sewer System
SDS	Safety Data Sheets (formerly MSDS)
NPDES	National Pollutant Discharge Elimination System
SWM	Stormwater Management
SWPPP	Stormwater Pollution Prevention Plan
VSMP	Virginia Stormwater Management Program

1.0 INTRODUCTION AND PURPOSE

This manual presents the standard operating procedures which the City of Colonial Heights will utilize in the City's daily operations. The manual provides a set of written procedures and Best Management Practices (BMPs), which are meant to ensure that the City's operations are managed in ways that will minimize pollutants from entering the City's small municipal separate storm sewer system (MS4). The written procedures are required to be developed, implemented, and updated by the City as a condition of the City's MS4 General Permit (MS4 Permit), the permitting mechanism designed to prevent pollutants from entering water bodies through stormwater runoff. The MS4 Permit authorizes stormwater discharges from MS4s to surface Waters in urbanized areas of the Commonwealth of Virginia.

The MS4 program is part of the Federal National Pollutant Discharge Elimination System (NPDES), which is authorized through the Clean Water Act. With delegation from the Environmental Protection Agency (EPA), MS4 permits in Virginia are issued through Virginia Pollutant Discharge Elimination System (VPDES) and administered by the Virginia Department of Environmental Quality (DEQ). To ensure compliance with Good Housekeeping/Pollution Prevention requirements of the MS4 Permit, City is required to perform the procedures outlined in this manual.

2.0 STANDARD OPERATING PROCEDURES FOR POLLUTION PREVENTION

The following sections review common procedures and operations that take place at specific locations at the different facilities that are maintained and operated by the City. These operations involve potential sources of pollutants that can enter and contaminate the stormwater system and the receiving downstream waters. An overview of risk factors associated with each operation is provided, in addition to suggested Best Management Practices to help reduce the potential for contamination.

2.1 Vehicle Washing

Improper vehicle washing can introduce several compounds into the stormwater system, including solvents, grease, sediment, and petroleum products as point source pollution and would be considered an illicit discharge. Washing vehicles near any part of the stormwater system, including inlets, ditches or other conveyances that lead to the storm sewer, may cause these compounds to pollute a nearby waterway. In order to avoid this, vehicle washing should be performed in designated areas that are either connected to sanitary sewer or equipped with adequate controls or BMPs for treating vehicle wash water. Alternatively, commercial vehicle washing facilities can be utilized.

The City of Colonial Heights allows vehicles and equipment only to be washed in designated vehicle washing areas. Indoor wash bays have floor drains that are connected to the sanitary sewer. Thus, all wash and rinse water are directed to the sanitary sewer. The City should ensure that the drains are periodically cleaned and all sediment are collected and properly disposed. Designated outdoor wash areas should have adequate controls or BMPs for treatment of vehicle wash water. The City should ensure that other controls or BMPs are routinely inspected and maintained.

<u>Best Management Practices</u>

- Wash vehicles in designated wash areas that drain directly to the sanitary sewer
- Wash vehicles in designated wash areas that equipped with adequate controls or BMPs for treating vehicle wash water
- Use commercial car washes for typical fleet vehicles

2.2 Vehicle Maintenance and Fueling

Vehicle maintenance practices involve several solvents, petroleum products, and other toxic compounds that must be stored and handled in accordance with procedures that prevent

potential contamination of the stormwater system or associated waterways.

Best Management Practices

For general maintenance:

- Vehicles shall be maintained inside and under cover, with the exception of emergency maintenance not involving fluids.
- Vehicles that are leaking any fluids shall be kept indoors and under cover unless a drip pan can be utilized and emptied into the designated waste oil or hazardous waste containers, as appropriate.
- Remove leaking vehicles from service until repaired.
- Store leaking batteries indoor and provide secondary containment.

For vehicle and equipment fueling:

- Always fill tanks and containers in such a manner as to avoid dripping
- Avoid "topping off" or filling beyond the normal fill capacity
- Fueling shall be supervised and never left unattended
- Perform vehicle and equipment fueling downgradient and at the farthest practical distance from any storm drain, conveyance, or waterway.

For leaks, drips, and spills:

- Clean thoroughly and promptly.
- Apply absorbent on the spill area and dispose of the waste properly. Never hose down the affected area.
- Prevent fluids from entering the storm sewer by diverting any flows using absorbent pads, booms, berms, etc.

2.3 Vehicle Storage

Vehicles are stored at the different facilities that are owned and operated by the City. Vehicles are potential sources of pollutants into the stormwater system and other bodies of water, and therefore must be stored appropriately.

Best Management Practices

- Store vehicles inside or under cover, if possible.
- If vehicles must be stored outside, locate vehicles away from storm drains should leaking occur.
- Vehicles that are leaking any fluids should be put inside and under cover unless a drip

pan can be utilized and emptied into the designated waste oil or hazardous waste containers, as appropriate.

- Ensure that parking areas are free of sediment and debris. Street sweep or clean as required.
- Regularly inspect vehicle storage areas.
- Clean up any observed spills and address the source of the leaking pollutant(s).

2.4 Fueling Stations/Areas

The City utilizes several vehicles for their operations, in addition to other fuel powered equipment. Fuel for fleet vehicles and equipment presents a particularly hazardous set of toxic compounds that can seriously impair the water quality of receiving waterways if spilled or leaked. Extra care must be taken to ensure that staff are adequately trained to avoid spills, clean them if they do occur, and prevent them from entering the storm sewer or any receiving waterways. Other best management practices also can be employed to reduce the risk, in addition to other procedures in applicable permits governing storage tanks.

Best Management Practices

- Refuel vehicles and equipment offsite at locations with designated fuel areas.
- Onsite refueling locations should be designed to prevent runoff and spills by having an impervious surface graded away from storm sewer inlets.
- Fuel stations should be covered with an area enough to provide cover to the dispensing area. This cover should direct stormwater to a perimeter drain or away from the area. Alternatively, facilities can provide a containment system for the fueling station.
- Develop a spill prevention plan or a stormwater pollution prevention plan that standardizes training and procedures related to use, storage, and potential spills of fuel. Additionally, provide equipment to both clean up the spill and prevent contamination of the storm sewer.
- Routinely inspect refueling structures and equipment for proper function and condition, as well as any signs of corrosion or potential failure. Above ground tanks should be inspected periodically by a professional.

2.5 Spill Prevention and Response

For spills, the old saying that “an ounce of prevention is worth a pound of cure” is appropriate. Spill clean-up can be labor-intensive and costly, as it involves containing the spill, collecting the spilled substance, properly disposing of the spilled materials, and filing of associated reports to

regulatory agencies, not to mention possible monetary fines. Spills and leaks are some of the most significant sources of stormwater pollution and are, in most cases, avoidable.

Best Management Practices

- Placing bollards, berms and/or containment features around structures or areas where fluids are stored, so releases can be prevented, easily detected, and controlled;
- Using drip pans for maintenance operations involving fluids and under leaking vehicles and equipment awaiting repair;
- Placing spill kits in areas where fluids are stored or in areas where activities may result in a spill;
- Providing training for proper use of materials and equipment used during operations and maintenance activities;
- Providing training for proper use of spill response equipment and supplies; and
- Conducting outdoor maintenance activities on paved surfaces to allow for easy detection, control, and cleanup of spills.

Spill prevention, control, and cleanup apply to all materials and wastes - not only hazardous substances. The toxic water quality effects from spills of hazardous substances (e.g., acids, oils, greases, fuels, solvents, pesticides) are commonly understood. However, non-hazardous materials, such as sand, litter, and wash water, among others - can also greatly impact water quality in receiving waters.

Non-reportable spills

- Oil spills less than 25 gallons that do not reach a navigable waterway. These spills must be cleaned up and documented.
- Chemical spills not exceeding a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Reportable Quantities (RQ) or are wholly contained inside a building.

Reportable spills

- Oil spills greater than 25 gallons must be reported to the Virginia DEQ within 24 hours
- Oil spills of any quantity that immediately threaten or affect (e.g. cause a sheen) a waterway must be immediately reported to the National Response Center (NRC) (1-800-424-8802) and the DEQ.
- Chemical spills that equal, or exceed, the RQ, or are an identified marine pollutant must be immediately reported to the NRC and the DEQ.

- Chemical spills below their RQ, or without an RQ that reach water must be reported to the DEQ.

2.6 Dumpsters/Trash Cans – Solid Waste Collection and Recycling

Dumpsters and trash cans are potential producers of illicit discharges if polluted materials leak and travel to the storm sewer or receiving waterways. However, as with other wastes and chemicals, proper storage and careful handling will minimize exposure. Unlidded dumpsters and trash cans allow rainwater to mix with the waste inside and produce polluted leachate that could then spill during unloading. Dumpsters and trash cans must also remain in good condition where nothing can leak out of the bottom and possibly contaminate the storm sewer and receiving waterways.

Best Management Practices

- Provide only covered containers, rather than those with completely open tops, to reduce the amount of rainwater entering the container and the potential for leaking during normal use.
- Place trash containers, recycling containers, and/or cigarette butt containers in high pedestrian traffic areas, common areas, entrances to buildings, and sidewalk entries from parking lots.
- Install adequate number and size of temporary trash receptacles for special events.
- If collected trash materials are hauled using a vehicle, install an impermeable liner in the cargo area to contain any leakage during transfer. Wash any leakage in designated wash areas that drain directly to the sanitary sewer.
- Provide a secure area for dumpster loading and unloading to prevent tampering, unwanted dumping, and damage from other vehicles.
- Inspect dumpster and trash can lids and other surfaces for deterioration or damage that may cause exposure to stormwater or allow leakage.
- Provide staff training to ensure only proper materials are loaded into the dumpster to help avoid accidental mixing of chemicals or introduction of corrosive materials.
- If any leaks are detected, clean up the spill and install berms or other devices to ensure nothing flows into the storm sewer system or receiving waters.

2.7 Chemical Storage

The City has several chemicals on site that are related to routine cleaning and maintenance. All chemicals that could potentially contaminate stormwater and local waterways should be clearly marked and stored in secure locations.

Best Management Practices

- Plainly label containers that could be susceptible to spillage or leakage to encourage proper handling and facilitate rapid response if a spill occurs.
- Store materials away from high traffic areas and on structures that keep them from coming into contact with the floor.
- Storage, loading and unloading areas should be covered or enclosed to reduce potential contact with stormwater.
- Storage spaces and containers should be routinely checked for leaks or signs of deterioration.
- Provide contract language that requires contractors to accommodate safe storage of chemicals and hazardous materials and to be responsible for safe handling and cleanup of any potential spills.

When storing outdoors:

- Store all materials in appropriately labeled containers.
- Avoid placing materials near storm drains.
- Make sure all outdoor storage containers have lids that are kept closed to prevent stormwater contamination.
- Routinely inspect outdoor material storage areas for leaking or corrosion of stored substances.
- Clean up all migrating materials upon discovery and contain the source of the pollutant to prevent potential contamination of stormwater and waterways.

2.8 Outdoor Loading

Outdoor loading areas are potential sources of illicit discharges if materials leak during transport to/from vehicles and containers. Spilled materials can mix with stormwater and be carried into receiving waterways, so proper storage and handling is necessary to help minimize exposure.

Best Management Practices

- If possible, perform outdoor loading under a tarp or covered structure.
- Preferably load material in dry weather.
- Avoid positioning loading areas near storm drains.
- Grade or berm the loading area so that stormwater drains to a dead-end connection or sanitary sewer, rather than a storm drain or waterway.

- Train employees in spill cleanup so that leaks and spills are addressed in a timely fashion.

2.9 Outdoor Material Stockpiling

The City has material stockpiling areas for the storage of bulk materials such as sand, mulch and gravel. These materials must be stored and handled in accordance with procedures that prevent potential contamination of the stormwater system or associate waterways. Long-term stockpiling is any material that will remain on site for more than 14 days.

Short-Term Best Management Practices

- Consider placing material on top of an impermeable membrane for quick clean-up.
- Consider placing an impermeable membrane on top of the stockpile and secure with cinder blocks/weight.
- When utilizing a portion of the stockpile, remove only a section of the protective covering to prevent moisture absorption and to minimize exposure to precipitation and wind.
- Store materials sufficiently away from storm drains or water bodies.
- Clean up all migrating materials upon discovery and repair the source of the migrating pollutant to prevent potential contamination of stormwater.
- Inspect outdoor material stockpiles for migrating materials.

Long-Term Best Management Practices

- For soil stockpiles storage over 14 days, where possible, cover with a tarp or provide temporary turf stabilization to prevent erosion.
- Store materials sufficiently away from storm drains or water bodies.
- Provide three-sided jersey barriers or silt fence to serve as perimeter controls and sediment barriers. Install addition ESC controls as necessary (i.e. erosion eels, etc.).
- Provide inlet protection or move stockpile in cases where migrating materials may enter storm drains.
- Clean up all migrating materials upon discovery and repair the source of the migrating pollutant to prevent potential contamination of stormwater.
- Inspect outdoor material stockpiles for migrating materials.

2.10 Salt Operations/Storage

Road treatment materials used during inclement weather, such as deicing salt and sand, should be carefully stored and handled to prevent migration into storm drains and waterways.

Best Management Practices

- Storage, loading, and unloading areas should be covered or enclosed to reduce potential contact with stormwater.
- Clean up all migrating materials upon discovery and repair the source of the migrating pollutant to prevent potential contamination of stormwater.
- During material delivery or loading, immediately clean spilled or tracked materials.
- Inspect storage areas for migrating materials or deterioration of containment structures.
- Facilities with SWPPPs should utilize written checklist inspections at least once annually.

2.11 Salt Spreaders

Any salt spreading equipment should be stored such that they do not come in contact with precipitation and subsequent stormwater flows, other than during normal use. At the end of winter, each spreader should be washed at designated wash bays. After a thorough washing to remove all salt, a salt neutralizer should be used. After washing, the salt spreaders should be stored under roof protection if possible or covered with a tarp or similar material to protect the spreaders from the weather. This will prevent corrosion of the spreaders and ensure any residual salt that may remain on the spreaders is not exposed to precipitation which could result in salt entering stormwater runoff and surface water bodies.

2.12 Absorbent Matting Maintenance

Absorbent matting is designed to catch oils, fuels, and chemicals from leaking vehicles and equipment to ensure materials do not migrate to storm sewer inlets or directly into water bodies. They are most effective when covered and not directly exposed to precipitation. However, absorbent matting can be used as a temporary best management practice without cover as long as they are frequently inspected and routinely replaced.

Best Management Practices

- Place absorbent matting directly under leaking vehicles and equipment.
- For Facilities that do not have a SWPPP, establish a routine schedule for inspecting,

cleaning and replacing matting.

- Wash matting in wash pad or wash bay where the waste water will enter sanitary system.
- Keep surface of matting clean of trash, debris, stone, and sediment.
- Facilities with SWPPPs should utilize written checklist inspections at least once annually.

2.13 Street Sweeping

Streets and parking areas are prone to collect and concentrate significant amounts of materials that contribute to polluted runoff into storm sewer systems and waterways. Sediment, debris, trash, automotive fluids, road salt, and trace metals can be minimized by such practices as street sweeping. Standard street sweeping vehicles can be employed for roadways and parking lots with curb and gutter, while smaller equipment can be used in other hardscape areas where material accumulates. In addition to reducing the chance and severity of polluted discharges into downstream waters, the practice also extends the useful life of stormwater basins by reducing the sediment load.

Best Management Practices

- Establish a schedule that best addresses the rate of accumulation of materials on pavement and hardscapes, and adjust the schedule after significant events such as snowfall (sand, salt).
- Materials collected during cleaning activities should be disposed of at an appropriate disposal site, and material recovery should be limited to the volume and weight appropriate for direct transport to such facilities
- Should materials collected during cleaning activities be temporarily stored on site, provide adequate controls to prevent runoff from this stockpile from going into the stormwater conveyance system.

2.14 Storm Drain Maintenance

Storm drains are often the point of entry into the storm sewer system, and they need to be cleaned and maintained on a regular basis to reduce the amount of pollution, trash, and debris entering receiving waterways. Clogged drains can overflow, thereby increasing the volume of water flowing into downstream structures and waterways, as well as the chances for damage and erosion.

Some common pollutants found in storm drains include:

- Trash and debris
- Sediments
- Oil and Grease
- Antifreeze
- Paints
- Cleaners and solvents
- Pesticides
- Fertilizers
- Animal waste
- Detergents

Best Management Practices

- Establish an inspection schedule for observing structure conditions and for screening potential illicit discharges.
- Utilize a vacuum truck for emptying materials trapped in drainage inlet and junction sumps or otherwise dispose of materials in accordance with state and federal regulations.
- Keep impervious surfaces clean of trash, debris, and sediment.

3.0 WASTE MANAGEMENT & DISPOSAL PROCEDURE

Responsible management of chemical and material wastes can greatly reduce the amount of pollution in stormwater runoff. The following sections describe the recommended procedures for managing and disposing of waste materials the City may encounter. For any of the materials listed below, always see the Safety Data Sheets (SDS) if available. The Standard Operating Procedures for Pollution Prevention is not meant to supersede or replace any Safety Data Sheet or manufacturer's instructions, but rather supplement them and further reduce stormwater pollution.

3.1 Scrap Tires

The primary means of scrap tire disposal is recycling through a registered waste tire hauler or at a scrap tire facility. If tires cannot be recycled they can be taken to a landfill that accepts waste tires. Virginia regulation states that no more than 100 scrap tires may be stored on site at any one time without a Solid Waste Permit. When the tires are transported off the site, keep records of the final destination.

3.2 Solid Waste

All solid items not recycled or managed as hazardous waste may be considered as solid waste and disposed of using a trash collection service or municipal landfill. Liquids generally cannot be disposed of in regular trash collection service and the local hazardous waste authority should be consulted if suspect liquids are in the waste collection. Recycling vendors may collect additional liquid wastes that are not listed in this document.

Waste should be collected in bags that are securely closed and transferred to a covered dumpster in good condition. Loose trash from unsecured collection could blow into stormwater drainage areas or come in contact with stormwater and potentially contribute pollutants into receiving waters.

3.3 Surplus and Excess Property

Materials and property that are no longer in use and stored (i.e. old vehicles, equipment, etc.) should be managed carefully so that they are expeditiously transferred to their next user or location. Materials should not be stockpiled in locations where they might deteriorate and potentially cause pollutants to enter the stormwater.

3.4 Landscape Waste

All vegetative wastes shall be managed in a manner that prevents it from getting into stormwater conveyances, including drains.

Any organic, plant or soil wastes generated as a result of landscape maintenance, including but not limited to leaves, grass clippings, or other debris shall be handled in an environmentally responsible manner to reduce likelihood of this material entering stormwater conveyances or local streams.

All vegetative waste that cannot be re-used onsite should be taken to the City's recycling facility or to a landfill.

3.4.1 Grass Clippings

Grass clippings shall be collected or blown back on to grassed areas. In no cases shall grass clippings be blown onto pavement, where they can then be washed down a storm drain.

3.4.2 Leaves

Leaves shall be picked up as promptly as practical in order to keep storm drains clear from obstruction, which could cause damaging flooding, and keep leaves from entering the storm sewer system. In the event leaves cannot be picked up in a timely manner, they should be blown back onto vegetated surfaces.

3.4.3 Sticks, limbs, or whole vegetation

Limbs, sticks, or other vegetative debris generated either as a result of maintenance activities or from natural causes should be cleaned up immediately upon generation or discovery and taken to the City's recycling facility or to a landfill. If vegetative debris cannot be removed from a site in a timely manner, it should be moved to a vegetated area where it cannot block stormwater conveyances or storm drains.

Training Plan

DEPARTMENT OF PUBLIC WORKS

201 James Avenue

P.O. Box 3401

Colonial Heights, VA 23834

April 2017

The City's MS4 permit requires the City to develop and implement an operation and maintenance program that includes a training component and that has as its ultimate goal the prevention or reduction of pollutant runoff from municipal operations.

The municipal training in pollution prevention and good housekeeping covers a variety of pollution prevention BMPs, and is given to all operations and maintenance employees, regardless of their duties. Pollution Prevention/Good Housekeeping training topics include:

- Good Housekeeping & Spill Prevention
- Spill Control & Response
- Vehicle Fueling
- Vehicle & Equipment Maintenance
- Vehicle & Equipment Washing
- Materials Management
- Waste Management
- Municipal Facility Maintenance
- Parking Lots & Streets
- Storm Sewer System Cleaning
- Landscaping & Grounds Maintenance

In addition to municipal training in pollution prevention and good housekeeping best management practices, all operations and maintenance employees also receive training to recognize and report illicit discharges. Individual SWPPPs, developed for high-priority facilities, shall be utilized during training for applicable municipal staff at that facility.

The purpose of this training plan is to ensure that all municipal operations eliminate or reduce stormwater pollution to the maximum extent practicable. The Department of Public Works will take the lead in providing training. Other municipal departments may assist with training when appropriate.

Training schedules are listed in Table 1. All training shall be provided to address requirements documented in the City's General Permit for Discharges from Small Municipal Separate Storm Sewer Systems (General Permit No. VAR040009).

Table 1. Training Frequency

Municipal Department/Division		Subject (Lead)		
	Illicit Discharge Detection & Elimination[1] (DPW)	Pollution Prevention & Good Housekeeping[2] (DPW)	Stormwater Pollution Prevention Plan (DPW)[3]	Spill Response4 (Fire & EMS)
Public works			Biennial	
Engineering	Biennial	Biennial		N/A
Street Maintenance	Biennial	Biennial		N/A
Fleet Maintenance	Biennial	Biennial	Biennial	N/A
Recreation and Parks	Biennial	Biennial		N/A
Facilities	Biennial	Biennial		N/A
Recreation	Biennial	Biennial		N/A
Schools	Biennial	Biennial	Biennial	N/A
Maintenance			Biennial	
Fire & EMS	N/A	N/A		Annual

[1]Select municipal employees from the departments/divisions listed receive training in the recognition and reporting of illicit discharges.

[2]Training given to listed departments includes good housekeeping and pollution prevention practices employed during road, street, and parking lot maintenance, in and around maintenance and public works facilities, and in and around recreational facilities, as required by permit Sections II.b.6.d.(2), (3), & (7).

[3]SWPPP training given to staff that work at facilities considered to be high priority facilities.

[3]Emergency response employees with HazMat certifications are required to have 24 hours of training annually in order to retain certification.

High Priority Facilities and SWPPPs

DEPARTMENT OF PUBLIC WORKS

201 James Avenue

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Colonial Heights, VA 23834

April 2021

1.0 IDENTIFIED LOCATIONS REQUIRING STORMWATER POLLUTION PREVENTION PLANS (SWPPPS)

The City's *General Permit for Discharges from Small Municipal Separate Storm Sewer Systems* (General Permit No. VAR040009) requires the identification of municipal high-priority facilities that have a "high potential of discharging pollutants." These facilities will require SWPPPs to be developed within 48 months of permit coverage.

High priority facilities include (i) composting facilities, (ii) equipment storage and maintenance facilities, (iii) materials storage yards, (iv) pesticide storage facilities, (v) public works yards, (vi) recycling facilities, (vii) salt storage facilities, (viii) solid waste handling and transfer facilities, and (ix) vehicle storage and maintenance yards.

High priority facilities that have a "high potential of discharging pollutants" are facilities that are not covered under a separate VPDES permit and at which any of the following materials or activities occur and are expected to have exposure to stormwater resulting from rain, snow, snowmelt or runoff are to be listed:

(a) Areas where residuals from using, storing or cleaning machinery or equipment remain and are exposed to stormwater;
(b) Materials or residuals on the ground or in stormwater inlets from spills or leaks;
(c) Material handling equipment (except adequately maintained vehicles);
(d) Materials or products that would be expected to be mobilized in stormwater runoff during loading/unloading or transporting activities (e.g., rock, salt, fill dirt);
(e) Materials or products stored outdoors (except final products intended for outside use where exposure to stormwater does not result in the discharge of pollutants);

Based on the criteria above, The City and JMT staff visited four sites that potentially meet the definition of a high priority facility to determine if the facilities have a high potential of discharging pollutants. Table 1 lists the City's facilities that were evaluated and Table 2 lists the high priority facilities determined to have high potential of discharging pollutants. These facilities require SWPPPs.

Table 1. List of Municipal High Priority Facilities

Street Address	Facility
501 Lake Avenue	Department of Public Works Yard
2701 Conduit Road	Recycling Facility
2600 Woodlawn Avenue	School Maintenance Yard
901 Meridian Avenue	Parks and Recreation Maintenance Building

Table 2. List of Municipal High Priority Facilities Requiring SWPPP

Street Address	Facility	Site Activity
501 Lake Avenue	Department of Public Works Yard	Vehicle Maintenance, Vehicle Fueling, Salt Storage and Operations, Material Storage/Stockpiling
2701 Conduit Road	Recycling Facility	Material Storage, Recycling
2600 Woodlawn Avenue	School Maintenance Yard	Vehicle Maintenance, Material Storage/Stockpiling

2.0 SWPPP DEVELOPMENT SCHEDULE AND LOCATIONS

All SWPPPs must be prepared and implemented within 48 months of permit coverage. The schedule for their development and the physical location where each SWPPP may be reviewed is listed in Table 2.

Table 2. SWPPP Development Schedule and Locations

Street Address	Facility	SWPPP Location	SWPPP Completed
501 Lake Avenue	Department of Public Works Yard	DPW Superintendent's Office	Yes
2701 Conduit Road	Recycling Facility	DPW Superintendent's Office	Yes
2600 Woodlawn Avenue	School Maintenance Yard	Director of Maintenance's Office	Yes

Turf and Landscape Management

DEPARTMENT OF PUBLIC WORKS

201 James Avenue

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Colonial Heights, VA 23834

April 2021

1.0 IDENTIFIED LOCATIONS REQUIRING NUTRIENT MANAGEMENT PLANS (NMPS)

The City staff and JMT staff met to discuss the criteria for locations requiring nutrient management plans (NMPs). The City and JMT staff conducted site visits to potential locations requiring NMPs to evaluate whether these locations have contiguous area of more than once acre where nutrients are applied to. Through this process, the following City properties have been identified as locations where nutrients are applied to a contiguous area of more than one acre. Per Section II.B.6.c of the City's General Permit for discharges from Small Municipal Separate Storm Sewer Systems (General Permit No. VAR040009) the City must develop NMPs for these properties.

Table 1. City Properties Requiring Nutrient Management Plans

Street Address	Facility	Latitude, Longitude	Approximate Area (acres) where Nutrient is Applied
901 Meridian Avenue	Shepard Stadium	37°14' 56.316"N, 77°24'57.967"W	2.2
1000 Yacht Basin Drive	Soccer Complex	37°15' 53.84"N, 77°23'30.509"W	8.9
401 Taswell Avenue	Lakeview Elementary Ball Fields	37°15' 58.395"N, 77°24'55.626"W	3.8

2.0 COMPLETED NUTRIENT MANAGEMENT PLANS (NMPS)

Per the City's permit, within 60 months of state permit coverage, the City shall implement turf and landscape nutrient management plans on all lands where nutrients are applied to a contiguous area of more than one acre.

The permit also establishes the following measurable outcomes the implementation of turf and landscape nutrient management plans:

(i) within 24 months of permit coverage, not less than 15% of all identified acres will be covered by turf and landscape nutrient management plans;

(ii) within 36 months of permit coverage, not less than 40% of all identified acres will be covered by turf and landscape nutrient management plans; and

(iii) within 48 months of permit coverage, not less than 75% of all identified acres will be covered by turf and landscape nutrient management plans.

The permit requires that the City shall not fail to meet the measurable goals for two consecutive years. Nutrient management plans for the facilities will be developed and are expected to be completed according to the schedule below.

Table 2. Nutrient Management Plan Completion Schedule

Street Address	Facility	Latitude, Longitude	Approximate Area (acres) where Nutrient is Applied	NMPs Completed By
901 Meridian Avenue	Shepard Stadium	37°14’ 56.316”N, 77°24’57.967”W	2.2	Standardized plan used by Virginia Green*
1000 Yacht Basin Drive	Soccer Complex	37°15’ 53.84”N, 77°23’30.509”W	8.9	Standardized plan used by Virginia Green*
401 Taswell Avenue	Lakeview Elementary Ball Fields	37°15’ 58.395”N, 77°24’55.626”W	3.8	Standardized plan used by Virginia Green*

*Nutrient application amounts and schedule included on the next page

VirginiaGreen
LAWN CARE®

City of Colonial Heights
P. O. Box 3401
Colonial Heights, VA 23834

April 18, 2019

Re: Turf Applications

Virginia Green Lawn Care looks forward to our relationship in 2019 with City of Colonial Heights and providing superior service and results. We will provide adequate notice for scheduling and any other technical advice needed.

Common Areas

Commercial Application One
Timing: February
Fertilization, Pre and Post-emergent Weed Control
Products: Prodiamine 65WG, Escalade 2 and Urea
Liquid Application: 2 gals per 1,000, 88 gals per Acre

Commercial Application Two
Timing: April/May
Fertilization, Pre and Post-emergent Weed Control
Products: Prodiamine 65WG, Escalade 2 and Urea
Liquid Application: 2 gals per 1,000, 88 gallons per Acre

Commercial Application Three
Timing: June
Slow Release Liquid Fertilization, Pre and Post-emergent Weed Control
Products: Prodiamine 65WG, Escalade 2 and Nitamin
Liquid Application: 2 gals per 1,000, 88 gals per Acre

Commercial Application Four
Timing: October
Balanced Granular Fertilizer: (promotes strong germination during aeration and seeding)
Product: 19-19-19 (30% Slow Release)
Dry Application

Commercial Application Five
Timing: November/December
Fertilization, Post-emergent Herbicide Control
Products: Coolpower and Urea
Liquid Application: 2gals per 1,000ft2, 88gals per Acre

Location	Cost per Application	Annual Total
Violet Bank	$108.00	$504.00
Library	$194.00	$970.00
Fire Station	$174.00	$870.00
Court House	$405.00	$2,025.00
Health Department	$106.00	$503.00
War Memorial	$90.00	$450.00
Legacy Garden	$49.00	$245.00

Sport Turf Applications

Sports Turf Round 1
Timing: March
Locations: Shepard Stadium, Civic Field, A Field, B Field, Lakeview 1, Lakeview 2 and Soccer Complex
Pre-emergent & Post-emerge Weed Control
Product: Ronstar 50WSP, Monument 75WG and Manor
Total: $3,100.00

Sports Turf Round 2
Timing: June
Locations: Shepard Stadium, Civic Field, A Field, B Field, Lakeview 1, Lakeview 2 and Soccer Complex
Post-emerge Weed Control & Liquid Fertilizer Application
Product: Monument 75WG, Manor and Nitamin
Total: $2,150.00

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Sports Turf Round 3
Timing: July
Locations: Shepard Stadium, Civic Field, A Field, B Field, Lakeview 1, Lakeview 2 and Soccer Complex
Application: Post-emerge Weed Control & Liquid Fertilizer Application
Product: Monument 75WG, Manor and Nitamin
Total: $2,150.00

Sports Turf Round 4
Timing: August
Locations: Shepard Stadium, Civic Field, A Field, B Field, Lakeview 1, Lakeview 2 and Soccer Complex
Application: Granular Fertilizer
Total: $1,925.00

Sports Turf Round 5
Timing: September
Locations: Shepard Stadium, Civic Field, A Field, B Field, Lakeview 1, Lakeview 2 and Soccer Complex
Application: Granular Fertilizer
Total: $1,925.00

Sports Turf Round 6
Timing: November
Locations: Shepard Stadium, Civic Field, A Field, B Field, Lakeview 1, Lakeview 2 and Soccer Complex
Application: Fall/Winter Clean up and Pre-emerge
Product: Simazine, Prodiamine
Total: $1,350.00

Please let me know if you have any questions or concerns about the applications. Thanks again for allowing Virginia Green Lawn Care the chance to service your properties and we look forward continuing our relationship.

Best Regards

Troy Hall
Commercial Sales

VirginiaGreen
LAWN CARE®

Department of Public Works Yard Stormwater Pollution Prevention Plan (SWPPP)

DEPARTMENT OF PUBLIC WORKS

201 James Avenue
P.O. Box 3401
Colonial Heights, VA 23834

April 2017

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ACRONYMS

BMP	Best Management Practice
DEQ	Virginia Department of Environmental Quality
EPA	U.S. Environmental Protection Agency
MCM	Minimum Control Measure
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollutant Discharge Elimination System
SWM	Stormwater Management
SWPPP	Stormwater Pollution Prevention Plan
UST	Underground Storage Tanks
VSMP	Virginia Stormwater Management Program
VPDES	Virginia Pollutant Discharge Elimination System

1.0 INTRODUCTION

This document is the Stormwater Pollution Prevention Plan (SWPPP) for City of Colonial Heights Public Works Yard, located at 501 Lake Avenue Colonial Heights, VA 23834.

This facility falls under the requirements of the City's General Permit for Discharges from Small Municipal Separate Storm Sewer Systems (MS4), General Permit No. VAR040009, with an effective date of July 1, 2013 and an expiration date of June 30, 2018. The permit is designed to reduce the discharge of pollutants from stormwater that leaves the regulated MS4 area within the City and subsequently enters the Commonwealth of Virginia's receiving waters, such as the Appomattox River and its tributaries.

According to the United States Environmental Protection Agency (US EPA), polluted stormwater runoff is a leading cause of impairment to nearly 40 percent of surveyed U.S. water bodies that do not meet water quality standards. Whether travelling by overland flow or through stormwater conveyance systems, polluted stormwater runoff is discharged into local receiving waterways. Such untreated water pollution can result in the destruction of fish, wildlife, and aquatic life habitats; it can also cause a loss of aesthetic value, and can threaten public health due to its potential to contaminate food, drinking water supplies, and recreational waterways.

The MS4 Permit aims at reducing pollutants in stormwater runoff by focusing on six Minimum Control Measures (MCMs), as follows: (1) Public Education and Outreach on Stormwater Impacts, (2) Public Involvement and Participation, (3) Illicit Discharge Detection and Elimination, (4) Construction Site Stormwater Runoff Control, (5) Post- Construction Stormwater Management in New Development and Redevelopment, and (6) Pollution Prevention and Good Housekeeping for Municipal Operations. Within each MCM, there are numerous Best Management Practices (BMPs) being implemented by the City of Colonial Heights.

This SWPPP has been created to satisfy the conditions of MCM 6 which requires the City of Colonial Heights to identify all of its high-priority facilities that have a high potential to discharge pollutants into stormwater and develop, implement, and maintain a SWPPP for each of them.

1.1 Organization of the Stormwater Pollution Prevention Plan

Section 1 of this SWPPP provides information regarding stormwater regulations, the requirements of the 2013 MS4 Permit, review and revision of the SWPPP, and availability of the SWPPP as a public document.

Section 2 describes the Public Works Yard Pollution Prevention Team responsible for compliance with the MS4 Permit. Section 3 briefly describes the site. Section 4 identifies the activities conducted, significant materials stored, potential pollutants, and the measures taken to eliminate or reduce the discharge of pollutants to stormwater drainage systems from the facility. Section 5 contains the definition and categories for both authorized and unauthorized non-stormwater discharges. Section 6 provides a general discussion of Best Management Practices (BMPs) and identifies those BMPs that are

implemented throughout the facility. Spill response is discussed in Section 7. A discussion on employee training is presented in Section 8. Procedures for facility inspections are provided in Section 9.

1.2 Stormwater Regulatory Framework

In 1972 the Federal Water Pollution Control Act (known as the Clean Water Act) was amended to effectively prohibit discharge of pollutants to "waters of the United States" from any point source unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) Permit. The United States Environmental Protection Agency (US EPA) delegated administration of the NPDES Program within Virginia to the Department of Environmental Quality (DEQ), and DEQ administers it as the Virginia Pollutant Discharge Elimination System (VPDES) Permit Program. The 1987 amendments of the Clean Water Act added Section 402(p) to the federal regulations, which established the framework for regulating discharges of pollutants via stormwater from industrial activities and MS4s. Section 402(p) required the US EPA to develop permitting regulations for stormwater discharges from MS4s and from industrial facilities, including construction sites.

In Virginia, discharges from municipal separate storm sewer systems are regulated under several programs: the Virginia Stormwater Management Act, the Virginia Stormwater Management Program (VSMP) Permit regulations, and the Clean Water Act (through the VPDES Permit Program) as point source discharges. MS4 regulations were developed and implemented in two phases. Implementation of the first phase began in the early 1990s and required that operators of MS4s serving populations of greater than 100,000 people (per the 1990 decennial census) apply for and obtain an individual permit to discharge stormwater from their outfalls. The second phase of MS4 regulations became effective March 23, 2003, and required that operators of small MS4s in "urbanized areas" (as defined by the latest decennial census) obtain coverage under a general permit to discharge stormwater from their outfalls. The City of Colonial Heights is classified as a small MS4, and thus operates under the General MS4 Permit.

According to the City's MS4 Permit, the following types of high-priority facilities require SWPPPs:

- Debris/Leaves Disposal Site
- Equipment storage and maintenance facilities
- Materials storage yards
- Public works yards
- Salt storage facilities
- Vehicle storage and maintenance yards

In addition, facilities in which any of the following materials or activities occur and are expected to have exposure to stormwater resulting from rain, snow, snowmelt or runoff also require a SWPPP:

1. Areas where residuals from using, storing or cleaning machinery or equipment remain and are exposed to stormwater;

2. Materials or residuals on the ground or in stormwater inlets from spills or leaks;
3. Material handling equipment (except adequately maintained vehicles);
4. Materials or products that would be expected to be mobilized in stormwater runoff during loading/unloading or transporting activities (e.g. rock, salt, fill dirt);
5. Materials or products stored outdoors (except final products intended for outside use where exposure to stormwater does not result in the discharge of pollutants); or
6. Particulate matter or visible deposits of residuals from roof stacks, vents or both not otherwise regulated (i.e., under an air quality control permit) and evident in the stormwater runoff.

1.3 Review and Revision of the Stormwater Pollution Prevention Plan

The SWPPP will be reviewed at least annually to determine if any revision is necessary to reflect changes in the facility or changes in the activities conducted that:

- May significantly increase the quantities of pollutants in stormwater runoff;
- Cause a new area of the facility to be exposed to stormwater or authorized non-stormwater discharges;
- Start-up of an activity that would introduce a new pollutant source at a facility; or
- If, during inspections or other discovery, it is determined that the existing best management practices (BMPs) are ineffective in minimizing the discharge of pollutants

Some examples of changes that could require a modification to the SWPPP include, but are not limited to:

- The activities occurring at the Facility (i.e. construction of vehicle washing pad, addition of asphalt tank, etc.)
- The location and storage of vehicles, equipment, chemicals, and other material (i.e. construction of new building, change location of equipment storage, etc.)
- The personnel responsible for implementing the SWPPP, specifically the Pollution Prevention Team (i.e. change of coordinator, etc.)
- The modification, addition or removal of control measures (i.e. check dams, berms, etc.)
- The modification or addition to the storm sewer system (i.e. new stormwater pipes/ditches, etc.)

In determining if revision of the SWPPP is necessary, the SWPPP Implementation team, identified in Section 2.0, will review the Annual Comprehensive Site Compliance Evaluation, which is described in Section 5.

1.4 Location of the Stormwater Pollution Prevention Plan (SWPPP)

The SWPPP shall be kept in the office of the Public Works Superintendent, which is located in the administrative office of the Public Works Yard. A copy of the SWPPP will also be maintained by the Project Coordinator.

2.0 POLLUTION PREVENTION TEAM

The Project Coordinator shall have the primary responsibility to keep and maintain the SWPPP document, and to lead the SWPPP Implementation Team. The Public Works Superintendent shall be responsible for coordinating with the Project Coordinator regarding quarterly inspections and annual inspections.

Table 1. Pollution Prevention Team – City of Colonial Heights DPW Yard

POSITION	NAME	CONTACT INFORMATION	PRIMARY RESPONSIBILITIES
Project Coordinator	Troy McCain	(804) 520-9334 mccaint@colonialheightsva.gov	SWPPP OVERSIGHT • Provide the necessary resources to comply with the SWPPP. • Ensure assigned staff implements the SWPPP and all its components. • Provide management support to staff.
Project Coordinator	Troy McCain	(804) 520-9334 mccaint@colonialheightsva.gov	SWPPP IMPLEMENTATION • Implement and administer the SWPPP. • Implement the Emergency Response Plan and Procedures (part of the Hazardous Waste Management Program). • Provide Stormwater Training for facility personnel. • Maintain the necessary records and files.
Public Works Superintendent	Mike West	(804) 520-9372 westm@colonialheightsva.gov	CHEMICAL SPILL RESPONSE • Minimize the threat of chemical spills to personnel and to the surrounding environment; and • Protect storm drain inlets and sanitary sewer drains from any spillage or contamination once personnel safety is assured.
Public Works Superintendent Stormwater Foreman	Mike West A.J. Covington	(804) 520-9372 westm@colonialheightsva.gov (804) 520-9372	CONDUCT ROUTINE FACILITY INSPECTIONS • Implement BMPs for respective area(s) of responsibility. • Conduct routine inspections of respective areas of responsibility to ensure BMPs are in place, operative, and effective at all times in and around the areas where activities that may impact stormwater are conducted. • Submit quarterly inspection reports, using the Inspection Checklist, to the Project Coordinator.
Project Coordinator	Troy McCain	(804) 520-9334 mccaint@colonialheightsva.gov	MS4 PROGRAM MANAGEMENT • Prepare and revise the SWPPP, as necessary. • Conduct periodic facility inspections to assure compliance. • Collect training records. • Prepare and submit Annual MS4 Report. • Serve as a technical resource to other departments.

3.0 SITE DESCRIPTION

The Facility is located at 501 Lake Avenue in Colonial Heights, Virginia. The Facility is utilized as a City Public Works Yard and is generally used for vehicle and equipment maintenance and storage, soil/salt stockpiling, and vehicle fueling. The specific activities that occur at the Facility are outlined in Section 4.0.

The storm sewer drainage of the Facility generally flows towards the western side of the Facility. The stormwater sheet flows across the paved lot and conveyed into earthen ditches and culverts. It then exits the Facility at an outfall located along the western fence line of the Yard which ultimately discharges to an impoundment on Swift Creek. A site-specific layout and storm sewer drainage map of the Facility is provided in Appendix A. The site map includes the following:

- Aerial view of the location and extent of significant structures and impervious surface (roofs, paved and compacted areas, and other impervious areas).
- The approximate location of buildings as identified in Table 2.
- The approximate location and direction of major stormwater conveyances including, ditches, pipes, swales, and drop inlets.
- The approximate location of regulated outfalls and other points of discharge.
- The approximate location of surface water bodies and downstream MS4s receiving discharge from the Facility, where applicable.
- The approximate location and description of allowable non-stormwater discharges as identified in Section 5.0.
- The approximate location of structural source controls (i.e. silt fence, berms, etc.) as identified in Section 6.0.
- The approximate location and sources of stormwater run-on to the site from adjacent property, where the discharge has the potential to contain pollutants.

The Facility has several buildings which are identified in the table below.

Table 2. Summary of Buildings Located at the Facility

Building	Location	Drains
Fueling Station	Noted on the Map	
Salt Storage	Noted on the Map	No drains present
Fleet Maintenance	Noted on the Map	Drain present – connected to sanitary sewer
Vehicle Storage	Noted on the Map	No drains present
Administration Office	Noted on the Map	

4.0 POTENTIAL POLLUTANTS AND POLLUTANT SOURCES

The Facility is primarily utilized for fleet and equipment fueling, vehicle and equipment maintenance and storage, erodible materials storage (i.e. soil), and salt storage. The different activities that occur at this site and the associated potential pollutant and pollutant sources are described in this section and are summarized in Table 3.

Fleet and Equipment Fueling Station

The outdoor fueling station has fuel dispensers that are connected to underground storage tanks (USTs). A concrete containment system is in place for the fueling area. It is equipped with a diverter valve that remains closed at all times in the event of a spill. A spill kit is provided proximate to the fueling station. Fueling is a potential source of stormwater pollution at the facility. Stormwater run-on has the potential to wash away any spills or leaked fluids located at the fueling area and subsequently drain into stormwater conveyance systems.

Fleet and Equipment Parking/Storage Area

There are several open areas utilized for parking school buses, other fleet vehicles and equipment. Vehicles and equipment are susceptible to leaking and those that are stored outdoors, subject to weather, pose a pollutant risk. Rainfall at the facility could wash leaked fluids into the stormwater system.

Fleet and Equipment Maintenance Shops

The facility performs equipment and vehicle maintenance for their fleet at their fleet and equipment maintenance shop. The shop stores paints, motor oil, transmission fluid, hydraulic oil, antifreeze, solvents, etc. The maintenance shop has floor drains that are connected to the sanitary sewer system. A spill kit is located inside the shop.

Vehicle Washing

Vehicle washing of regular size vehicles is performed in an indoor wash bay located inside the Maintenance Shop. The wash bay is equipped with a drain that is connected to the sanitary sewer. Outdoor vehicle washing is only allowed at the designated outdoor vehicle washing area that drains to a treatment control BMP (to be installed).

Salt Storage Building, Outdoor Salt Storage, Mixing Pad and Spreader Racks

The facility has a salt storage building with a mixing pad, an outdoor salt storage area that is covered with a tarp and spreader racks which are associated with their snow removal operations. Loading and unloading of salt is done in the area of the salt building and mixing pad. Lubing/greasing of the spreaders

are performed at the spreader rack. Salt and lube/grease, if not contained, are potential pollutants that can be conveyed into the stormwater system. The proposed BMP will provide treatment for runoff associated with salt operations.

Material Stockpile/Storage Area

The facility has several designated open areas for storing both erodible (soil, sand, finer aggregates) and non-erodible (rock, concrete, aggregates) materials in stockpiles. Erodible materials, subject to weather, has a potential to migrate into the stormwater system. Berms and silt fence around the stockpiles are utilized by the City to contain the erodible materials and prevent migration of sediment from these stockpiles into the stormwater conveyances. The proposed BMP will provide treatment for runoff associated with some material storage areas.

Petroleum and Chemical Storage

The facility stores petroleum and other chemicals (antifreeze, solvents, used oil, batteries, etc.) inside the maintenance shop and in other indoor storage areas. The facility has a designated area for storage of their hazardous waste. Petroleum or chemical containers stored outside are kept closed at all time and stored under cover/roof. Petroleum and chemical storage containers, subject to weather, is a potential pollutant source in case of a spill or a ruptured container.

Outdoor Waste Storage

The facility has dumpsters for trash that are covered. Uncovered trash, subject to weather, can be a potential pollutant source. Leaks and leachates from trash can be conveyed into the stormwater system. The facility's trash dumpsters are covered to prevent migration of pollutants into the stormwater system.

Table 3. Activity and Associated Potential Pollutants/Sources

Activity	Description	Pollutants/Sources
Fleet and Equipment Fueling Station	Fueling is a potential source of stormwater pollution at the facility. Stormwater run-on has the potential to wash away any spills or leaked fluids located at the fueling area and subsequently drain into stormwater conveyance systems.	*Fuels/Oils* • Spills caused by overtopping • Spills and leaks during deliveries • Rainfall running onto and off fueling area
Fleet and Equipment Parking/Storage Area	Parking and storage of vehicle and equipment is a potential for stormwater pollution. In particular, vehicles and equipment are susceptible to leaking and those that are stored outdoors, subject to weather, pose a pollutant risk.	*Antifreeze, petroleum, etc.* • Container spills or leaks • Vehicle and equipment leaks

Activity	Description	Pollutants/Sources
Vehicle Washing	Vehicle and equipment washing is a potential source of stormwater pollution at the facility. Vehicle wash water can be laden with pollutants such as petroleum, oils, salt and sediment. These pollutants, if not controlled, can be subsequently conveyed into stormwater systems.	*Fuels/Oils, Salt, Sediment* • Vehicle and equipment wash water laden with pollutants • Vehicle and equipment leaks
Salt Storage Building, Outdoor Salt Storage, Mixing Pad and Spreader Rack	Loading and unloading of salt and lubing/greasing of the spreaders at the spreader rack has the potential to contribute to stormwater pollution. Salt and lube/grease, if not contained, are potential pollutants that can be conveyed into the stormwater system.	*Salt, Lube Oil* • Residual salt on mixing pad • Residual salt on spreaders • Leaks when lubing spreaders
Material Stockpile/Storage Area	Erodible materials, subject to weather, has a potential to migrate into the stormwater system.	*Sediment from Sand, Soil, Fine Aggregate, etc.* • Rainfall running onto and off erodible stockpiles • Sediment migration from loading and unloading of erodible stockpiles
Petroleum and Chemical Storage	Petroleum and chemical storage containers, subject to weather, is a potential pollutant source in case of a spill or a ruptured container.	*Antifreeze, petroleum, solvents, etc.* • Spills caused by transferring from one container to another • Container spills or leaks from container rupture • Rainfall running onto and off storage area
Outdoor Waste Storage	Uncovered trash, subject to weather, can be a potential pollutant source. Leaks and leachates from trash can be conveyed into the stormwater system.	*Petroleum, chemicals, bacteria, etc.* • Leaks/leachate from dumpster • Rainfall running onto and off storage area

5.0 POTENTIAL NON-STORMWATER DISCHARGES

The following non-stormwater discharges are authorized by the Permit and do not need to be addressed in this SWPPP, if:

1. The non-stormwater discharges, or flows, are covered by a separate individual, or general VPDES permit, for non-stormwater discharges;
2. The individual flows have been identified in writing by the DEQ as *de minimis* discharges that are not significant sources of pollutants to surface waters and do not require a VPDES permit;
3. Discharges which have not been identified by DEQ as significant contributors of pollutants including: water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration, uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, flows from riparian habitats and wetlands, and discharges or flows from firefighting activities; or
4. The discharge of materials resulting from a spill is necessary to prevent loss of life, personal injury, or severe property damage.

The following allowable non-stormwater discharges have been identified:

Table 4. Allowable Non-Stormwater Discharges

Type of Allowable Non-Stormwater Discharge	Location on Map
Ice Maker Drain	East side of fleet maintenance building
Potable Water Spigots	South side of administrative building, East side of fleet maintenance building

NOTE: Spigots used for salt mixing pad and vehicle wash pad should be limited to allowable discharge activities.

6.0 BEST MANAGEMENT PRACTICES

Best Management Practices, or BMPs, are the practices, procedures, policies, prohibitions, schedules of activities, structures, or devices that are implemented to prevent or minimize pollutants from coming into contact with precipitation, stormwater runoff, or non-stormwater flows. BMPs are also structures or devices that remove pollutants from stormwater runoff before the runoff enters a stormwater drainage system or surface water. Therefore, BMPs are often categorized as either "source-control" BMPs or "treatment-control" BMPs.

Source-control BMPs include all types of measures designed to prevent pollution at the source, that is, to keep stormwater from coming into contact with pollutants in the first place. Source-control BMPs are generally simple, low-maintenance, cost-effective, and broadly applicable. They may be categorized as non-structural or structural. Good housekeeping at a municipal yard is an example of a non-structural, source-control BMP.

Treatment-control BMPs are devices or methods used to treat stormwater runoff to remove pollutants; these BMPs are frequently more costly to design, install, and operate than source-control BMPs. More importantly, treatment-control BMPs are typically not as effective as source-control BMPs, and the effectiveness is highly dependent on regular maintenance. Nevertheless, they can be appropriate and useful under certain conditions. However, treatment-control BMPs typically do not remove all pollutants from stormwater runoff and, therefore, should not be regarded as disposal systems.

6.1 Source Control BMPs

The following source-control BMPs will be employed for use at the Public Work Yard at the designated facilities.

Fleet and Equipment Fueling Station

a) Train employees on proper fueling methods and spill cleanup techniques.
b) Maintain absorbent spill cleanup materials and spill kits at the fueling island.
c) Maintain containers for disposal of contaminated cleanup materials.
d) A containment system is installed for the fueling station. Keep the diverter valve closed at all times, in case of a spill.
e) Sweep the fueling station area and dispose of debris in the trash can, do not hose down the area.

Fleet and Equipment Parking/Storage Areas

a) Train employees to look for oil and other fluid leaks and trash in these areas, and to know what procedure to use when these items are noticed.

b) Routinely check condition of vehicles and equipment stored in these areas. Old, leaking vehicles should be removed from these areas.
c) Sweep the area and dispose of debris in the trash can, do not hose down the area.

Fleet and Equipment Maintenance Shops

a) Train employees to look for oil and other fluid leaks in the garage/service bay, and to know what procedure to use when these items are noticed.
b) Train employees to use drip pans, clean them out after use.
c) Clean grate drain on a routine basis.
d) Maintain absorbent spill cleanup materials and spill kits at the service area.
e) Maintain containers for disposal of contaminated cleanup materials.
f) Keep garage/service bay clear of debris.

Vehicle Washing

a) Train employees to perform vehicle washing in the indoor wash bay or at the designated outdoor vehicle washing area. Offsite washing at a commercial lot is allowed.
b) Clean grate drain on a routine basis.
c) Keep wash bay clear of debris.
d) Maintain and cleanout accumulated sediment in the proposed treatment control BMP.

Salt Storage Building, Outdoor Salt Storage, Mixing Pad and Spreader Rack

a) Train employees to look for oil and other fluid leaks and trash in these areas, and to know what procedure to use when these items are noticed.
b) Sweep the area and dispose of salt and debris in the trash can, do not hose down the area.

Material Stockpile/Storage Area

a) Properly maintain existing controls such as silt fence and/or berms around stockpiles.
b) Train employees to evaluate the condition of the existing controls such as silt fence and berms to determine the condition and efficacy of the controls and to know what to do
c) Train employees to look for evidence of potential sediment migration from the stockpiles and to know what procedure to use when these items are noticed.
d) Sweep the area and dispose of debris in the trash can. Residual soil or stone can be re-

stockpiled. Do not hose down the area.

Petroleum and Chemical Storage

a) Store containers indoors. If storing outside, containers need to be closed at all times and under cover/roof.
b) Train employees to:
    a. Look for chemical stains and fluid leaks under storage containers.
    b. Clean up spilled oil using absorbent – stay dry/quick dry, sweep it up, and dispose of it in the trash.
c) Train employees to use drip pans, clean them out after use, and properly store inside.
d) Label contents of all containers.
e) Routinely check condition of containers.
f) Keep area clear of debris and periodically dispose of unneeded items.

Outdoor Waste Storage

a) Keep the dumpster lids closed at all times.
b) Train employees to:
    a. Look for chemical stains and fluid leaks under dumpster.
    b. Clean up spilled oil using absorbent – stay dry/quick dry, sweep it up, and dispose of it in the trash.
c) Routinely check condition of dumpsters.
d) Keep area clear of debris.
e) Locate the dumpsters at least 100 feet from watercourses/ditches.

6.2 Treatment Control BMPs

Currently, the facility has a riprap berm around the outfall, located at the western edge of the property, that captures stormwater from the stream/ditch on the property. The structure was meant to detain water to help trap sediments before discharging offsite to the Swift Creek tributary/impoundment.

The City is proposing to construct a treatment control BMP to control stormwater runoff from several activities including:

- outdoor vehicle washing at the designated outdoor vehicle washing area
- salt operations (salt storage, mixing pad, spreader racks)
- material stockpile
- fleet and equipment parking

The treatment control BMP that the City is proposing will help treat the stormwater runoff before reaching the stream/ditch on the property.

6.3 Good Housekeeping BMPs

Good housekeeping practices include activities that are intended to maintain a clean site and keep equipment in good working order to prevent pollutants from coming into contact with stormwater runoff. Daily cleanup and inspections are the most effective means of achieving good housekeeping. For the most part, good housekeeping practices should be incorporated into the day-to-day activities at the facility, as they foster a habit of good housekeeping, and they also help to assure worker safety.

Employees shall be trained to understand the practices and to implement them on an ongoing basis. The following good housekeeping BMPs will be employed for use at the Public Works Yard:

- Tools and materials are returned to designated storage areas after use;
- All storage containers are properly labeled, to include warning labels if appropriate;
- All spills are immediately cleaned up;
- Spilled oil and grease is absorbed using absorbent material, which is then swept up and disposed of in the trash;
- Waste materials are collected and properly discarded;
- Indoor work areas are kept neat, uncluttered, and well-ventilated to discourage outdoor work that has the potential to generate pollutants and to allow leaks and spills to be quickly detected and controlled;
- Outdoor work areas are swept regularly (not hosed) and kept neat and clean;
- When outdoor work areas need cleaning beyond sweeping, all wash waters are contained, collected, and properly managed;
- Outdoor waste or trash receptacles are kept covered and regularly emptied; adjacent areas are inspected for misplaced or wind-blown litter; and
- Employees are regularly trained on proper good housekeeping practices.

6.4 Preventive Maintenance BMPs

Preventive maintenance BMPs relate to maintaining equipment in good working order. Having equipment failures or using equipment that poorly functions may result in the discharge of pollutants to the storm drainage system. Therefore, to reduce the likelihood of breakdown or failure, major equipment should have a preventive maintenance schedule for inspection, repair, or replacement of fluids (e.g., hydraulic, lubricating, cooling), greases, seals, hoses, filters, pressure gauges, piping, etc. Paved and landscaped areas should not be allowed to degrade to the point where they erode and contribute pollutants to stormwater runoff. Leaky roofs, broken doors, cracked pavement and berms,

and any other enclosure or structural defects that may impact the quality of stormwater runoff should be promptly repaired. Structural BMPs and storm drains within facility boundaries also need to be regularly inspected and maintained.

6.5 Proper Materials Handling and Storage BMPs

Materials handling and storage BMPs relate to controlling the potential for leaks, spills, and losses of materials delivered, used, and stored at a facility. Spills and leaks of materials can accumulate in soils or on surfaces and be carried away in stormwater runoff or in authorized non-stormwater discharges. These materials handling and storage BMPs will be employed:

6.5.1 Material Use

- Only obtain the amount of materials needed to finish a particular job;
- Limit waste generation by keeping good records and reviewing activities;
- Recycle materials whenever possible; and
- Read and follow manufacturer directions for use of materials and review the associated Material Safety Data Sheet (MSDS) for each product.

6.5.2 Materials Storage

- Store materials indoors or in a covered area (where possible) where exposure to rainwater is eliminated;
- Store lead-acid batteries indoors;
- Use hazardous materials storage lockers with spill containment or flammable materials lockers when appropriate;
- Locate storage areas away from vehicle and equipment paths to reduce the potential for accident-related leaks or spills;
- Store drums or other containers away from storm drain inlets;
- Provide informational signing, labels, restricted access, locks, inventory control, overhead coverage, and secondary containment for all hazardous material storage areas or container units; and
- Conduct regular inspections for leaks and control dates.

6.5.3 Proper Waste Handling BMPs

Waste handling BMPs relate to properly controlling, collecting, storing, and disposing of wastes that are generated at a facility. All facility personnel should be aware that the disposal of any waste (including wash water) into a storm drain inlet or stormwater conveyance (i.e., ditches or streets) is an illicit or unpermitted discharge. Likewise, disposing of waste (including wash water) onto a paved surface such that it may be carried to a storm drain inlet or stormwater conveyance (i.e., ditches, streets) is an illegal

discharge.

The following waste handling BMPs will be employed for use at the Public Works Facilities:

- Sweep or vacuum (dry methods) work areas to collect metal, wood, and other particulates and debris frequently;
- Limit waste generation by keeping good records and reviewing activities;
- Recycle materials whenever possible;
- Separate and segregate different types of wastes;
- Store waste materials indoors or in a covered area where exposure to rainwater is eliminated;
- Continue using service provider for regularly-scheduled waste disposal;
- Use hazardous materials storage lockers with spill containment or flammable materials lockers when appropriate;
- Locate the waste storage area away from vehicle and equipment paths to reduce the potential for accident-related releases;
- Provide informational signage, labels, restricted access, inventory controls, overhead coverage, and secondary containment for all hazardous waste storage areas or container units;
- Conduct regular inspections for leaks and control dates.

7.0 SPILL PREVENTION AND RESPONSE

For spills, the old saying that "an ounce of prevention is worth a pound of cure" is appropriate. Spill clean-up can be labor-intensive and costly, as it involves containing the spill, collecting the spilled substance, properly disposing of the spilled materials, and filing of associated reports to regulatory agencies, not to mention possible monetary fines. Spills and leaks are some of the most significant sources of stormwater pollution and are, in most cases, avoidable.

Spill prevention and control procedures may include:

- Placing bollards, berms and/or containment features around structures or areas where fluids are stored, so releases can be prevented, easily detected, and controlled;
- Using drip pans for maintenance operations involving fluids and under leaking vehicles and equipment awaiting repair;
- Placing spill kits in areas where fluids are stored or in areas where activities may result in a spill;
- Providing training for proper use of materials and equipment used during operations and maintenance activities;
- Providing training for proper use of spill response equipment and supplies; and
- Conducting outdoor maintenance activities on paved surfaces to allow for easy detection, control, and cleanup of spills.

Spill prevention, control, and cleanup apply to all materials and wastes - not only hazardous substances. The toxic water quality effects from spills of hazardous substances (e.g., acids, oils, greases, fuels, solvents, pesticides) are commonly understood. However, non-hazardous materials, such as sand, litter, and wash water, among others - can also greatly impact water quality in receiving waters.

The facility will retain a spill history log of their spills (both reportable and non-reportable) using the summary log included in Appendix B. Additionally, if a reportable spill occurs at the Facility, the spill will be reported using the procedures and form provided in Appendix C.

7.1 Non-Reportable Spills

- Oil spills less than 25 gallons that do not reach a navigable waterway. These spills must be cleaned up and documented.
- Chemical spills not exceeding a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Reportable Quantities (RQ) or are wholly contained inside a building.

7.2 Reportable Spills

- Oil spills greater than 25 gallons must be reported to the Virginia DEQ within 24 hours
- Oil spills of any quantity that immediately threaten or affect (e.g. cause a sheen) a waterway must be immediately reported to the National Response Center (NRC) (1-800-424-8802) and the DEQ.
- Chemical spills that equal, or exceed, the RQ, or are an identified marine pollutant must be immediately reported to the NRC and the DEQ.
- Chemical spills below their RQ, or without an RQ that reach water must be reported to the DEQ.

Spills will be reported to the appropriate regulatory agency and staff as identified on Table 1 for individual responsibilities for pollution prevention.

8.0 EMPLOYEE TRAINING

Personnel identified in the Pollution Prevention Team for SWPPP Oversight (in Section 2.0) is responsible to ensure that all of their designated employees receive the appropriate Stormwater Management training on a biennial basis.

The project Coordinator will coordinate training related to stormwater management on at least a biennial basis and maintains all training records for inclusion in the City's Annual MS4 Report, as submitted to DEQ.

The purpose of stormwater-related training is to educate workers on the day-to-day activities that may impart pollutants into stormwater discharges from the site, to help in the implementation of BMPs, to ensure understanding of the City's procedures and policies for Water Quality, and to ensure employees understand what illicit discharges are and how to respond to them when they are witnessed.

Training attendance sheets and any other training documentation shall be kept in Appendix D. The instructor's name, if applicable, date and time of training, location of training, training title, participants' names, and corresponding employee numbers will be listed.

All training records shall be kept for a period of no less than three years.

9.0 FACILITY INSPECTIONS

9.1 Quarterly Inspections

At least once per quarter, the facility will be inspected using the City's Public Works Yard Inspection Checklist, found in Appendix E. The inspection shall be conducted by the Pollution Prevention SWPPP Implementation Team, identified in Section 2.0.

The purpose of these inspections will be to identify problems early so that they can be corrected in a timely fashion. All completed forms shall be placed in Appendix E Public Works Superintendent or his/her designee; he or she shall also send a copy of such reports to the Project Coordinator for inclusion in the Annual MS4 Report, which is submitted to the Virginia Department of Environmental Quality (DEQ) by October 1 of each year.

9.2 Annual Comprehensive Site Compliance Evaluation

An annual Comprehensive Site Compliance Evaluation (CSCE) of the Public Works Yard will be conducted by the Pollution Prevention SWPPP Implementation Team, identified in Section 2.0, to help assure that significant changes in facilities or activities are identified and can then be reflected in the SWPPP. The annual CSCE will include:

- Visual inspection of all potential sources of pollutants that may enter the stormwater drainage system via stormwater or non-stormwater discharges;
- A review and assessment of all BMPs to determine whether the BMPs are adequate, properly implemented and maintained, or whether additional BMPs are needed; and
- Visual inspection of equipment needed to implement the SWPPP, such as spill response equipment, drip pans, brooms or vacuum sweepers, or containers for used absorbents.

The Annual CSCE will be documented by the Project Coordinator as follows:

- Identification of personnel performing the evaluation
- The date(s) of the evaluation
- Findings of the evaluation
- Recommended modifications of the SWPPP
- Schedule for implementing SWPPP revisions
- Any incidents of non-compliance and the corrective actions taken

Following the evaluation, revisions to the SWPPP, if needed, will be completed within 90 days. Blank evaluation forms are located in Appendix F, and completed evaluation forms shall be placed there by the Project Coordinator.

Table 5 may be used to track annual assessments and follow-through on recommendations. The Pollution Prevention SWPPP Implementation Team are available for technical assistance during the evaluation process, if needed.

Table 5. Assessment Log

Assessment Date (mm/dd/yyyy)	**Assessor** (Name &	**Revisions Required?** (Y/N)		**Follow Through?** (Date or n/a)
		Yes	No	
		Yes	No	
		Yes	No	
		Yes	No	
		Yes	No	
		Yes	No	

APPENDIX A. FACILITY SITE MAP

APPENDIX B. LIST OF SIGNIFICANT SPILLS AND LEAKS

LIST OF SIGNIFICANT SPILLS AND LEAKS

Facility Name		MS4 Permit #:	VAR040009

Date	Spill or Leak	Person Initials	Location	Description			Response Procedure		
				Type of Material	Quantity	Source Reason	Amount Recovered	Isolated?	Measures

APPENDIX C. DETAILED INFORMATION FOR REPORTABLE RELEASES

DETAILED INFORMATION FOR REPORTABLE RELEASES

Complete this form for each significant spill incident. Keep original form with the Plan.

INCIDENT DATE: _____ INCIDENT TIME: _____
REPORT DATE: _____ DISCOVERY TIME: _____
FACILITY NAME: _____
ADDRESS & LOCATION: _____
PERSON REPORTING: _____ PHONE: _____
MANAGER IN CHARGE: _____ PHONE: _____

SPILLED PRODUCT INFORMATION:

Spill Location: _____
Product: _____
Storage Capacity of Product Container: _____
Spill Volume: _____
Size of Area Affected by Release: _____
Duration of Release: _____

	YES	NO	
Spill from or suspected from a leaking AST, UST, or piping?	☐	☐	
Spill contained on premises?	☐	☐	
Did the spill enter the stormwater drainage system?		☐	☐
Did the spill enter a body of water?	☐	☐	

Nearest body of water or body of water spill entered? _____ Distance: _____

DESCRIPTION: (check all applicable)

☐ leaking drums/containers ☐ overfill, vehicle unattended ☐ equipment failure
☐ leaking tank/lube truck ☐ drive off, hose in vehicle ☐ other human error
☐ overfill, during fuel drop ☐ other (than storage device or equipment failure, or human error)

Hazards associated with the spill: _____
Amount of spill control supplies used/ to be restocked: _____
Type and amount of material to be disposed: _____
Measures taken to prevent recurring incidents: _____
Personal Injuries: _____
Additional pertinent information: _____

AGENCIES NOTIFIED OF INCIDENT:

Agency Name and Contact: _____Date/Time: _____
Agency Name and Contact: _____Date/Time: _____
Agency Name and Contact: _____Date/Time: _____

IT IS NOT NECESSARY TO WAIT FOR ALL INFORMATION BEFORE CALLING THE NATIONAL RESPONSE CENTER.

APPENDIX D. TRAINING RECORDS

APPENDIX E. QUARTERLY CHECKLIST FOR FACILITY ASSESSMENT

SWPPP QUARTERLY INSPECTION CHECKLIST

Facility: _____ Inspector: _____ Date: _____

Current Weather Conditions: _____ Date of Last Rain: _____

Were there corrective action requirements from previous inspection? _____

If yes, were all corrective actions performed and documented on inspection checklist? _____

Activity/Materials	Yes	Required Action	Date Corrected
SALT OPERATIONS	□		
Is there salt accumulation on the lot?	□		
Is there salt accumulation at the spreader racks?	□		
Is the berm on the mixing pad adequate and in good condition?	□		
Is the salt building in good condition?	□		
OUTDOOR MATERIAL STOCKPILE	□		
Are controls in place for erodible piles?	□		
Are the controls for erodible piles adequate and in good condition?	□		
Are there any observed sediment migration from erodible piles?	□		
VEHICLE & EQUIPMENT MAINTENANCE	□		
Are maintenance activities performed indoors where practical?	□		
Are vehicles and equipment stored properly?	□		
Are there any vehicles or equipment leaking?	□		
Is an oil/water separator present and is it properly maintained?	□		
VEHICLE WASHING	□		
Is vehicle washing performed indoors?	□		
Is vehicle washing performed outdoors?	□		
Is there evidence that washing has taken places in other areas (e.g. hoses or wash buckets)?			
WASTE MANAGEMENT	□		

Activity/Materials	Yes	Required Action	Date Corrected
Are dumpster lids kept closed?	□		
Is loose garbage and waste material picked up and disposed regularly?	□		
PETROLEUM AND FUELING	□		
Are oil containers managed properly or away from inlets to the stormwater drainage system?	□		
Are spill kits properly stocked and readily available at the Facility?	□		
Are fuel leaks and spills controlled using absorbents/ drip pans/ pads?	□		
Are fueling areas covered or otherwise protected from precipitation and run-on?	□		
Are dry cleanup materials swept up, containerized, and disposed properly?	□		
OTHERS	□		
Are all other containers intact and appropriately labeled?	□		
Are empty containers/drums labeled as such?			
Are drop inlet controls in place and are they in good working condition?	□		
Are check dams or other E&S controls present and are they intact and properly maintained?	□		
Is there any observed erosion on the lot?	□		
Is there any significant sediment observed in drop inlets and other stormwater drainage ways?	□		
Is there and significant sediment build up observed in outfalls?	□		
Is there any observed pollutant run-on from adjacent property, not previously identified?	□		

APPENDIX F. ANNUAL COMPREHENSIVE SITE COMPLIANCE EVALUATION FORMS

ANNUAL STORM SEWER INSPECTION CHECKLIST

DATE:
WEATHER CONDITIONS:
LAST DATE OF RAIN:
APPROXIMATE AMOUNT:
INSPECTOR:

***LIST ANY SPECIFIC PROBLEMS NOTED DURING THE INSPECTION AND ACTION TAKEN TO CORRECT BEFORE NEXT INSPECTION:**

---

1. CHECK FOR EXCESSIVE EROSION OF EARTHENED AND GRAVEL COMPACTED LOTS:

2. CHECK SEDIMENT AND DEBRIS BUILD-UP IN DROP INLETS, CATCH BASINS, DITCHES AND OTHER CONVEYANCE CHANNELS:

3. CHECK FOR EXCESSIVE EROSION OF VEGETATED DITCHES:

4. CHECK FOR FREE FLOWING AND NON-CLOGGED CULVERTS, ORIFICES, AND POINTS OF DISCHARGE:

5. CHECK THE CONDITION OF, AND AROUND, THE OUTFALL, INCLUDING FLOW DISSIPATION MEASURES TO PREVENT SCOURING:

ANNUAL REVIEW OF COMPLETED QUARTERLY CHECKLISTS

DATE:
INSPECTOR:

***LIST ANY SPECIFIC PROBLEMS NOTED DURING THE REVIEW AND ACTION TAKEN TO CORRECT BEFORE NEXT INSPECTION:**

---

1. WERE ALL QUARTERLY INSPECTIONS PERFORMED DURING THE REQUIRED MONTH?

2. WHEN APPROPRIATE, WERE ALL CORRECTIVE ACTIONS DOCUMENTED ON FORM?

3. WERE ALL CORRECTION ACTIONS BEING PERFORMED IN A TIMELY MANNER, AND BEING DOCUMENTED ON THE CORRESPONDING CHECKLIST?

4. THROUGH REVIEW OF THE CHECKLISTS, IS THERE APPARENT EVIDENCE THE SWPPP REQUIRES UPDATES OR MODIFICATIONS?

5. IS THE SWPPP BEING PROPERLY UPDATED THROUGHOUT THE YEAR, INCLUDING ANY NEW ACTIVITIES AND PROCEDURES?

6. IS A FORMAL REVISION OF THE SWPPP REQUIRED OR NECESSARY?

7. ARE THERE APPARENT CHRONIC DEFICIENCIES THAT MAY REQUIRE ADDITIONAL BUDGETS DURING THE NEXT FISCAL YEAR?

Department of Public Works Utility Yard Stormwater Pollution Prevention Plan (SWPPP)

DEPARTMENT OF PUBLIC WORKS

201 James Avenue
P.O. Box 3401
Colonial Heights, VA 23834

April 2018
Revised August 2019

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ACRONYMS

BMP	Best Management Practice
DEQ	Virginia Department of Environmental Quality
EPA	U.S. Environmental Protection Agency
MCM	Minimum Control Measure
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollutant Discharge Elimination System
SWM	Stormwater Management
SWPPP	Stormwater Pollution Prevention Plan
UST	Underground Storage Tanks
VSMP	Virginia Stormwater Management Program
VPDES	Virginia Pollutant Discharge Elimination System

1.0 INTRODUCTION

This document is the Stormwater Pollution Prevention Plan (SWPPP) for City of Colonial Heights Public Works Utilities Yard, located at 2701 Conduit Road, Colonial Heights, VA 23834.

This facility falls under the requirements of the City's General Permit for Discharges from Small Municipal Separate Storm Sewer Systems (MS4), General Permit No. VAR040009, with an effective date of July 1, 2013 and an expiration date of June 30, 2018. The permit is designed to reduce the discharge of pollutants from stormwater that leaves the regulated MS4 area within the City and subsequently enters the Commonwealth of Virginia's receiving waters, such as the Appomattox River and its tributaries.

According to the United States Environmental Protection Agency (US EPA), polluted stormwater runoff is a leading cause of impairment to nearly 40 percent of surveyed U.S. water bodies that do not meet water quality standards. Whether travelling by overland flow or through stormwater conveyance systems, polluted stormwater runoff is discharged into local receiving waterways. Such untreated water pollution can result in the destruction of fish, wildlife, and aquatic life habitats; it can also cause a loss of aesthetic value, and can threaten public health due to its potential to contaminate food, drinking water supplies, and recreational waterways.

The MS4 Permit aims at reducing pollutants in stormwater runoff by focusing on six Minimum Control Measures (MCMs), as follows: (1) Public Education and Outreach on Stormwater Impacts, (2) Public Involvement and Participation, (3) Illicit Discharge Detection and Elimination, (4) Construction Site Stormwater Runoff Control, (5) Post- Construction Stormwater Management in New Development and Redevelopment, and (6) Pollution Prevention and Good Housekeeping for Municipal Operations. Within each MCM, there are numerous Best Management Practices (BMPs) being implemented by the City of Colonial Heights.

This SWPPP has been created to satisfy the conditions of MCM 6 which requires the City of Colonial Heights to identify all of its high-priority facilities that have a high potential to discharge pollutants into stormwater and develop, implement, and maintain a SWPPP for each of them.

1.1 Organization of the Stormwater Pollution Prevention Plan

Section 1 of this SWPPP provides information regarding stormwater regulations, the requirements of the 2013 MS4 Permit, review and revision of the SWPPP, and availability of the SWPPP as a public document.

Section 2 describes the Public Works Utility Yard Pollution Prevention Team responsible for compliance with the MS4 Permit. Section 3 briefly describes the site. Section 4 identifies the activities conducted, significant materials stored, potential pollutants, and the measures taken to eliminate or reduce the discharge of pollutants to stormwater drainage systems from the facility. Section 5 contains the definition and categories for both authorized and unauthorized non-stormwater discharges. Section 6 provides a general discussion of Best Management Practices (BMPs) and identifies those BMPs that are

implemented throughout the facility. Spill response is discussed in Section 7. A discussion on employee training is presented in Section 8. Procedures for facility inspections are provided in Section 9.

1.2 Stormwater Regulatory Framework

In 1972 the Federal Water Pollution Control Act (known as the Clean Water Act) was amended to effectively prohibit discharge of pollutants to "waters of the United States" from any point source unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) Permit. The United States Environmental Protection Agency (US EPA) delegated administration of the NPDES Program within Virginia to the Department of Environmental Quality (DEQ), and DEQ administers it as the Virginia Pollutant Discharge Elimination System (VPDES) Permit Program. The 1987 amendments of the Clean Water Act added Section 402(p) to the federal regulations, which established the framework for regulating discharges of pollutants via stormwater from industrial activities and MS4s. Section 402(p) required the US EPA to develop permitting regulations for stormwater discharges from MS4s and from industrial facilities, including construction sites.

In Virginia, discharges from municipal separate storm sewer systems are regulated under several programs: the Virginia Stormwater Management Act, the Virginia Stormwater Management Program (VSMP) Permit regulations, and the Clean Water Act (through the VPDES Permit Program) as point source discharges. MS4 regulations were developed and implemented in two phases. Implementation of the first phase began in the early 1990s and required that operators of MS4s serving populations of greater than 100,000 people (per the 1990 decennial census) apply for and obtain an individual permit to discharge stormwater from their outfalls. The second phase of MS4 regulations became effective March 23, 2003, and required that operators of small MS4s in "urbanized areas" (as defined by the latest decennial census) obtain coverage under a general permit to discharge stormwater from their outfalls. The City of Colonial Heights is classified as a small MS4, and thus operates under the General MS4 Permit.

According to the City's MS4 Permit, the following types of high-priority facilities require SWPPPs:

- Debris/Leaves Disposal Site
- Equipment storage and maintenance facilities
- Materials storage yards
- Public works yards
- Salt storage facilities
- Vehicle storage and maintenance yards

In addition, facilities in which any of the following materials or activities occur and are expected to have exposure to stormwater resulting from rain, snow, snowmelt or runoff also require a SWPPP:

1. Areas where residuals from using, storing or cleaning machinery or equipment remain and are exposed to stormwater;

2. Materials or residuals on the ground or in stormwater inlets from spills or leaks;
3. Material handling equipment (except adequately maintained vehicles);
4. Materials or products that would be expected to be mobilized in stormwater runoff during loading/unloading or transporting activities (e.g. rock, salt, fill dirt);
5. Materials or products stored outdoors (except final products intended for outside use where exposure to stormwater does not result in the discharge of pollutants); or
6. Particulate matter or visible deposits of residuals from roof stacks, vents or both not otherwise regulated (i.e., under an air quality control permit) and evident in the stormwater runoff.

1.3 Review and Revision of the Stormwater Pollution Prevention Plan

The SWPPP will be reviewed at least annually to determine if any revision is necessary to reflect changes in the facility or changes in the activities conducted that:

- May significantly increase the quantities of pollutants in stormwater runoff;
- Cause a new area of the facility to be exposed to stormwater or authorized non-stormwater discharges;
- Start-up of an activity that would introduce a new pollutant source at a facility; or
- If, during inspections or other discovery, it is determined that the existing best management practices (BMPs) are ineffective in minimizing the discharge of pollutants

Some examples of changes that could require a modification to the SWPPP include, but are not limited to:

- The activities occurring at the Facility (i.e. construction of vehicle washing pad, addition of asphalt tank, etc.)
- The location and storage of vehicles, equipment, chemicals, and other material (i.e. construction of new building, change location of equipment storage, etc.)
- The personnel responsible for implementing the SWPPP, specifically the Pollution Prevention Team (i.e. change of coordinator, etc.)
- The modification, addition or removal of control measures (i.e. check dams, berms, etc.)
- The modification or addition to the storm sewer system (i.e. new stormwater pipes/ditches, etc.)

In determining if revision of the SWPPP is necessary, the SWPPP Implementation team, identified in Section 2.0, will review the Annual Comprehensive Site Compliance Evaluation, which is described in Section 5.

1.4 Location of the Stormwater Pollution Prevention Plan (SWPPP)

The SWPPP shall be kept in the office of the Public Works Superintendent, which is located in the administrative office of the Public Works Yard. A copy of the SWPPP will also be maintained by the Project Coordinator.

2.0 POLLUTION PREVENTION TEAM

The Project Coordinator shall have the primary responsibility to keep and maintain the SWPPP document, and to lead the SWPPP Implementation Team. The Public Works Superintendent shall be responsible for coordinating with the Project Coordinator regarding quarterly inspections and annual inspections.

Table 1. Pollution Prevention Team – City of Colonial Heights DPW Utility Yard

POSITION	NAME	CONTACT INFORMATION	PRIMARY RESPONSIBILITIES
Project Coordinator	Keith Chisolm	(804) 520-9334 chisolmk@colonialheightsva.gov	SWPPP OVERSIGHT • Provide the necessary resources to comply with the SWPPP. • Ensure assigned staff implements the SWPPP and all its components. • Provide management support to staff.
Project Coordinator	Keith Chisolm	(804) 520-9334 chisolmk@colonialheightsva.gov	SWPPP IMPLEMENTATION • Implement and administer the SWPPP. • Implement the Emergency Response Plan and Procedures (part of the Hazardous Waste Management Program). • Provide Stormwater Training for facility personnel. • Maintain the necessary records and files.
Public Works Superintendent	Mike West	(804) 520-9372 westm@colonialheightsva.gov	CHEMICAL SPILL RESPONSE • Minimize the threat of chemical spills to personnel and to the surrounding environment; and • Protect storm drain inlets and sanitary sewer drains from any spillage or contamination once personnel safety is assured.
Public Works Superintendent Stormwater Foreman	Mike West A.J. Covington	(804) 520-9372 westm@colonialheightsva.gov (804) 520-9372	CONDUCT ROUTINE FACILITY INSPECTIONS • Implement BMPs for respective area(s) of responsibility. • Conduct routine inspections of respective areas of responsibility to ensure BMPs are in place, operative, and effective at all times in and around the areas where activities that may impact stormwater are conducted. • Submit quarterly inspection reports, using the Inspection Checklist, to the Project Coordinator.
Project Coordinator	Keith Chisolm	(804) 520-9334 chisolmk@colonialheightsva.gov	MS4 PROGRAM MANAGEMENT • Prepare and revise the SWPPP, as necessary. • Conduct periodic facility inspections to assure compliance. • Collect training records. • Prepare and submit Annual MS4 Report. • Serve as a technical resource to other departments.

3.0 SITE DESCRIPTION

The Facility is located at 2701 Conduit Road in Colonial Heights, Virginia. The Facility is utilized as a City Public Works Utility Yard and is generally used for vehicle and equipment storage and equipment maintenance and a recycling center. The specific activities that occur at the Facility are outlined in Section 4.0.

The storm sewer drainage of the Facility generally flows towards the eastern side of the Facility. The stormwater sheet flows across the paved lot and conveyed into earthen culverts. It then exits the Facility at a vegetative buffer located along the eastern section of the Yard which ultimately discharges to Old Town Creek. A site-specific layout and storm sewer drainage map of the Facility is provided in Appendix A. The site map includes the following:

- Aerial view of the location and extent of significant structures and impervious surface (roofs, paved and compacted areas, and other impervious areas).
- The approximate location of buildings as identified in Table 2.
- The approximate location and direction of major stormwater conveyances including, ditches, pipes, swales, and drop inlets.
- The approximate location of regulated outfalls and other points of discharge.
- The approximate location of surface water bodies and downstream MS4s receiving discharge from the Facility, where applicable.
- The approximate location and description of allowable non-stormwater discharges as identified in Section 5.0.
- The approximate location of structural source controls (i.e. silt fence, berms, etc.) as identified in Section 6.0.
- The approximate location and sources of stormwater run-on to the site from adjacent property, where the discharge has the potential to contain pollutants.

The Facility has several buildings which are identified in the table below.

Table 2. Summary of Buildings Located at the Facility

Building	Location	Drains
Vehicle Storage	Noted on the Map	No drains present
Main Pump Station	Noted on the Map	
Recycling Center	Noted on the Map	No drains present

4.0 POTENTIAL POLLUTANTS AND POLLUTANT SOURCES

The Facility is primarily utilized for vehicle and equipment storage and equipment maintenance, vegetative materials storage (i.e. brush), and salt storage. The different activities that occur at this site and the associated potential pollutant and pollutant sources are described in this section and are summarized in Table 3.

Fleet and Equipment Parking/Storage Area

There are several open areas utilized for fleet vehicles and equipment. Vehicles and equipment are susceptible to leaking and those that are stored outdoors, subject to weather, pose a pollutant risk. Rainfall at the facility could wash leaked fluids into the stormwater system.

Equipment Maintenance Shops

The facility performs equipment maintenance for their fleet at their fleet and equipment maintenance shop. The shop stores paints, motor oil, transmission fluid, hydraulic oil, antifreeze, solvents, etc. The maintenance shop has floor drains that are connected to the sanitary sewer system. A spill kit is located inside the shop.

Vehicle Washing

Vehicle washing of regular size vehicles is performed in an indoor wash bay located inside the Maintenance Shop. The wash bay is equipped with a drain that is connected to the sanitary sewer. Outdoor vehicle washing is only allowed at the designated outdoor vehicle washing area that drains to a treatment control BMP (to be installed).

Material Stockpile/Storage Area

The facility has several designated open areas for storing both erodible (soil, sand, finer aggregates) and non-erodible (rock, concrete, aggregates) materials in stockpiles. Erodible materials, subject to weather, has a potential to migrate into the stormwater system. Berms and silt fence around the stockpiles are utilized by the City to contain the erodible materials and prevent migration of sediment from these stockpiles into the stormwater conveyances. The proposed BMP will provide treatment for runoff associated with some material storage areas.

Petroleum and Chemical Storage

The facility stores petroleum and other chemicals (antifreeze, solvents, used oil, batteries, etc.) inside the maintenance shop and in other indoor storage areas. The facility has a designated area for storage of their hazardous waste. Petroleum or chemical containers stored outside are kept closed at all time

and stored under cover/roof. Petroleum and chemical storage containers, subject to weather, is a potential pollutant source in case of a spill or a ruptured container.

Outdoor Waste Storage

The facility has dumpsters for trash that are covered. Uncovered trash, subject to weather, can be a potential pollutant source. Leaks and leachates from trash can be conveyed into the stormwater system. The facility's trash dumpsters are covered to prevent migration of pollutants into the stormwater system.

Table 3. Activity and Associated Potential Pollutants/Sources

Activity	Description	Pollutants/Sources
Fleet and Equipment Parking/Storage Area	Parking and storage of vehicle and equipment is a potential for stormwater pollution. In particular, vehicles and equipment are susceptible to leaking and those that are stored outdoors, subject to weather, pose a pollutant risk.	*Antifreeze, petroleum, etc.* • Container spills or leaks • Vehicle and equipment leaks
Vehicle Washing	Vehicle and equipment washing is a potential source of stormwater pollution at the facility. Vehicle wash water can be laden with pollutants such as petroleum, oils, salt and sediment. These pollutants, if not controlled, can be subsequently conveyed into stormwater systems.	*Fuels/Oils, Salt, Sediment* • Vehicle and equipment wash water laden with pollutants • Vehicle and equipment leaks
Material Stockpile/Storage Area	Erodible materials, subject to weather, has a potential to migrate into the stormwater system.	*Sediment from Sand, Soil, Fine Aggregate, etc.* • Rainfall running onto and off erodible stockpiles • Sediment migration from loading and unloading of erodible stockpiles
Petroleum and Chemical Storage	Petroleum and chemical storage containers, subject to weather, is a potential pollutant source in case of a spill or a ruptured container.	*Antifreeze, petroleum, solvents, etc.* • Spills caused by transferring from one container to another • Container spills or leaks from container rupture • Rainfall running onto and off storage area

Activity	Description	Pollutants/Sources
Outdoor Waste Storage	Uncovered trash, subject to weather, can be a potential pollutant source. Leaks and leachates from trash can be conveyed into the stormwater system.	*Petroleum, chemicals, bacteria, etc.* • Leaks/leachate from dumpster • Rainfall running onto and off storage area

5.0 POTENTIAL NON-STORMWATER DISCHARGES

The following non-stormwater discharges are authorized by the Permit and do not need to be addressed in this SWPPP, if:

1. The non-stormwater discharges, or flows, are covered by a separate individual, or general VPDES permit, for non-stormwater discharges;
2. The individual flows have been identified in writing by the DEQ as *de minimis* discharges that are not significant sources of pollutants to surface waters and do not require a VPDES permit;
3. Discharges which have not been identified by DEQ as significant contributors of pollutants including: water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration, uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, flows from riparian habitats and wetlands, and discharges or flows from firefighting activities; or
4. The discharge of materials resulting from a spill is necessary to prevent loss of life, personal injury, or severe property damage.

The following allowable non-stormwater discharges have been identified:

Table 4. Allowable Non-Stormwater Discharges

Type of Allowable Non-Stormwater Discharge	Location on Map
Ice Maker Drain	East side of fleet maintenance building
Potable Water Spigots	South side of administrative building, East side of fleet maintenance building

6.0 BEST MANAGEMENT PRACTICES

Best Management Practices, or BMPs, are the practices, procedures, policies, prohibitions, schedules of activities, structures, or devices that are implemented to prevent or minimize pollutants from coming into contact with precipitation, stormwater runoff, or non-stormwater flows. BMPs are also structures or devices that remove pollutants from stormwater runoff before the runoff enters a stormwater drainage system or surface water. Therefore, BMPs are often categorized as either "source-control" BMPs or "treatment-control" BMPs.

Source-control BMPs include all types of measures designed to prevent pollution at the source, that is, to keep stormwater from coming into contact with pollutants in the first place. Source-control BMPs are generally simple, low-maintenance, cost-effective, and broadly applicable. They may be categorized as non-structural or structural. Good housekeeping at a municipal yard is an example of a non-structural, source-control BMP.

Treatment-control BMPs are devices or methods used to treat stormwater runoff to remove pollutants; these BMPs are frequently more costly to design, install, and operate than source-control BMPs. More importantly, treatment-control BMPs are typically not as effective as source-control BMPs, and the effectiveness is highly dependent on regular maintenance. Nevertheless, they can be appropriate and useful under certain conditions. However, treatment-control BMPs typically do not remove all pollutants from stormwater runoff and, therefore, should not be regarded as disposal systems.

6.1 Source Control BMPs

The following source-control BMPs will be employed for use at the Public Work Yard at the designated facilities.

Fleet and Equipment Parking/Storage Areas

a) Train employees to look for oil and other fluid leaks and trash in these areas, and to know what procedure to use when these items are noticed.
b) Routinely check condition of vehicles and equipment stored in these areas. Old, leaking vehicles should be removed from these areas.
c) Sweep the area and dispose of debris in the trash can, do not hose down the area.

Fleet and Equipment Maintenance Shops

a) Train employees to look for oil and other fluid leaks in the garage/service bay, and to know what procedure to use when these items are noticed.
b) Train employees to use drip pans, clean them out after use.
c) Clean grate drain on a routine basis.
d) Maintain absorbent spill cleanup materials and spill kits at the service area.
e) Maintain containers for disposal of contaminated cleanup materials.
f) Keep garage/service bay clear of debris.

Vehicle Washing

a) Train employees to perform vehicle washing in the indoor wash bay or at the designated outdoor vehicle washing area. Offsite washing at a commercial lot is allowed.
b) Clean grate drain on a routine basis.
c) Keep wash bay clear of debris.
d) Maintain and cleanout accumulated sediment in the proposed treatment control BMP.

Material Stockpile/Storage Area

a) Properly maintain existing controls such as silt fence and/or berms around stockpiles.
b) Train employees to evaluate the condition of the existing controls such as silt fence and berms to determine the condition and efficacy of the controls and to know what to do

c) Train employees to look for evidence of potential sediment migration from the stockpiles and to know what procedure to use when these items are noticed.

d) Sweep the area and dispose of debris in the trash can. Residual soil or stone can be re-stockpiled. Do not hose down the area.

Petroleum and Chemical Storage

a) Store containers indoors. If storing outside, containers need to be closed at all times and under cover/roof.

b) Train employees to:

   a. Look for chemical stains and fluid leaks under storage containers.

   b. Clean up spilled oil using absorbent – stay dry/quick dry, sweep it up, and dispose of it in the trash.

c) Train employees to use drip pans, clean them out after use, and properly store inside.

d) Label contents of all containers.

e) Routinely check condition of containers.

f) Keep area clear of debris and periodically dispose of unneeded items.

Outdoor Waste Storage

a) Keep the dumpster lids closed at all times.

b) Train employees to:

   a. Look for chemical stains and fluid leaks under dumpster.

   b. Clean up spilled oil using absorbent – stay dry/quick dry, sweep it up, and dispose of it in the trash.

c) Routinely check condition of dumpsters.

d) Keep area clear of debris.

e) Locate the dumpsters at least 100 feet from watercourses/ditches.

6.2 Treatment Control BMPs

Currently, the facility is located on flat terrain with very little concentrated stormwater flow. A significant vegetative buffer exists between the Utility yard and Old Town Creek.

6.3 Good Housekeeping BMPs

Good housekeeping practices include activities that are intended to maintain a clean site and keep equipment in good working order to prevent pollutants from coming into contact with stormwater runoff. Daily cleanup and inspections are the most effective means of achieving good housekeeping. For the most part, good housekeeping practices should be incorporated into the day-to-day activities at the facility, as they foster a habit of good housekeeping, and they also help to assure worker safety.

Employees shall be trained to understand the practices and to implement them on an ongoing basis. The following good housekeeping BMPs will be employed for use at the Public Works Utility Yard:

- Tools and materials are returned to designated storage areas after use;
- All storage containers are properly labeled, to include warning labels if appropriate;
- All spills are immediately cleaned up;
- Spilled oil and grease is absorbed using absorbent material, which is then swept up and disposed of in the trash;
- Waste materials are collected and properly discarded;
- Indoor work areas are kept neat, uncluttered, and well-ventilated to discourage outdoor work that has the potential to generate pollutants and to allow leaks and spills to be quickly detected and controlled;
- Outdoor work areas are swept regularly (not hosed) and kept neat and clean;
- When outdoor work areas need cleaning beyond sweeping, all wash waters are contained, collected, and properly managed;
- Outdoor waste or trash receptacles are kept covered and regularly emptied; adjacent areas are inspected for misplaced or wind-blown litter; and
- Employees are regularly trained on proper good housekeeping practices.

6.4 Preventive Maintenance BMPs

Preventive maintenance BMPs relate to maintaining equipment in good working order. Having equipment failures or using equipment that poorly functions may result in the discharge of pollutants to the storm drainage system. Therefore, to reduce the likelihood of breakdown or failure, major equipment should have a preventive maintenance schedule for inspection, repair, or replacement of fluids (e.g., hydraulic, lubricating, cooling), greases, seals, hoses, filters, pressure gauges, piping, etc.

Paved and landscaped areas should not be allowed to degrade to the point where they erode and contribute pollutants to stormwater runoff. Leaky roofs, broken doors, cracked pavement and berms, and any other enclosure or structural defects that may impact the quality of stormwater runoff should be promptly repaired. Structural BMPs and storm drains within facility boundaries also need to be regularly inspected and maintained.

6.5 Proper Materials Handling and Storage BMPs

Materials handling and storage BMPs relate to controlling the potential for leaks, spills, and losses of materials delivered, used, and stored at a facility. Spills and leaks of materials can accumulate in soils or on surfaces and be carried away in stormwater runoff or in authorized non-stormwater discharges. These materials handling and storage BMPs will be employed:

6.5.1 Material Use

- Only obtain the amount of materials needed to finish a particular job;
- Limit waste generation by keeping good records and reviewing activities;
- Recycle materials whenever possible; and
- Read and follow manufacturer directions for use of materials and review the associated Material Safety Data Sheet (MSDS) for each product.

6.5.2 Materials Storage

- Store materials indoors or in a covered area (where possible) where exposure to rainwater is eliminated;
- Store lead-acid batteries indoors;
- Use hazardous materials storage lockers with spill containment or flammable materials lockers when appropriate;
- Locate storage areas away from vehicle and equipment paths to reduce the potential for accident-related leaks or spills;
- Store drums or other containers away from storm drain inlets;
- Provide informational signing, labels, restricted access, locks, inventory control, overhead coverage, and secondary containment for all hazardous material storage areas or container units; and
- Conduct regular inspections for leaks and control dates.

6.5.3 Proper Waste Handling BMPs

Waste handling BMPs relate to properly controlling, collecting, storing, and disposing of wastes that are generated at a facility. All facility personnel should be aware that the disposal of any waste (including wash water) into a storm drain inlet or stormwater conveyance (i.e., ditches or streets) is an illicit or

unpermitted discharge. Likewise, disposing of waste (including wash water) onto a paved surface such that it may be carried to a storm drain inlet or stormwater conveyance (i.e., ditches, streets) is an illegal discharge.

The following waste handling BMPs will be employed for use at the Public Works Utility Yard Facilities:

- Sweep or vacuum (dry methods) work areas to collect metal, wood, and other particulates and debris frequently;
- Limit waste generation by keeping good records and reviewing activities;
- Recycle materials whenever possible;
- Separate and segregate different types of wastes;
- Store waste materials indoors or in a covered area where exposure to rainwater is eliminated;
- Continue using service provider for regularly-scheduled waste disposal;
- Use hazardous materials storage lockers with spill containment or flammable materials lockers when appropriate;
- Locate the waste storage area away from vehicle and equipment paths to reduce the potential for accident-related releases;
- Provide informational signage, labels, restricted access, inventory controls, overhead coverage, and secondary containment for all hazardous waste storage areas or container units;
- Conduct regular inspections for leaks and control dates.

7.0 SPILL PREVENTION AND RESPONSE

For spills, the old saying that "an ounce of prevention is worth a pound of cure" is appropriate. Spill clean-up can be labor-intensive and costly, as it involves containing the spill, collecting the spilled substance, properly disposing of the spilled materials, and filing of associated reports to regulatory agencies, not to mention possible monetary fines. Spills and leaks are some of the most significant sources of stormwater pollution and are, in most cases, avoidable.

Spill prevention and control procedures may include:

- Placing bollards, berms and/or containment features around structures or areas where fluids are stored, so releases can be prevented, easily detected, and controlled;
- Using drip pans for maintenance operations involving fluids and under leaking vehicles and equipment awaiting repair;
- Placing spill kits in areas where fluids are stored or in areas where activities may result in a spill;
- Providing training for proper use of materials and equipment used during operations and maintenance activities;
- Providing training for proper use of spill response equipment and supplies; and
- Conducting outdoor maintenance activities on paved surfaces to allow for easy detection, control, and cleanup of spills.

Spill prevention, control, and cleanup apply to all materials and wastes - not only hazardous substances. The toxic water quality effects from spills of hazardous substances (e.g., acids, oils, greases, fuels, solvents, pesticides) are commonly understood. However, non-hazardous materials, such as sand, litter, and wash water, among others - can also greatly impact water quality in receiving waters.

The facility will retain a spill history log of their spills (both reportable and non-reportable) using the summary log included in Appendix B. Additionally, if a reportable spill occurs at the Facility, the spill will be reported using the procedures and form provided in Appendix C.

7.1 Non-Reportable Spills

- Oil spills less than 25 gallons that do not reach a navigable waterway. These spills must be cleaned up and documented.
- Chemical spills not exceeding a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Reportable Quantities (RQ) or are wholly contained inside a building.

7.2 Reportable Spills

- Oil spills greater than 25 gallons must be reported to the Virginia DEQ within 24 hours
- Oil spills of any quantity that immediately threaten or affect (e.g. cause a sheen) a waterway must be immediately reported to the National Response Center (NRC) (1-800-424-8802) and the DEQ.
- Chemical spills that equal, or exceed, the RQ, or are an identified marine pollutant must be immediately reported to the NRC and the DEQ.
- Chemical spills below their RQ, or without an RQ that reach water must be reported to the DEQ.

Spills will be reported to the appropriate regulatory agency and staff as identified on Table 1 for individual responsibilities for pollution prevention.

8.0 EMPLOYEE TRAINING

Personnel identified in the Pollution Prevention Team for SWPPP Oversight (in Section 2.0) is responsible to ensure that all of their designated employees receive the appropriate Stormwater Management training on a biennial basis.

The project Coordinator will coordinate training related to stormwater management on at least a biennial basis and maintains all training records for inclusion in the City's Annual MS4 Report, as submitted to DEQ.

The purpose of stormwater-related training is to educate workers on the day-to-day activities that may impart pollutants into stormwater discharges from the site, to help in the implementation of BMPs, to ensure understanding of the City's procedures and policies for Water Quality, and to ensure employees understand what illicit discharges are and how to respond to them when they are witnessed.

Training attendance sheets and any other training documentation shall be kept in Appendix D. The instructor's name, if applicable, date and time of training, location of training, training title, participants' names, and corresponding employee numbers will be listed.

All training records shall be kept for a period of no less than three years.

9.0 FACILITY INSPECTIONS

9.1 Quarterly Inspections

At least once per quarter, the facility will be inspected using the City's Public Works Utility Yard Inspection Checklist, found in Appendix E. The inspection shall be conducted by the Pollution Prevention SWPPP Implementation Team, identified in Section 2.0.

The purpose of these inspections will be to identify problems early so that they can be corrected in a timely fashion. All completed forms shall be placed in Appendix E Public Works Superintendent or his/her designee; he or she shall also send a copy of such reports to the Project Coordinator for inclusion in the Annual MS4 Report, which is submitted to the Virginia Department of Environmental Quality (DEQ) by October 1 of each year.

9.2 Annual Comprehensive Site Compliance Evaluation

An annual Comprehensive Site Compliance Evaluation (CSCE) of the Public Works Utility Yard will be conducted by the Pollution Prevention SWPPP Implementation Team, identified in Section 2.0, to help assure that significant changes in facilities or activities are identified and can then be reflected in the SWPPP. The annual CSCE will include:

- Visual inspection of all potential sources of pollutants that may enter the stormwater drainage system via stormwater or non-stormwater discharges;
- A review and assessment of all BMPs to determine whether the BMPs are adequate, properly implemented and maintained, or whether additional BMPs are needed; and
- Visual inspection of equipment needed to implement the SWPPP, such as spill response equipment, drip pans, brooms or vacuum sweepers, or containers for used absorbents.

The Annual CSCE will be documented by the Project Coordinator as follows:

- Identification of personnel performing the evaluation
- The date(s) of the evaluation
- Findings of the evaluation
- Recommended modifications of the SWPPP
- Schedule for implementing SWPPP revisions
- Any incidents of non-compliance and the corrective actions taken

Following the evaluation, revisions to the SWPPP, if needed, will be completed within 90 days. Blank evaluation forms are located in Appendix F, and completed evaluation forms shall be placed there by the Project Coordinator.

Table 5 may be used to track annual assessments and follow-through on recommendations. The Pollution Prevention SWPPP Implementation Team are available for technical assistance during the evaluation process, if needed.

Table 5. Assessment Log

Assessment Date (mm/dd/yyyy)	**Assessor** (Name &	**Revisions Required?** (Y/N)		**Follow Through?** (Date or n/a)
		Yes	No	
		Yes	No	
		Yes	No	
		Yes	No	
		Yes	No	
		Yes	No	

APPENDIX A. FACILITY SITE MAP

APPENDIX B. LIST OF SIGNIFICANT SPILLS AND LEAKS

LIST OF SIGNIFICANT SPILLS AND LEAKS

Facility Name		MS4 Permit #:	VAR040009

Date	Spill or Leak	Person Initials	Location	Description			Response Procedure		
				Type of Material	Quantity	Source Reason	Amount Recovered	Isolated?	Measures

APPENDIX C. DETAILED INFORMATION FOR REPORTABLE RELEASES

DETAILED INFORMATION FOR REPORTABLE RELEASES

Complete this form for each significant spill incident. Keep original form with the Plan.

INCIDENT DATE: _____ INCIDENT TIME: _____
REPORT DATE: _____ DISCOVERY TIME: _____
FACILITY NAME: _____
ADDRESS & LOCATION: _____
PERSON REPORTING: _____ PHONE: _____
MANAGER IN CHARGE: _____ PHONE: _____

SPILLED PRODUCT INFORMATION:

Spill Location: _____
Product: _____
Storage Capacity of Product Container: _____
Spill Volume: _____
Size of Area Affected by Release: _____
Duration of Release: _____

	YES	NO	
Spill from or suspected from a leaking AST, UST, or piping?	☐	☐	
Spill contained on premises?	☐	☐	
Did the spill enter the stormwater drainage system?		☐	☐
Did the spill enter a body of water?	☐	☐	

Nearest body of water or body of water spill entered? _____ Distance: _____

DESCRIPTION: (check all applicable)

☐ leaking drums/containers ☐ overfill, vehicle unattended ☐ equipment failure
☐ leaking tank/lube truck ☐ drive off, hose in vehicle ☐ other human error
☐ overfill, during fuel drop ☐ other (than storage device or equipment failure, or human error)

Hazards associated with the spill: _____
Amount of spill control supplies used/ to be restocked: _____
Type and amount of material to be disposed: _____
Measures taken to prevent recurring incidents: _____
Personal Injuries: _____
Additional pertinent information: _____

AGENCIES NOTIFIED OF INCIDENT:

Agency Name and Contact: _____Date/Time: _____
Agency Name and Contact: _____Date/Time: _____
Agency Name and Contact: _____Date/Time: _____

IT IS NOT NECESSARY TO WAIT FOR ALL INFORMATION BEFORE CALLING THE NATIONAL RESPONSE CENTER.

APPENDIX D. TRAINING RECORDS

APPENDIX E. QUARTERLY CHECKLIST FOR FACILITY ASSESSMENT

SWPPP QUARTERLY INSPECTION CHECKLIST

Facility: _____ Inspector: _____ Date: _____

Current Weather Conditions: _____ Date of Last Rain: _____

Were there corrective action requirements from previous inspection? _____

If yes, were all corrective actions performed and documented on inspection checklist? _____

Activity/Materials	Yes	Required Action	Date Corrected
OUTDOOR MATERIAL STOCKPILE	□		
Are controls in place for erodible piles?	□		
Are the controls for erodible piles adequate and in good condition?	□		
Are there any observed sediment migration from erodible piles?	□		
VEHICLE & EQUIPMENT MAINTENANCE	□		
Are maintenance activities performed indoors where practical?	□		
Are vehicles and equipment stored properly?	□		
Are there any vehicles or equipment leaking?	□		
Is an oil/water separator present and is it properly maintained?	□		
VEHICLE WASHING	□		
Is vehicle washing performed indoors?	□		
Is vehicle washing performed outdoors?	□		
Is there evidence that washing has taken places in other areas (e.g. hoses or wash buckets)?			
WASTE MANAGEMENT	□		
Are dumpster lids kept closed?	□		
Is loose garbage and waste material picked up and disposed regularly?	□		
PETROLEUM AND FUELING	□		
Are oil containers managed properly or away from inlets to the stormwater drainage system?	□		

Activity/Materials	Yes	Required Action	Date Corrected
Are spill kits properly stocked and readily available at the Facility?	□		
Are fuel leaks and spills controlled using absorbents/ drip pans/ pads?	□		
Are fueling areas covered or otherwise protected from precipitation and run-on?	□		
Are dry cleanup materials swept up, containerized, and disposed properly?	□		
OTHERS	□		
Are all other containers intact and appropriately labeled?	□		
Are empty containers/drums labeled as such?			
Are drop inlet controls in place and are they in good working condition?	□		
Are check dams or other E&S controls present and are they intact and properly maintained?	□		
Is there any observed erosion on the lot?	□		
Is there any significant sediment observed in drop inlets and other stormwater drainage ways?	□		
Is there and significant sediment build up observed in outfalls?	□		
Is there any observed pollutant run-on from adjacent property, not previously identified?	□		

APPENDIX F. ANNUAL COMPREHENSIVE SITE COMPLIANCE EVALUATION FORMS

ANNUAL STORM SEWER INSPECTION CHECKLIST

DATE:
WEATHER CONDITIONS:
LAST DATE OF RAIN:
APPROXIMATE AMOUNT:
INSPECTOR:

***LIST ANY SPECIFIC PROBLEMS NOTED DURING THE INSPECTION AND ACTION TAKEN TO CORRECT BEFORE NEXT INSPECTION:**

---

1. CHECK FOR EXCESSIVE EROSION OF EARTHENED AND GRAVEL COMPACTED LOTS:

2. CHECK SEDIMENT AND DEBRIS BUILD-UP IN DROP INLETS, CATCH BASINS, DITCHES AND OTHER CONVEYANCE CHANNELS:

3. CHECK FOR EXCESSIVE EROSION OF VEGETATED DITCHES:

4. CHECK FOR FREE FLOWING AND NON-CLOGGED CULVERTS, ORIFICES, AND POINTS OF DISCHARGE:

5. CHECK THE CONDITION OF, AND AROUND, THE OUTFALL, INCLUDING FLOW DISSIPATION MEASURES TO PREVENT SCOURING:

ANNUAL REVIEW OF COMPLETED QUARTERLY CHECKLISTS

DATE:
INSPECTOR:

***LIST ANY SPECIFIC PROBLEMS NOTED DURING THE REVIEW AND ACTION TAKEN TO CORRECT BEFORE NEXT INSPECTION:**

---

1. WERE ALL QUARTERLY INSPECTIONS PERFORMED DURING THE REQUIRED MONTH?

2. WHEN APPROPRIATE, WERE ALL CORRECTIVE ACTIONS DOCUMENTED ON FORM?

3. WERE ALL CORRECTION ACTIONS BEING PERFORMED IN A TIMELY MANNER, AND BEING DOCUMENTED ON THE CORRESPONDING CHECKLIST?

4. THROUGH REVIEW OF THE CHECKLISTS, IS THERE APPARENT EVIDENCE THE SWPPP REQUIRES UPDATES OR MODIFICATIONS?

5. IS THE SWPPP BEING PROPERLY UPDATED THROUGHOUT THE YEAR, INCLUDING ANY NEW ACTIVITIES AND PROCEDURES?

6. IS A FORMAL REVISION OF THE SWPPP REQUIRED OR NECESSARY?

7. ARE THERE APPARENT CHRONIC DEFICIENCIES THAT MAY REQUIRE ADDITIONAL BUDGETS DURING THE NEXT FISCAL YEAR?

Colonial Heights School Facilities Maintenance Area Stormwater Pollution Prevention Plan (SWPPP)

Colonial Heights Public Schools

512 Boulevard

Colonial Heights, VA 23834

April 2017

Last Revised August 2019

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ACRONYMS

BMP	Best Management Practice
DEQ	Virginia Department of Environmental Quality
EPA	U.S. Environmental Protection Agency
MCM	Minimum Control Measure
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollutant Discharge Elimination System
SWM	Stormwater Management
SWPPP	Stormwater Pollution Prevention Plan
UST	Underground Storage Tanks
VSMP	Virginia Stormwater Management Program
VPDES	Virginia Pollutant Discharge Elimination System

1.0 INTRODUCTION

This document is the Stormwater Pollution Prevention Plan (SWPPP) for City of Colonial Heights School Maintenance Yard, located at 2600 Woodlawn Ave Colonial Heights, VA 23834.

This facility falls under the requirements of the City's General Permit for Discharges from Small Municipal Separate Storm Sewer Systems (MS4), General Permit No. VAR040009, with an effective date of July 1, 2018 and an expiration date of June 30, 2023. The permit is designed to reduce the discharge of pollutants from stormwater that leaves the regulated MS4 area within the City and subsequently enters the Commonwealth of Virginia's receiving waters, such as the Appomattox River and its tributaries.

According to the United States Environmental Protection Agency (US EPA), polluted stormwater runoff is a leading cause of impairment to nearly 40 percent of surveyed U.S. water bodies that do not meet water quality standards. Whether travelling by overland flow or through stormwater conveyance systems, polluted stormwater runoff is discharged into local receiving waterways. Such untreated water pollution can result in the destruction of fish, wildlife, and aquatic life habitats; it can also cause a loss of aesthetic value, and can threaten public health due to its potential to contaminate food, drinking water supplies, and recreational waterways.

The MS4 Permit aims at reducing pollutants in stormwater runoff by focusing on six Minimum Control Measures (MCMs), as follows: (1) Public Education and Outreach on Stormwater Impacts, (2) Public Involvement and Participation, (3) Illicit Discharge Detection and Elimination, (4) Construction Site Stormwater Runoff Control, (5) Post- Construction Stormwater Management in New Development and Redevelopment, and (6) Pollution Prevention and Good Housekeeping for Municipal Operations. Within each MCM, there are numerous Best Management Practices (BMPs) being implemented by the City of Colonial Heights.

This SWPPP has been created to satisfy the conditions of MCM 6 which requires the City of Colonial Heights to identify all of its high-priority facilities that have a high potential to discharge pollutants into stormwater and develop, implement, and maintain a SWPPP for each of them.

1.1 Organization of the Stormwater Pollution Prevention Plan

Section 1 of this SWPPP provides information regarding stormwater regulations, the requirements of the 2013 MS4 Permit, review and revision of the SWPPP, and availability of the SWPPP as a public document.

Section 2 describes the School Maintenance Facilities Area Pollution Prevention Team responsible for compliance with the MS4 Permit. Section 3 briefly describes the site. Section 4 identifies the activities conducted, significant materials stored, potential pollutants, and the measures taken to eliminate or reduce the discharge of pollutants to stormwater drainage systems from the facility. Section 5 contains the definition and categories for both authorized and unauthorized non-stormwater discharges. Section 6 provides a general discussion of Best Management Practices (BMPs) and identifies those BMPs that

are implemented throughout the facility. Spill response is discussed in Section 7. A discussion on employee training is presented in Section 8. Procedures for facility inspections are provided in Section 9.

1.2 Stormwater Regulatory Framework

In 1972 the Federal Water Pollution Control Act (known as the Clean Water Act) was amended to effectively prohibit discharge of pollutants to "waters of the United States" from any point source unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) Permit. The United States Environmental Protection Agency (US EPA) delegated administration of the NPDES Program within Virginia to the Department of Environmental Quality (DEQ), and DEQ administers it as the Virginia Pollutant Discharge Elimination System (VPDES) Permit Program. The 1987 amendments of the Clean Water Act added Section 402(p) to the federal regulations, which established the framework for regulating discharges of pollutants via stormwater from industrial activities and MS4s. Section 402(p) required the US EPA to develop permitting regulations for stormwater discharges from MS4s and from industrial facilities, including construction sites.

In Virginia, discharges from municipal separate storm sewer systems are regulated under several programs: the Virginia Stormwater Management Act, the Virginia Stormwater Management Program (VSMP) Permit regulations, and the Clean Water Act (through the VPDES Permit Program) as point source discharges. MS4 regulations were developed and implemented in two phases. Implementation of the first phase began in the early 1990s and required that operators of MS4s serving populations of greater than 100,000 people (per the 1990 decennial census) apply for and obtain an individual permit to discharge stormwater from their outfalls. The second phase of MS4 regulations became effective March 23, 2003, and required that operators of small MS4s in "urbanized areas" (as defined by the latest decennial census) obtain coverage under a general permit to discharge stormwater from their outfalls. The City of Colonial Heights is classified as a small MS4, and thus operates under the General MS4 Permit.

According to the City's MS4 Permit, the following types of high-priority facilities require SWPPPs:

- Debris/Leaves Disposal Site
- Equipment storage and maintenance facilities
- Materials storage yards
- Public works yards
- Salt storage facilities
- Vehicle storage and maintenance yards

In addition, facilities in which any of the following materials or activities occur and are expected to have exposure to stormwater resulting from rain, snow, snowmelt or runoff also require a SWPPP:

1. Areas where residuals from using, storing or cleaning machinery or equipment remain and are exposed to stormwater;

2. Materials or residuals on the ground or in stormwater inlets from spills or leaks;
3. Material handling equipment (except adequately maintained vehicles);
4. Materials or products that would be expected to be mobilized in stormwater runoff during loading/unloading or transporting activities (e.g. rock, salt, fill dirt);
5. Materials or products stored outdoors (except final products intended for outside use where exposure to stormwater does not result in the discharge of pollutants); or
6. Particulate matter or visible deposits of residuals from roof stacks, vents or both not otherwise regulated (i.e., under an air quality control permit) and evident in the stormwater runoff.

1.3 Review and Revision of the Stormwater Pollution Prevention Plan

The SWPPP will be reviewed at least annually to determine if any revision is necessary to reflect changes in the facility or changes in the activities conducted that:

- May significantly increase the quantities of pollutants in stormwater runoff;
- Cause a new area of the facility to be exposed to stormwater or authorized non-stormwater discharges;
- Start-up of an activity that would introduce a new pollutant source at a facility; or
- If, during inspections or other discovery, it is determined that the existing best management practices (BMPs) are ineffective in minimizing the discharge of pollutants

Some examples of changes that could require a modification to the SWPPP include, but are not limited to:

- The activities occurring at the Facility (i.e. construction of vehicle washing pad, addition of asphalt tank, etc.)
- The location and storage of vehicles, equipment, chemicals, and other material (i.e. construction of new building, change location of equipment storage, etc.)
- The personnel responsible for implementing the SWPPP, specifically the Pollution Prevention Team (i.e. change of coordinator, etc.)
- The modification, addition or removal of control measures (i.e. check dams, berms, etc.)
- The modification or addition to the storm sewer system (i.e. new stormwater pipes/ditches, etc.)

In determining if revision of the SWPPP is necessary, the SWPPP Implementation team, identified in Section 2.0, will review the Annual Comprehensive Site Compliance Evaluation, which is described in Section 5.

1.4 Location of the Stormwater Pollution Prevention Plan (SWPPP)

The SWPPP shall be kept in the office of the Director of Maintenance, which is located in the administrative office of the School Facilities Maintenance Building. A copy of the SWPPP will also be maintained by the Project Coordinator.

2.0 POLLUTION PREVENTION TEAM

The Project Coordinator shall have the primary responsibility to keep and maintain the SWPPP document, and to lead the SWPPP Implementation Team. The Director of Maintenance shall be responsible for coordinating with the Project Coordinator regarding quarterly inspections and annual inspections.

Table 1. Pollution Prevention Team – City of Colonial Heights School Facilities Maintenance

POSITION	NAME	CONTACT INFORMATION	PRIMARY RESPONSIBILITIES
Project Coordinator	Keith Chisolm	(804) 520-9334 chisolmk@colonialheightsva.gov	SWPPP OVERSIGHT • Provide the necessary resources to comply with the SWPPP. • Ensure assigned staff implements the SWPPP and all its components. • Provide management support to staff.
Project Coordinator	Keith Chisolm	(804) 520-9334 chisolmk@colonialheightsva.gov	SWPPP IMPLEMENTATION • Implement and administer the SWPPP. • Implement the Emergency Response Plan and Procedures (part of the Hazardous Waste Management Program). • Provide Stormwater Training for facility personnel. • Maintain the necessary records and files.
Director of Maintenance	Kenny Harrell	(804) 524-3448 kenny_harrell@colonialhts.net	CHEMICAL SPILL RESPONSE • Minimize the threat of chemical spills to personnel and to the surrounding environment; and • Protect storm drain inlets and sanitary sewer drains from any spillage or contamination once personnel safety is assured.
Director of Maintenance	Kenny Harrell	(804) 524-3448 kenny_harrell@colonialhts.net	CONDUCT ROUTINE FACILITY INSPECTIONS • Implement BMPs for respective area(s) of responsibility. • Conduct routine inspections of respective areas of responsibility to ensure BMPs are in place, operative, and effective at all times in and around the areas where activities that may impact stormwater are conducted. • Submit quarterly inspection reports, using the Inspection Checklist, to the Project Coordinator.
Project Coordinator	Keith Chisolm	(804) 520-9334 chisolmk@colonialheightsva.gov	MS4 PROGRAM MANAGEMENT • Prepare and revise the SWPPP, as necessary. • Conduct periodic facility inspections to assure compliance. • Collect training records. • Prepare and submit Annual MS4 Report. • Serve as a technical resource to other departments.

3.0 SITE DESCRIPTION

The Facility is located at 2600 Woodlawn Avenue in Colonial Heights, Virginia. The Facility is used for vehicle and equipment storage and equipment maintenance, soil/mulch stockpiling, and vehicle washing. The specific activities that occur at the Facility are outlined in Section 4.0.

The storm drainage of the Facility generally flows towards two stormwater basins located adjacent to the parking lot. It then exits the stormwater basins into a drainage channel that ultimately discharges into Old Town Creek. A site-specific layout and storm sewer drainage map of the Facility is provided in Appendix A. The site map includes the following:

- Aerial view of the location and extent of significant structures and impervious surface (roofs, paved and compacted areas, and other impervious areas).
- The approximate location of buildings as identified in Table 2.
- The approximate location and direction of major stormwater conveyances including, ditches, pipes, swales, and drop inlets.
- The approximate location of regulated outfalls and other points of discharge.
- The approximate location of surface water bodies and downstream MS4s receiving discharge from the Facility, where applicable.
- The approximate location and description of allowable non-stormwater discharges as identified in Section 5.0.
- The approximate location of structural source controls (i.e. silt fence, berms, etc.) as identified in Section 6.0.
- The approximate location and sources of stormwater run-on to the site from adjacent property, where the discharge has the potential to contain pollutants.

The Facility has several buildings which are identified in the table below.

Table 2. Summary of Buildings Located at the Facility

Building	Location	Drains
Soil Storage	Noted on the Map	No drains present
Vehicle Storage	Noted on the Map	No drains present
Administration Office/Equipment Storage	Noted on the Map	Drain present – connected to sanitary sewer

4.0 POTENTIAL POLLUTANTS AND POLLUTANT SOURCES

The Facility is primarily utilized for vehicle and equipment maintenance and storage, erodible materials storage (i.e. soil). The different activities that occur at this site and the associated potential pollutant and pollutant sources are described in this section and are summarized in Table 3.

Fleet and Equipment Parking/Storage Area

There are several open areas utilized for parking fleet vehicles and equipment. Vehicles and equipment are susceptible to leaking and those that are stored outdoors, subject to weather, pose a pollutant risk. Rainfall at the facility could wash leaked fluids into the stormwater system.

Fleet and Equipment Maintenance Shops

The facility performs equipment maintenance at their equipment maintenance shop. The shop stores paints, motor oil, transmission fluid, hydraulic oil, antifreeze, solvents, etc. The maintenance shop has floor drains that are connected to the sanitary sewer system. A spill kit is located inside the shop.

Vehicle Washing

Vehicle washing of regular size vehicles is performed in an indoor wash bay located inside the Maintenance Shop and outside at a designated location. The wash bay is equipped with a drain that is connected to the sanitary sewer. Outdoor vehicle washing is only allowed at the designated outdoor vehicle washing area that drains to a treatment control BMP.

Material Stockpile/Storage Area

The facility has several designated open areas for storing both erodible (soil, sand, finer aggregates) and non-erodible (rock, concrete, aggregates) materials in stockpiles. Erodible materials, subject to weather, has a potential to migrate into the stormwater system. Berms and silt fence around the stockpiles are utilized by the City to contain the erodible materials and prevent migration of sediment from these stockpiles into the stormwater conveyances. The proposed BMP will provide treatment for runoff associated with some material storage areas.

Petroleum and Chemical Storage

The facility stores petroleum and other chemicals (antifreeze, solvents, used oil, batteries, etc.) inside the maintenance shop and in other indoor storage areas. The facility has a designated area for storage of their hazardous waste. Petroleum or chemical containers stored outside are kept closed at all time and stored under cover/roof. Petroleum and chemical storage containers, subject to weather, is a potential pollutant source in case of a spill or a ruptured container.

Table 3. Activity and Associated Potential Pollutants/Sources

Activity	Description	Pollutants/Sources
Fleet and Equipment Parking/Storage Area	Parking and storage of vehicle and equipment is a potential for stormwater pollution. In particular, vehicles and equipment are susceptible to leaking and those that are stored outdoors, subject to weather, pose a pollutant risk.	*Antifreeze, petroleum, etc.* • Container spills or leaks • Vehicle and equipment leaks
Vehicle Washing	Vehicle and equipment washing is a potential source of stormwater pollution at the facility. Vehicle wash water can be laden with pollutants such as petroleum, oils, salt and sediment. These pollutants, if not controlled, can be subsequently conveyed into stormwater systems.	*Fuels/Oils, Salt, Sediment* • Vehicle and equipment wash water laden with pollutants • Vehicle and equipment leaks
Material Stockpile/Storage Area	Erodible materials, subject to weather, has a potential to migrate into the stormwater system.	*Sediment from Sand, Soil, Fine Aggregate, etc.* • Rainfall running onto and off erodible stockpiles • Sediment migration from loading and unloading of erodible stockpiles
Petroleum and Chemical Storage	Petroleum and chemical storage containers, subject to weather, is a potential pollutant source in case of a spill or a ruptured container.	*Antifreeze, petroleum, solvents, etc.* • Spills caused by transferring from one container to another • Container spills or leaks from container rupture • Rainfall running onto and off storage area

5.0 POTENTIAL NON-STORMWATER DISCHARGES

The following non-stormwater discharges are authorized by the Permit and do not need to be addressed in this SWPPP, if:

1. The non-stormwater discharges, or flows, are covered by a separate individual, or general VPDES permit, for non-stormwater discharges;
2. The individual flows have been identified in writing by the DEQ as *de minimis* discharges that are not significant sources of pollutants to surface waters and do not require a VPDES permit;
3. Discharges which have not been identified by DEQ as significant contributors of pollutants including: water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration, uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, flows from riparian habitats and wetlands, and discharges or flows from firefighting activities; or
4. The discharge of materials resulting from a spill is necessary to prevent loss of life, personal injury, or severe property damage.

The following allowable non-stormwater discharges have been identified:

Table 4. Allowable Non-Stormwater Discharges

Type of Allowable Non-Stormwater Discharge	Location on Map
Ice Maker Drain	East side of fleet maintenance building
Potable Water Spigots	South side of administrative building, East side of fleet maintenance building

6.0 BEST MANAGEMENT PRACTICES

Best Management Practices, or BMPs, are the practices, procedures, policies, prohibitions, schedules of activities, structures, or devices that are implemented to prevent or minimize pollutants from coming into contact with precipitation, stormwater runoff, or non-stormwater flows. BMPs are also structures or devices that remove pollutants from stormwater runoff before the runoff enters a stormwater drainage system or surface water. Therefore, BMPs are often categorized as either "source-control" BMPs or "treatment-control" BMPs.

Source-control BMPs include all types of measures designed to prevent pollution at the source, that is, to keep stormwater from coming into contact with pollutants in the first place. Source-control BMPs are generally simple, low-maintenance, cost-effective, and broadly applicable. They may be categorized as non-structural or structural. Good housekeeping at a municipal yard is an example of a non-structural, source-control BMP.

Treatment-control BMPs are devices or methods used to treat stormwater runoff to remove pollutants; these BMPs are frequently more costly to design, install, and operate than source-control BMPs. More importantly, treatment-control BMPs are typically not as effective as source-control BMPs, and the effectiveness is highly dependent on regular maintenance. Nevertheless, they can be appropriate and useful under certain conditions. However, treatment-control BMPs typically do not remove all pollutants from stormwater runoff and, therefore, should not be regarded as disposal systems.

6.1 Source Control BMPs

The following source-control BMPs will be employed for use at the School Maintenance Facilities Area at the designated facilities.

Fleet and Equipment Parking/Storage Areas

a) Train employees to look for oil and other fluid leaks and trash in these areas, and to know what procedure to use when these items are noticed.
b) Routinely check condition of vehicles and equipment stored in these areas. Old, leaking vehicles should be removed from these areas.
c) Sweep the area and dispose of debris in the trash can, do not hose down the area.

Fleet and Equipment Maintenance Shops

a) Train employees to look for oil and other fluid leaks in the garage/service bay, and to know what procedure to use when these items are noticed.
b) Train employees to use drip pans, clean them out after use.

c) Clean grate drain on a routine basis.
d) Maintain absorbent spill cleanup materials and spill kits at the service area.
e) Maintain containers for disposal of contaminated cleanup materials.
f) Keep garage/service bay clear of debris.

Vehicle Washing

a) Train employees to perform vehicle washing in the indoor wash bay or at the designated outdoor vehicle washing area. Offsite washing at a commercial lot is allowed.
b) Clean grate drain on a routine basis.
c) Keep wash bay clear of debris.
d) Maintain and cleanout accumulated sediment in the proposed treatment control BMP.

Material Stockpile/Storage Area

a) Properly maintain existing controls such as silt fence and/or berms around stockpiles.
b) Train employees to evaluate the condition of the existing controls such as silt fence and berms to determine the condition and efficacy of the controls and to know what to do
c) Train employees to look for evidence of potential sediment migration from the stockpiles and to know what procedure to use when these items are noticed.
d) Sweep the area and dispose of debris in the trash can. Residual soil or stone can be re-stockpiled. Do not hose down the area.

Petroleum and Chemical Storage

a) Store containers indoors. If storing outside, containers need to be closed at all times and under cover/roof.
b) Train employees to:
    a. Look for chemical stains and fluid leaks under storage containers.
    b. Clean up spilled oil using absorbent – stay dry/quick dry, sweep it up, and dispose of it in the trash.
c) Train employees to use drip pans, clean them out after use, and properly store inside.
d) Label contents of all containers.
e) Routinely check condition of containers.
f) Keep area clear of debris and periodically dispose of unneeded items.

6.2 Treatment Control BMPs

Currently, the facility has two stormwater basins located adjacent to the parking lot. Stormwater exits the stormwater basins into a drainage channel that ultimately discharges into Old Town Creek.

6.3 Good Housekeeping BMPs

Good housekeeping practices include activities that are intended to maintain a clean site and keep equipment in good working order to prevent pollutants from coming into contact with stormwater runoff. Daily cleanup and inspections are the most effective means of achieving good housekeeping. For the most part, good housekeeping practices should be incorporated into the day-to-day activities at the facility, as they foster a habit of good housekeeping, and they also help to assure worker safety.

Employees shall be trained to understand the practices and to implement them on an ongoing basis. The following good housekeeping BMPs will be employed for use at the School Maintenance Facilities Area:

- Tools and materials are returned to designated storage areas after use;
- All storage containers are properly labeled, to include warning labels if appropriate;
- All spills are immediately cleaned up;
- Spilled oil and grease is absorbed using absorbent material, which is then swept up and disposed of in the trash;
- Waste materials are collected and properly discarded;
- Indoor work areas are kept neat, uncluttered, and well-ventilated to discourage outdoor work that has the potential to generate pollutants and to allow leaks and spills to be quickly detected and controlled;
- Outdoor work areas are swept regularly (not hosed) and kept neat and clean;
- When outdoor work areas need cleaning beyond sweeping, all wash waters are contained, collected, and properly managed;
- Outdoor waste or trash receptacles are kept covered and regularly emptied; adjacent areas are inspected for misplaced or wind-blown litter; and
- Employees are regularly trained on proper good housekeeping practices.

6.4 Preventive Maintenance BMPs

Preventive maintenance BMPs relate to maintaining equipment in good working order. Having equipment failures or using equipment that poorly functions may result in the discharge of pollutants to the storm drainage system. Therefore, to reduce the likelihood of breakdown or failure, major equipment should have a preventive maintenance schedule for inspection, repair, or replacement of fluids (e.g., hydraulic, lubricating, cooling), greases, seals, hoses, filters, pressure gauges, piping, etc. Paved and landscaped areas should not be allowed to degrade to the point where they erode and

contribute pollutants to stormwater runoff. Leaky roofs, broken doors, cracked pavement and berms, and any other enclosure or structural defects that may impact the quality of stormwater runoff should be promptly repaired. Structural BMPs and storm drains within facility boundaries also need to be regularly inspected and maintained.

6.5 Proper Materials Handling and Storage BMPs

Materials handling and storage BMPs relate to controlling the potential for leaks, spills, and losses of materials delivered, used, and stored at a facility. Spills and leaks of materials can accumulate in soils or on surfaces and be carried away in stormwater runoff or in authorized non-stormwater discharges. These materials handling and storage BMPs will be employed:

6.5.1 Material Use

- Only obtain the amount of materials needed to finish a particular job;
- Limit waste generation by keeping good records and reviewing activities;
- Recycle materials whenever possible; and
- Read and follow manufacturer directions for use of materials and review the associated Material Safety Data Sheet (MSDS) for each product.

6.5.2 Materials Storage

- Store materials indoors or in a covered area (where possible) where exposure to rainwater is eliminated;
- Store lead-acid batteries indoors;
- Use hazardous materials storage lockers with spill containment or flammable materials lockers when appropriate;
- Locate storage areas away from vehicle and equipment paths to reduce the potential for accident-related leaks or spills;
- Store drums or other containers away from storm drain inlets;
- Provide informational signing, labels, restricted access, locks, inventory control, overhead coverage, and secondary containment for all hazardous material storage areas or container units; and
- Conduct regular inspections for leaks and control dates.

6.5.3 Proper Waste Handling BMPs

Waste handling BMPs relate to properly controlling, collecting, storing, and disposing of wastes that are generated at a facility. All facility personnel should be aware that the disposal of any waste (including wash water) into a storm drain inlet or stormwater conveyance (i.e., ditches or streets) is an illicit or unpermitted discharge. Likewise, disposing of waste (including wash water) onto a paved surface such

that it may be carried to a storm drain inlet or stormwater conveyance (i.e., ditches, streets) is an illegal discharge.

The following waste handling BMPs will be employed for use at the School Facility Maintenance Area:

- Sweep or vacuum (dry methods) work areas to collect metal, wood, and other particulates and debris frequently;
- Limit waste generation by keeping good records and reviewing activities;
- Recycle materials whenever possible;
- Separate and segregate different types of wastes;
- Store waste materials indoors or in a covered area where exposure to rainwater is eliminated;
- Continue using service provider for regularly-scheduled waste disposal;
- Use hazardous materials storage lockers with spill containment or flammable materials lockers when appropriate;
- Locate the waste storage area away from vehicle and equipment paths to reduce the potential for accident-related releases;
- Provide informational signage, labels, restricted access, inventory controls, overhead coverage, and secondary containment for all hazardous waste storage areas or container units;
- Conduct regular inspections for leaks and control dates.

7.0 SPILL PREVENTION AND RESPONSE

For spills, the old saying that "an ounce of prevention is worth a pound of cure" is appropriate. Spill clean-up can be labor-intensive and costly, as it involves containing the spill, collecting the spilled substance, properly disposing of the spilled materials, and filing of associated reports to regulatory agencies, not to mention possible monetary fines. Spills and leaks are some of the most significant sources of stormwater pollution and are, in most cases, avoidable.

Spill prevention and control procedures may include:

- Placing bollards, berms and/or containment features around structures or areas where fluids are stored, so releases can be prevented, easily detected, and controlled;
- Using drip pans for maintenance operations involving fluids and under leaking vehicles and equipment awaiting repair;
- Placing spill kits in areas where fluids are stored or in areas where activities may result in a spill;
- Providing training for proper use of materials and equipment used during operations and maintenance activities;
- Providing training for proper use of spill response equipment and supplies; and
- Conducting outdoor maintenance activities on paved surfaces to allow for easy detection, control, and cleanup of spills.

Spill prevention, control, and cleanup apply to all materials and wastes - not only hazardous substances. The toxic water quality effects from spills of hazardous substances (e.g., acids, oils, greases, fuels, solvents, pesticides) are commonly understood. However, non-hazardous materials, such as sand, litter, and wash water, among others - can also greatly impact water quality in receiving waters.

The facility will retain a spill history log of their spills (both reportable and non-reportable) using the summary log included in Appendix B. Additionally, if a reportable spill occurs at the Facility, the spill will be reported using the procedures and form provided in Appendix C.

7.1 Non-Reportable Spills

- Oil spills less than 25 gallons that do not reach a navigable waterway. These spills must be cleaned up and documented.
- Chemical spills not exceeding a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Reportable Quantities (RQ) or are wholly contained inside a building.

7.2 Reportable Spills

- Oil spills greater than 25 gallons must be reported to the Virginia DEQ within 24 hours
- Oil spills of any quantity that immediately threaten or affect (e.g. cause a sheen) a waterway must be immediately reported to the National Response Center (NRC) (1-800-424-8802) and the DEQ.
- Chemical spills that equal, or exceed, the RQ, or are an identified marine pollutant must be immediately reported to the NRC and the DEQ.
- Chemical spills below their RQ, or without an RQ that reach water must be reported to the DEQ.

Spills will be reported to the appropriate regulatory agency and staff as identified on Table 1 for individual responsibilities for pollution prevention.

8.0 EMPLOYEE TRAINING

Personnel identified in the Pollution Prevention Team for SWPPP Oversight (in Section 2.0) is responsible to ensure that all of their designated employees receive the appropriate Stormwater Management training on a biennial basis.

The project Coordinator will coordinate training related to stormwater management on at least a biennial basis and maintains all training records for inclusion in the City's Annual MS4 Report, as submitted to DEQ.

The purpose of stormwater-related training is to educate workers on the day-to-day activities that may impart pollutants into stormwater discharges from the site, to help in the implementation of BMPs, to ensure understanding of the City's procedures and policies for Water Quality, and to ensure employees understand what illicit discharges are and how to respond to them when they are witnessed.

Training attendance sheets and any other training documentation shall be kept in Appendix D. The instructor's name, if applicable, date and time of training, location of training, training title, participants' names, and corresponding employee numbers will be listed.

All training records shall be kept for a period of no less than three years.

9.0 FACILITY INSPECTIONS

9.1 Quarterly Inspections

At least once per quarter, the facility will be inspected using the City's School Facilities Maintenance Area Inspection Checklist, found in Appendix E. The inspection shall be conducted by the Pollution Prevention SWPPP Implementation Team, identified in Section 2.0.

The purpose of these inspections will be to identify problems early so that they can be corrected in a timely fashion. All completed forms shall be placed in Appendix E by the Director of Maintenance or his/her designee; he or she shall also send a copy of such reports to the Project Coordinator for inclusion in the Annual MS4 Report, which is submitted to the Virginia Department of Environmental Quality (DEQ) by October 1 of each year.

9.2 Annual Comprehensive Site Compliance Evaluation

An annual Comprehensive Site Compliance Evaluation (CSCE) of the School Maintenance Facilities Area will be conducted by the Pollution Prevention SWPPP Implementation Team, identified in Section 2.0, to help assure that significant changes in facilities or activities are identified and can then be reflected in the SWPPP. The annual CSCE will include:

- Visual inspection of all potential sources of pollutants that may enter the stormwater drainage system via stormwater or non-stormwater discharges;
- A review and assessment of all BMPs to determine whether the BMPs are adequate, properly implemented and maintained, or whether additional BMPs are needed; and
- Visual inspection of equipment needed to implement the SWPPP, such as spill response equipment, drip pans, brooms or vacuum sweepers, or containers for used absorbents.

The Annual CSCE will be documented by the Project Coordinator as follows:

- Identification of personnel performing the evaluation
- The date(s) of the evaluation
- Findings of the evaluation
- Recommended modifications of the SWPPP
- Schedule for implementing SWPPP revisions
- Any incidents of non-compliance and the corrective actions taken

Following the evaluation, revisions to the SWPPP, if needed, will be completed within 90 days. Blank evaluation forms are located in Appendix F, and completed evaluation forms shall be placed there by the Project Coordinator.

Table 5 may be used to track annual assessments and follow-through on recommendations. The Pollution Prevention SWPPP Implementation Team are available for technical assistance during the evaluation process, if needed.

Table 5. Assessment Log

Assessment Date (mm/dd/yyyy)	**Assessor** (Name &	**Revisions Required?** (Y/N)		**Follow Through?** (Date or n/a)
		Yes	No	
		Yes	No	
		Yes	No	
		Yes	No	
		Yes	No	
		Yes	No	

APPENDIX A. FACILITY SITE MAP

APPENDIX B. LIST OF SIGNIFICANT SPILLS AND LEAKS

LIST OF SIGNIFICANT SPILLS AND LEAKS

Facility Name		MS4 Permit #:	VAR040009

Date	Spill or Leak	Person Initials	Location	Description			Response Procedure		
				Type of Material	Quantity	Source Reason	Amount Recovered	Isolated?	Measures

APPENDIX C. DETAILED INFORMATION FOR REPORTABLE RELEASES

DETAILED INFORMATION FOR REPORTABLE RELEASES

Complete this form for each significant spill incident. Keep original form with the Plan.

INCIDENT DATE: _____ INCIDENT TIME: _____
REPORT DATE: _____ DISCOVERY TIME: _____
FACILITY NAME: _____
ADDRESS & LOCATION: _____
PERSON REPORTING: _____ PHONE: _____
MANAGER IN CHARGE: _____ PHONE: _____

SPILLED PRODUCT INFORMATION:

Spill Location: _____
Product: _____
Storage Capacity of Product Container: _____
Spill Volume: _____
Size of Area Affected by Release: _____
Duration of Release: _____

	YES	NO	
Spill from or suspected from a leaking AST, UST, or piping?	☐	☐	
Spill contained on premises?	☐	☐	
Did the spill enter the stormwater drainage system?		☐	☐
Did the spill enter a body of water?	☐	☐	

Nearest body of water or body of water spill entered? _____ Distance: _____

DESCRIPTION: (check all applicable)

☐ leaking drums/containers ☐ overfill, vehicle unattended ☐ equipment failure
☐ leaking tank/lube truck ☐ drive off, hose in vehicle ☐ other human error
☐ overfill, during fuel drop ☐ other (than storage device or equipment failure, or human error)

Hazards associated with the spill: _____
Amount of spill control supplies used/ to be restocked: _____
Type and amount of material to be disposed: _____
Measures taken to prevent recurring incidents: _____
Personal Injuries: _____
Additional pertinent information: _____

AGENCIES NOTIFIED OF INCIDENT:

Agency Name and Contact: _____Date/Time: _____
Agency Name and Contact: _____Date/Time: _____
Agency Name and Contact: _____Date/Time: _____

IT IS NOT NECESSARY TO WAIT FOR ALL INFORMATION BEFORE CALLING THE NATIONAL RESPONSE CENTER.

APPENDIX D. TRAINING RECORDS

APPENDIX E. QUARTERLY CHECKLIST FOR FACILITY ASSESSMENT

SWPPP QUARTERLY INSPECTION CHECKLIST

Facility: _____ Inspector: _____ Date: _____

Current Weather Conditions: _____ Date of Last Rain: _____

Were there corrective action requirements from previous inspection? _____

If yes, were all corrective actions performed and documented on inspection checklist? _____

Activity/Materials	Yes	Required Action	Date Corrected
OUTDOOR MATERIAL STOCKPILE	□		
Are controls in place for erodible piles?	□		
Are the controls for erodible piles adequate and in good condition?	□		
Are there any observed sediment migration from erodible piles?	□		
VEHICLE & EQUIPMENT MAINTENANCE	□		
Are maintenance activities performed indoors where practical?	□		
Are vehicles and equipment stored properly?	□		
Are there any vehicles or equipment leaking?	□		
Is an oil/water separator present and is it properly maintained?	□		
VEHICLE WASHING	□		
Is vehicle washing performed indoors?	□		
Is vehicle washing performed outdoors?	□		
Is there evidence that washing has taken places in other areas (e.g. hoses or wash buckets)?			
PETROLEUM AND FUELING	□		
Are oil containers managed properly or away from inlets to the stormwater drainage system?	□		
Are spill kits properly stocked and readily available at the Facility?	□		
Are fuel leaks and spills controlled using absorbents/ drip pans/ pads?	□		
Are fueling areas covered or otherwise protected from precipitation and run-on?	□		

Activity/Materials	Yes	Required Action	Date Corrected
Are dry cleanup materials swept up, containerized, and disposed properly?	□		
OTHERS	□		
Are all other containers intact and appropriately labeled?	□		
Are empty containers/drums labeled as such?			
Are drop inlet controls in place and are they in good working condition?	□		
Are check dams or other E&S controls present and are they intact and properly maintained?	□		
Is there any observed erosion on the lot?	□		
Is there any significant sediment observed in drop inlets and other stormwater drainage ways?	□		
Is there and significant sediment build up observed in outfalls?	□		
Is there any observed pollutant run-on from adjacent property, not previously identified?	□		

APPENDIX F. ANNUAL COMPREHENSIVE SITE COMPLIANCE EVALUATION FORMS

ANNUAL STORM SEWER INSPECTION CHECKLIST

DATE:
WEATHER CONDITIONS:
LAST DATE OF RAIN:
APPROXIMATE AMOUNT:
INSPECTOR:

***LIST ANY SPECIFIC PROBLEMS NOTED DURING THE INSPECTION AND ACTION TAKEN TO CORRECT BEFORE NEXT INSPECTION:**

---

1. CHECK FOR EXCESSIVE EROSION OF EARTHENED AND GRAVEL COMPACTED LOTS:

2. CHECK SEDIMENT AND DEBRIS BUILD-UP IN DROP INLETS, CATCH BASINS, DITCHES AND OTHER CONVEYANCE CHANNELS:

3. CHECK FOR EXCESSIVE EROSION OF VEGETATED DITCHES:

4. CHECK FOR FREE FLOWING AND NON-CLOGGED CULVERTS, ORIFICES, AND POINTS OF DISCHARGE:

5. CHECK THE CONDITION OF, AND AROUND, THE OUTFALL, INCLUDING FLOW DISSIPATION MEASURES TO PREVENT SCOURING:

ANNUAL REVIEW OF COMPLETED QUARTERLY CHECKLISTS

DATE:
INSPECTOR:

***LIST ANY SPECIFIC PROBLEMS NOTED DURING THE REVIEW AND ACTION TAKEN TO CORRECT BEFORE NEXT INSPECTION:**

---

1. WERE ALL QUARTERLY INSPECTIONS PERFORMED DURING THE REQUIRED MONTH?

2. WHEN APPROPRIATE, WERE ALL CORRECTIVE ACTIONS DOCUMENTED ON FORM?

3. WERE ALL CORRECTION ACTIONS BEING PERFORMED IN A TIMELY MANNER, AND BEING DOCUMENTED ON THE CORRESPONDING CHECKLIST?

4. THROUGH REVIEW OF THE CHECKLISTS, IS THERE APPARENT EVIDENCE THE SWPPP REQUIRES UPDATES OR MODIFICATIONS?

5. IS THE SWPPP BEING PROPERLY UPDATED THROUGHOUT THE YEAR, INCLUDING ANY NEW ACTIVITIES AND PROCEDURES?

6. IS A FORMAL REVISION OF THE SWPPP REQUIRED OR NECESSARY?

7. ARE THERE APPARENT CHRONIC DEFICIENCIES THAT MAY REQUIRE ADDITIONAL BUDGETS DURING THE NEXT FISCAL YEAR?

Tracking ID	SWM ID	Facility Name	Facility Address	Owner\Designee	Owner\Designee Mailing	Owner\Designee City	Owner\ Designee State	Owner\ Designee Zip	TYPE	Acres BMP'd	Sub-Watershed	H.U.C.	File #	Inspection Date
DEQSWM-2003-000003151	BMP-0001	City of Colonial Heights	201 James Avenue	City	201 James Avenue	Colonial Heights	VA	23834	Bioretention	0.60	Oldtown	JA40	100162	6/1/2021
CICOLH-2013-00274338□	BMP-0002	City of Colonial Heights	1209 Covington Road (behind)	City	201 James Avenue	Colonial Heights	VA	23834	Dry Detention Ponds	6.84	Appomattox	JA44	100515	6/1/2021
CICOLH-1998-00273875	BMP-0003	City of Colonial Heights	Lee Place & Danville Ave	City	201 James Avenue	Colonial Heights	VA	23834	Underground Infiltration System	27.04	Appomattox	JA44	100520	6/1/2021
DEQSWM-2003-000003153	BMP-0004	City of Colonial Heights	Archer Avenue at MLK Bridge	City	202 James Avenue	Colonial Heights	VA	23835	Dry Detention Ponds	0.74	Appomattox	JA40	101101	6/1/2021
DEQSWM-1993-000000857	BMP-0005	City of Colonial Heights	Chesterfield Avenue at Marvin Avenue	City	201 James Avenue	Colonial Heights	VA	23834	Dry Detention Ponds	0.11	Fleets Branch	JA40	100530	6/1/2021
DEQSWM-2002-000002788	BMP-0006	City of Colonial Heights	100 Highland Avenue	City	201 James Avenue	Colonial Heights	VA	23834	Bioretention	0.60	Oldtown	JA40	100162	6/1/2021
DEQSWM-2003-000003152	BMP-0009	CHMS (additions; staff parking lot)	500 Conduit Road	School Board	512 Boulevard	Colonial Heights	VA	23834	Bioswale	1.20	Appomattox	JA40	100973	6/1/2021
DEQSWM-2011-000008305	BMP-0012	Lakeview Maintenance Bldg.	401 Taswell Avenue	Colonial Heights School Board	512 Boulevard	Colonial Heights	VA	23834	Dry Detention Ponds	0.43	Oldtown	JA40	100208	6/1/2021
DEQSWM-2010-000007794	BMP-0052	Tussing Elementary	5501 Conduit Road	School Board	512 Boulevard	Colonial Heights	VA	23834	Dry Detention Ponds	3.66	Appomattox	JA44	100202	6/1/2021
CICH-2015-00002133	BMP-0068	Colonial Heights Courthouse	550 Boulevard	City	201 James Avenue	Colonial Heights	VA	23834	Dry Detention Ponds	4.60	Fleets Branch	JA40	101112	6/1/2021
CICOLH-2012-00273874	BMP-0072	Lakeview Elementaty School (Addition)	401 Taswell Avenue	Colonial Heights Public Schools	512 Boulevard	Colonial Heights	VA	23834	Dry Extended Detention Ponds	3.79	Oldtown	JA40	101082	6/1/2021
VADEQ-2019-00246547	BMP-0081	North Elementary School (Addition)	3201 Dale Avenue	School Board (Maintenance Director)	512 Boulevard	Colonial Heights	VA	23831	Dry Extended Detention Ponds	1.00	Swift Creek	JA40	101169	6/1/2021

CITY OF COLONIAL HEIGHTS, VA OPERATIONS & MAINTENANCE BMP CHECKLIST	Inspected By: Jeremy Moore
	DATE: 06/01/21
	BMP ID# 0001 - 201 James Ave
	TYPE of BMP: BR
	NUMBER if PRIVATE:

Item	Yes/No	Repair	Investigate	COMMENTS	ACTION
I. EMBANKMENT					
A. Crest					
1. Visual Settlement	NO				
B. Upstream Slope					
1. Erosion	NO				
2. Adequate Groundcover	YES				
3. Trees, Shrubs, Other	YES				
4. Cracks, Settlements, Other	NO				
5. Rodent Holes	NO				
C. Downstream Slope					
1. Erosion	NO				
2. Adequate Groundcover	YES				
3. Trees, Shrubs, Other	YES				
4. Cracks, Settlements, Other	NO				
5. Rodent Holes	NO				
D. Abutments					
1. Erosion	NO				
2. Seepage	NO				
3. Cracks	NO				
E. Drainage, Seepage Control					
1. Seepage at Toe	NO				
II. EMERGENCY SPILLWAY					
1. Eroding or Back Cutting	NO				
2. Obstructed	NO				
3. Leaking	NO				
III. PRINCIPAL SPILLWAY BARREL					
1. Seepage into Conduit	NO				
2. Debris Present	NO				
3. Displaced or Offset Joints	NO				
IV. OUTLET PROTECTION					
1. Obstructed	NO				
2. Undercutting at Outlet	NO				
3. Outlet Channel Scour	NO				
V. BASIN & UPLAND BUFFER AREA					
A. Low Flow Channel					
1. Erosion	NO				
2. Obstructed	NO				

CITY OF COLONIAL HEIGHTS, VA
OPERATIONS & MAINTENANCE
BMP CHECKLIST

Inspected By: Jeremy Moore
DATE: 06/01/21
BMP ID# 0001 - 201 James Ave
TYPE of BMP: BR
NUMBER if PRIVATE:

Item	Yes/No	Repair	Investigate	COMMENTS	ACTION
B. Basin Bottom & Side Slopes					
1. Erosion	NO				
2. Adequate Stabilization	YES				
3. Sediment Accumulation	NO				
4. Floating Debris	NO				
5. High Water Marks	NO				
C. Inflow Channel/Pipes					
1. Erosion	NO				
2. Adequate Stabilization	YES				
3. Undecutting	NO				
D. Sediment Forebay					
1. Sediment Accumulation	NO				
2. Stable Overflow into Basin	YES				
E. Permanent Pool					
1. Sediment Accumulation	NO				
2. Shoreline Erosion	NO				
3. Floating Debris	NO				
4. Oil Slick	NO				
5. Mosquito Problem	NO				
F. Vegetation					
1. Shoreline	YES				
2. Permanent Pool	NO				
G. Landscaping/Fences Maintained	NO				

Type Of Inspection (circle one) Annual Complaint Other

Photos

CITY OF COLONIAL HEIGHTS, VA OPERATIONS & MAINTENANCE BMP CHECKLIST	Inspected By: Jeremy Moore
	DATE: 06/01/21
	BMP ID# 0002 - 1209 Covington Rd - Rear
	TYPE of BMP: CB
	NUMBER if PRIVATE:

Item	Yes/No	Repair	Investigate	COMMENTS	ACTION
I. EMBANKMENT					
A. Crest					
1. Visual Settlement	NO				
B. Upstream Slope					
1. Erosion	NO				
2. Adequate Groundcover	YES				
3. Trees, Shrubs, Other	NO				
4. Cracks, Settlements, Other	NO				
5. Rodent Holes	NO				
C. Downstream Slope					
1. Erosion	NO				
2. Adequate Groundcover	YES				
3. Trees, Shrubs, Other	NO				
4. Cracks, Settlements, Other	NO				
5. Rodent Holes	NO				
D. Abutments					
1. Erosion	NO				
2. Seepage	NO				
3. Cracks	NO				
E. Drainage, Seepage Control					
1. Seepage at Toe	NO				
II. EMERGENCY SPILLWAY					
1. Eroding or Back Cutting	NO				
2. Obstructed	NO				
3. Leaking	NO				
III. PRINCIPAL SPILLWAY BARREL					
1. Seepage into Conduit	NO				
2. Debris Present	NO				
3. Displaced or Offset Joints	NO				
IV. OUTLET PROTECTION					
1. Obstructed	NO				
2. Undercutting at Outlet	NO				
3. Outlet Channel Scour	NO				
V. BASIN & UPLAND BUFFER AREA					
A. Low Flow Channel					
1. Erosion	NO				
2. Obstructed	NO				

CITY OF COLONIAL HEIGHTS, VA
OPERATIONS & MAINTENANCE
BMP CHECKLIST

Inspected By: Jeremy Moore
DATE: 06/01/21
BMP ID# 0002 - 1209 Covington Rd - Rear
TYPE of BMP: CB
NUMBER if PRIVATE:

Item	Yes/No	Repair	Investigate	COMMENTS	ACTION
B. Basin Bottom & Side Slopes					
1. Erosion	NO				
2. Adequate Stabilization	YES				
3. Sediment Accumulation	NO				
4. Floating Debris	NO				
5. High Water Marks	NO				
C. Inflow Channel/Pipes					
1. Erosion	NO				
2. Adequate Stabilization	YES				
3. Undecutting	NO				
D. Sediment Forebay					
1. Sediment Accumulation	NO				
2. Stable Overflow into Basin	YES				
E. Permanent Pool					
1. Sediment Accumulation	NO				
2. Shoreline Erosion	NO				
3. Floating Debris	NO				
4. Oil Slick	NO				
5. Mosquito Problem	NO				
F. Vegetation					
1. Shoreline	YES				
2. Permanent Pool	NO				
G. Landscaping/Fences Maintained	YES			Maintained Earth	

Type Of Inspection (circle one) Annual Complaint Other

Photos

CITY OF COLONIAL HEIGHTS, VA
OPERATIONS & MAINTENANCE
BMP CHECKLIST

Inspected By: Jeremy Moore
DATE: 06/01/21
BMP ID# 0003 - Lee Pl & Danville Ave
TYPE of BMP: Underground Storage
NUMBER if PRIVATE:

Item	Yes/No	Repair	Investigate	COMMENTS	ACTION
I. EMBANKMENT					
A. Crest					
1. Visual Settlement	NA				
B. Upstream Slope					
1. Erosion	NA				
2. Adequate Groundcover	NA				
3. Trees, Shrubs, Other	NA				
4. Cracks, Settlements, Other	NA				
5. Rodent Holes	NA				
C. Downstream Slope					
1. Erosion	NA				
2. Adequate Groundcover	NA				
3. Trees, Shrubs, Other	NA				
4. Cracks, Settlements, Other	NA				
5. Rodent Holes	NA				
D. Abutments					
1. Erosion	NA				
2. Seepage	NA				
3. Cracks	NA				
E. Drainage, Seepage Control					
1. Seepage at Toe	NA				
II. EMERGENCY SPILLWAY					
1. Eroding or Back Cutting	NA				
2. Obstructed	NA				
3. Leaking	NA				
III. PRINCIPAL SPILLWAY BARREL					
1. Seepage into Conduit	NA			Possible debris in pipes.	
2. Debris Present	YES				
3. Displaced or Offset Joints	NO				
IV. OUTLET PROTECTION					
1. Obstructed	NO				
2. Undercutting at Outlet	NO				
3. Outlet Channel Scour	NA				
V. BASIN & UPLAND BUFFER AREA					
A. Low Flow Channel					
1. Erosion	NA				
2. Obstructed	NO				

CITY OF COLONIAL HEIGHTS, VA
OPERATIONS & MAINTENANCE
BMP CHECKLIST

Inspected By: Jeremy Moore
DATE: 06/01/21
BMP ID# 0003 - Lee Pl & Danville Ave
TYPE of BMP: Underground Storage
NUMBER if PRIVATE:

Item	Yes/No	Repair	Investigate	COMMENTS	ACTION
B. Basin Bottom & Side Slopes					
1. Erosion	NA				
2. Adequate Stabilization	NA				
3. Sediment Accumulation	YES				
4. Floating Debris	NO				
5. High Water Marks	NO				
C. Inflow Channel/Pipes					
1. Erosion	NO				
2. Adequate Stabilization	YES				
3. Undecutting	NO				
D. Sediment Forebay					
1. Sediment Accumulation	NA				
2. Stable Overflow into Basin	YES				
E. Permanent Pool					
1. Sediment Accumulation	NA				
2. Shoreline Erosion	NA				
3. Floating Debris	NA				
4. Oil Slick	NA				
5. Mosquito Problem					
F. Vegetation					
1. Shoreline	NA				
2. Permanent Pool	NA				
G. Landscaping/Fences Maintained	NA				

Type Of Inspection (circle one) Annual Complaint - Other

Photos

May need to acquire contractor to clean barrels after we pump out what we can.

CITY OF COLONIAL HEIGHTS, VA OPERATIONS & MAINTENANCE BMP CHECKLIST	Inspected By: Jeremy Moore
	DATE: 06/01/21
	BMP ID# 0005 - Chesterfield @ Marvin Ave
	TYPE of BMP: DB\FL
	NUMBER if PRIVATE:

Item	Yes/No	Repair	Investigate	COMMENTS	ACTION
I. EMBANKMENT					
A. Crest					
1. Visual Settlement	NO				
B. Upstream Slope					
1. Erosion	NO				
2. Adequate Groundcover	YES				
3. Trees, Shrubs, Other	YES				
4. Cracks, Settlements, Other	NO				
5. Rodent Holes	NO				
C. Downstream Slope					
1. Erosion	NO				
2. Adequate Groundcover	YES				
3. Trees, Shrubs, Other	YES				
4. Cracks, Settlements, Other	NO				
5. Rodent Holes	NO				
D. Abutments					
1. Erosion	NO				
2. Seepage	NO				
3. Cracks	NO				
E. Drainage, Seepage Control					
1. Seepage at Toe	NO				
II. EMERGENCY SPILLWAY					
1. Eroding or Back Cutting	NO				
2. Obstructed	NO				
3. Leaking	NO				
III. PRINCIPAL SPILLWAY BARREL					
1. Seepage into Conduit	NO				
2. Debris Present	NO				
3. Displaced or Offset Joints	NO				
IV. OUTLET PROTECTION					
1. Obstructed	NO				
2. Undercutting at Outlet	NO				
3. Outlet Channel Scour	NO				
V. BASIN & UPLAND BUFFER AREA					
A. Low Flow Channel					
1. Erosion	NO				
2. Obstructed	NO				

CITY OF COLONIAL HEIGHTS, VA
OPERATIONS & MAINTENANCE
BMP CHECKLIST

Inspected By: Jeremy Moore
DATE: 06/01/21
BMP ID# 0005 - Chesterfield @ Marvin Ave
TYPE of BMP: DB\FL
NUMBER if PRIVATE:

Item	Yes/No	Repair	Investigate	COMMENTS	ACTION
B. Basin Bottom & Side Slopes					
1. Erosion	NO				
2. Adequate Stabilization	YES				
3. Sediment Accumulation	NO				
4. Floating Debris	NO				
5. High Water Marks	YES				
C. Inflow Channel/Pipes					
1. Erosion	NO				
2. Adequate Stabilization	YES				
3. Undecutting	NO				
D. Sediment Forebay					
1. Sediment Accumulation	NO				
2. Stable Overflow into Basin	YES				
E. Permanent Pool					
1. Sediment Accumulation	NO				
2. Shoreline Erosion	NO				
3. Floating Debris	NO				
4. Oil Slick	NO				
5. Mosquito Problem	NO				
F. Vegetation					
1. Shoreline	YES				
2. Permanent Pool	NO				
G. Landscaping/Fences Maintained	YES				

Type Of Inspection (circle one) Annual Complaint Other

Photos

CITY OF COLONIAL HEIGHTS, VA
OPERATIONS & MAINTENANCE
BMP CHECKLIST

Inspected By: Jeremy Moore
DATE: 06/01/21
BMP ID# 0006 - 100 Highland Ave
TYPE of BMP: BR
NUMBER if PRIVATE:

Item	Yes/No	Repair	Investigate	COMMENTS	ACTION
I. EMBANKMENT					
A. Crest					
1. Visual Settlement	NO				
B. Upstream Slope					
1. Erosion	NO				
2. Adequate Groundcover	Yes				
3. Trees, Shrubs, Other	NO				
4. Cracks, Settlements, Other	NO				
5. Rodent Holes	NO				
C. Downstream Slope					
1. Erosion	NO				
2. Adequate Groundcover	YES				
3. Trees, Shrubs, Other	NO				
4. Cracks, Settlements, Other	NO				
5. Rodent Holes	NO				
D. Abutments					
1. Erosion	NO				
2. Seepage	NO				
3. Cracks	NO				
E. Drainage, Seepage Control					
1. Seepage at Toe	NO				
II. EMERGENCY SPILLWAY				**BMP has been sprayed with herbicide. Channel needs to be cleaned out. Work will need to be done on weekend. Work order created.**	Work completed 7/23/2021
1. Eroding or Back Cutting	NO				
2. Obstructed	YES	**X**			
3. Leaking	NO				
III. PRINCIPAL SPILLWAY BARREL					
1. Seepage into Conduit	NO				
2. Debris Present	NO				
3. Displaced or Offset Joints	NO				
IV. OUTLET PROTECTION					
1. Obstructed	NO				
2. Undercutting at Outlet	NO				
3. Outlet Channel Scour	NO				
V. BASIN & UPLAND BUFFER AREA					
A. Low Flow Channel					
1. Erosion	NO				
2. Obstructed	NO				

CITY OF COLONIAL HEIGHTS, VA OPERATIONS & MAINTENANCE BMP CHECKLIST	Inspected By: Jeremy Moore
	DATE: 06/01/21
	BMP ID# 0006 - 100 Highland Ave
	TYPE of BMP: BR
	NUMBER if PRIVATE:

Item	Yes/No	Repair	Investigate	COMMENTS	ACTION
B. Basin Bottom & Side Slopes					
1. Erosion	NO				Work completed 7/23/2021
2. Adequate Stabilization	YES				
3. Sediment Accumulation	YES	X			
4. Floating Debris	NO				
5. High Water Marks	NO				
C. Inflow Channel/Pipes					
1. Erosion	NO				
2. Adequate Stabilization	YES				
3. Undecutting	NO				
D. Sediment Forebay					
1. Sediment Accumulation	YES	X			Work completed 7/23/2021
2. Stable Overflow into Basin	YES				
E. Permanent Pool					
1. Sediment Accumulation	NO				
2. Shoreline Erosion	NO				
3. Floating Debris	NO				
4. Oil Slick	NO				
5. Mosquito Problem	NO				
F. Vegetation					
1. Shoreline	YES				
2. Permanent Pool	NO				
G. Landscaping/Fences Maintained	YES				

Type Of Inspection (circle one) Annual Complaint Other

Photos

CITY OF COLONIAL HEIGHTS, VA
OPERATIONS & MAINTENANCE
BMP CHECKLIST

Inspected By: Jeremy Moore
DATE: 06/01/21
BMP ID# 0009 - 500 Conduit Rd - CHMS
TYPE of BMP: SW
NUMBER if PRIVATE:

Item	Yes/No	Repair	Investigate	COMMENTS	ACTION
I. EMBANKMENT					
A. Crest	NO				
1. Visual Settlement					
B. Upstream Slope					
1. Erosion	NO				
2. Adequate Groundcover	YES				
3. Trees, Shrubs, Other	NO				
4. Cracks, Settlements, Other	NO				
5. Rodent Holes	NO				
C. Downstream Slope					
1. Erosion	NO				
2. Adequate Groundcover	YES				
3. Trees, Shrubs, Other	NO				
4. Cracks, Settlements, Other	NO				
5. Rodent Holes	NO				
D. Abutments					
1. Erosion	NO				
2. Seepage	NO				
3. Cracks	NO				
E. Drainage, Seepage Control					
1. Seepage at Toe	NO				
II. EMERGENCY SPILLWAY					
1. Eroding or Back Cutting	NO				
2. Obstructed	NO				
3. Leaking	NO				
III. PRINCIPAL SPILLWAY BARREL					
1. Seepage into Conduit	NO				
2. Debris Present	NO				
3. Displaced or Offset Joints	NO				
IV. OUTLET PROTECTION					
1. Obstructed	NO				
2. Undercutting at Outlet	NO				
3. Outlet Channel Scour	NO				
V. BASIN & UPLAND BUFFER AREA					
A. Low Flow Channel					
1. Erosion	NO				
2. Obstructed	NO				

CITY OF COLONIAL HEIGHTS, VA
OPERATIONS & MAINTENANCE
BMP CHECKLIST

Inspected By: Jeremy Moore
DATE: 06/01/21
BMP ID# 0009 - 500 Conduit Rd - CHMS
TYPE of BMP: SW
NUMBER if PRIVATE:

Item	Yes/No	Repair	Investigate	COMMENTS	ACTION
B. Basin Bottom & Side Slopes					
1. Erosion	NO				
2. Adequate Stabilization	YES				
3. Sediment Accumulation	NO				
4. Floating Debris	NO				
5. High Water Marks	NO				
C. Inflow Channel/Pipes					
1. Erosion	NO				
2. Adequate Stabilization	YES				
3. Undecutting	NO				
D. Sediment Forebay					
1. Sediment Accumulation	NO				
2. Stable Overflow into Basin	YES				
E. Permanent Pool					
1. Sediment Accumulation	NO				
2. Shoreline Erosion	NO				
3. Floating Debris	NO				
4. Oil Slick	NO				
5. Mosquito Problem	NO				
F. Vegetation					
1. Shoreline	YES				
2. Permanent Pool	NO				
G. Landscaping/Fences Maintained	YES				

Type Of Inspection (circle one) Annual Complaint Other

Photos

CITY OF COLONIAL HEIGHTS, VA OPERATIONS & MAINTENANCE BMP CHECKLIST	Inspected By: Jeremy Moore
	DATE: 06/01/20
	BMP ID# 0012 - 401 Taswell Ave - Maint. Bld
	TYPE of BMP: DB (front location)
	NUMBER if PRIVATE:

Item	Yes/No	Repair	Investigate	COMMENTS	ACTION
I. EMBANKMENT				Schools to Maintain.	
A. Crest					
1. Visual Settlement	NO				
B. Upstream Slope					
1. Erosion	NO				
2. Adequate Groundcover	YES				
3. Trees, Shrubs, Other	NO				
4. Cracks, Settlements, Other	NO				
5. Rodent Holes	NO				
C. Downstream Slope					
1. Erosion	NO				
2. Adequate Groundcover	YES				
3. Trees, Shrubs, Other	NO				
4. Cracks, Settlements, Other	NO				
5. Rodent Holes	NO				
D. Abutments					
1. Erosion	NO				
2. Seepage	NO				
3. Cracks	NO				
E. Drainage, Seepage Control					
1. Seepage at Toe	NO				
II. EMERGENCY SPILLWAY					
1. Eroding or Back Cutting	NO				
2. Obstructed	NO				
3. Leaking	NO				
III. PRINCIPAL SPILLWAY BARREL					
1. Seepage into Conduit	NO				
2. Debris Present	NO				
3. Displaced or Offset Joints	NO				
IV. OUTLET PROTECTION					
1. Obstructed	NO				
2. Undercutting at Outlet	NO				
3. Outlet Channel Scour	NO				
V. BASIN & UPLAND BUFFER AREA					
A. Low Flow Channel					
1. Erosion	NO				
2. Obstructed	NO				

CITY OF COLONIAL HEIGHTS, VA
OPERATIONS & MAINTENANCE
BMP CHECKLIST

Inspected By: Jeremy Moore
DATE: 06/01/20
BMP ID# 0012 - 401 Taswell Ave - Maint. Bld
TYPE of BMP: DB (front location)
NUMBER if PRIVATE:

Item	Yes/No	Repair	Investigate	COMMENTS	ACTION
B. Basin Bottom & Side Slopes					
1. Erosion	NO				
2. Adequate Stabilization	YES				
3. Sediment Accumulation	NO				
4. Floating Debris	NO				
5. High Water Marks	NO				
C. Inflow Channel/Pipes					
1. Erosion	NO				
2. Adequate Stabilization	YES				
3. Undecutting	NO				
D. Sediment Forebay					
1. Sediment Accumulation	NO				
2. Stable Overflow into Basin	YES				
E. Permanent Pool					
1. Sediment Accumulation	NO				
2. Shoreline Erosion	NO				
3. Floating Debris	NO				
4. Oil Slick	NO				
5. Mosquito Problem	NO				
F. Vegetation					
1. Shoreline	YES				
2. Permanent Pool	NO				
G. Landscaping/Fences Maintained	YES				

Type Of Inspection (circle one) Annual Complaint Other

Photos

CITY OF COLONIAL HEIGHTS, VA OPERATIONS & MAINTENANCE BMP CHECKLIST	Inspected By: Jeremy Moore
	DATE: 06/01/21
	BMP ID# 0052 - 5501 Conduit Rd - Tussing School
	TYPE of BMP: DB
	NUMBER if PRIVATE:

Item	Yes/No	Repair	Investigate	COMMENTS	ACTION
I. EMBANKMENT				Schools to Maintain.	
A. Crest					
1. Visual Settlement	NO				
B. Upstream Slope					
1. Erosion	NO				
2. Adequate Groundcover	YES				
3. Trees, Shrubs, Other	YES				
4. Cracks, Settlements, Other	NO				
5. Rodent Holes	NO				
C. Downstream Slope					
1. Erosion	NO				
2. Adequate Groundcover	YES				
3. Trees, Shrubs, Other	YES				
4. Cracks, Settlements, Other	NO				
5. Rodent Holes	NO				
D. Abutments					
1. Erosion	NO				
2. Seepage	NO				
3. Cracks	NO				
E. Drainage, Seepage Control					
1. Seepage at Toe	NO				
II. EMERGENCY SPILLWAY					
1. Eroding or Back Cutting	NO				
2. Obstructed	NO				
3. Leaking	NO				
III. PRINCIPAL SPILLWAY BARREL					
1. Seepage into Conduit	NO				
2. Debris Present	NO				
3. Displaced or Offset Joints	NO				
IV. OUTLET PROTECTION					
1. Obstructed	NO				
2. Undercutting at Outlet	NO				
3. Outlet Channel Scour	NO				
V. BASIN & UPLAND BUFFER AREA					
A. Low Flow Channel					
1. Erosion	NO				
2. Obstructed	NO				

CITY OF COLONIAL HEIGHTS, VA
OPERATIONS & MAINTENANCE
BMP CHECKLIST

Inspected By: Jeremy Moore
DATE: 06/01/21
BMP ID# 0052 - 5501 Conduit Rd - Tussing School
TYPE of BMP: DB
NUMBER if PRIVATE:

Item	Yes/No	Repair	Investigate	COMMENTS	ACTION
B. Basin Bottom & Side Slopes					
1. Erosion	NO				
2. Adequate Stabilization	YES				
3. Sediment Accumulation	NO				
4. Floating Debris	NO				
5. High Water Marks	NO				
C. Inflow Channel/Pipes					
1. Erosion	NO				
2. Adequate Stabilization	YES				
3. Undecutting	NO				
D. Sediment Forebay					
1. Sediment Accumulation	NO				
2. Stable Overflow into Basin	YES				
E. Permanent Pool					
1. Sediment Accumulation	NO				
2. Shoreline Erosion	NO				
3. Floating Debris	NO				
4. Oil Slick	NO				
5. Mosquito Problem	NO				
F. Vegetation					
1. Shoreline	YES				
2. Permanent Pool	NO				
G. Landscaping/Fences Maintained	YES				

Type Of Inspection (circle one) Annual Complaint Other

Photos

CITY OF COLONIAL HEIGHTS, VA OPERATIONS & MAINTENANCE BMP CHECKLIST	Inspected By: Jeremy Moore
	DATE: 06/01/21
	BMP ID# 0068 - Colonial Height Courthouse
	TYPE of BMP: DB
	NUMBER if PRIVATE:

Item	Yes/No	Repair	Investigate	COMMENTS	ACTION
I. EMBANKMENT					
A. Crest					
1. Visual Settlement	NO				
B. Upstream Slope				Parks & Grounds to Maintain	
1. Erosion	NO				
2. Adequate Groundcover	YES				
3. Trees, Shrubs, Other	YES				
4. Cracks, Settlements, Other	NO				
5. Rodent Holes	NO				
C. Downstream Slope					
1. Erosion	NO				
2. Adequate Groundcover	YES				
3. Trees, Shrubs, Other	YES				
4. Cracks, Settlements, Other	NO				
5. Rodent Holes	NO				
D. Abutments					
1. Erosion	NO				
2. Seepage	NO				
3. Cracks	NO				
E. Drainage, Seepage Control					
1. Seepage at Toe	NO				
II. EMERGENCY SPILLWAY					
1. Eroding or Back Cutting	NO				
2. Obstructed	NO				
3. Leaking	NO				
III. PRINCIPAL SPILLWAY BARREL					
1. Seepage into Conduit	NO				
2. Debris Present	NO				
3. Displaced or Offset Joints	NO				
IV. OUTLET PROTECTION					
1. Obstructed	NO				
2. Undercutting at Outlet	NO				
3. Outlet Channel Scour	NO				
V. BASIN & UPLAND BUFFER AREA					
A. Low Flow Channel					
1. Erosion	NO				
2. Obstructed	YES				

CITY OF COLONIAL HEIGHTS, VA
OPERATIONS & MAINTENANCE
BMP CHECKLIST

Inspected By: Jeremy Moore
DATE: 06/01/21
BMP ID# 0068 - Colonial Height Courthouse
TYPE of BMP: DB
NUMBER if PRIVATE:

Item	Yes/No	Repair	Investigate	COMMENTS	ACTION
B. Basin Bottom & Side Slopes					
1. Erosion	NO				
2. Adequate Stabilization	YES				
3. Sediment Accumulation	NO				
4. Floating Debris	NO				
5. High Water Marks	NO				
C. Inflow Channel/Pipes					
1. Erosion	NO				
2. Adequate Stabilization	YES				
3. Undecutting	NO				
D. Sediment Forebay					
1. Sediment Accumulation	NO				
2. Stable Overflow into Basin	YES				
E. Permanent Pool					
1. Sediment Accumulation	NO				
2. Shoreline Erosion	NO				
3. Floating Debris	NO				
4. Oil Slick	NO				
5. Mosquito Problem	NO				
F. Vegetation					
1. Shoreline	YES			**Landscape Maintenance Needed**	Work to be completed 10/1/21
2. Permanent Pool	NO				
G. Landscaping/Fences Maintained	YES				

Type Of Inspection (circle one) Annual Complaint Other

Photos

CITY OF COLONIAL HEIGHTS, VA
OPERATIONS & MAINTENANCE
BMP CHECKLIST

Inspected By: Jeremy Moore

DATE: 06/01/21

BMP ID# 0072 - 401 Taswell Ave - Maint. Bld

TYPE of BMP: DB (Side Location)

NUMBER if PRIVATE:

Item	Yes/No	Repair	Investigate	COMMENTS	ACTION
I. EMBANKMENT					
A. Crest					
1. Visual Settlement	NO				
B. Upstream Slope					
1. Erosion	NO				
2. Adequate Groundcover	YES				
3. Trees, Shrubs, Other	NO				
4. Cracks, Settlements, Other	NO				
5. Rodent Holes	NO				
C. Downstream Slope					
1. Erosion	NO				
2. Adequate Groundcover	YES				
3. Trees, Shrubs, Other	NO				
4. Cracks, Settlements, Other	NO				
5. Rodent Holes	NO				
D. Abutments					
1. Erosion	NO				
2. Seepage	NO				
3. Cracks	NO				
E. Drainage, Seepage Control					
1. Seepage at Toe	NO				
II. EMERGENCY SPILLWAY					
1. Eroding or Back Cutting	NO				
2. Obstructed	NO				
3. Leaking	NO				
III. PRINCIPAL SPILLWAY BARREL					
1. Seepage into Conduit	NO				
2. Debris Present	NO				
3. Displaced or Offset Joints	NO				
IV. OUTLET PROTECTION					
1. Obstructed	NO				
2. Undercutting at Outlet	NO				
3. Outlet Channel Scour	NO				
V. BASIN & UPLAND BUFFER AREA					
A. Low Flow Channel					
1. Erosion	NO				
2. Obstructed	NO				

CITY OF COLONIAL HEIGHTS, VA OPERATIONS & MAINTENANCE BMP CHECKLIST	Inspected By: Jeremy Moore
	DATE: 06/01/21
	BMP ID# 0072 - 401 Taswell Ave - Maint. Bld
	TYPE of BMP: DB (Side Location)
	NUMBER if PRIVATE:

Item	Yes/No	Repair	Investigate	COMMENTS	ACTION
B. Basin Bottom & Side Slopes					
1. Erosion	NO				
2. Adequate Stabilization	YES				
3. Sediment Accumulation	NO				
4. Floating Debris	NO				
5. High Water Marks	NO				
C. Inflow Channel/Pipes					
1. Erosion	NO				
2. Adequate Stabilization	YES				
3. Undecutting	NO				
D. Sediment Forebay					
1. Sediment Accumulation	NO				
2. Stable Overflow into Basin	YES				
E. Permanent Pool					
1. Sediment Accumulation	NO				
2. Shoreline Erosion	NO				
3. Floating Debris	NO				
4. Oil Slick	NO				
5. Mosquito Problem	NO				
F. Vegetation					
1. Shoreline	YES				
2. Permanent Pool	NO				
G. Landscaping/Fences Maintained	YES				

Type Of Inspection (circle one) Annual Complaint Other

Photos

CITY OF COLONIAL HEIGHTS, VA OPERATIONS & MAINTENANCE BMP CHECKLIST	Inspected By: Jeremy Moore
	DATE: 06/01/21
	BMP ID# 0081 - North Elementary
	TYPE of BMP: DB
	NUMBER if PRIVATE:

Item	Yes/No	Repair	Investigate	COMMENTS	ACTION
I. EMBANKMENT				Schools to Maintain	
A. Crest					
1. Visual Settlement	NO				
B. Upstream Slope					
1. Erosion	NO				
2. Adequate Groundcover	YES				
3. Trees, Shrubs, Other	No				
4. Cracks, Settlements, Other	NO				
5. Rodent Holes	No				
C. Downstream Slope					
1. Erosion	NO				
2. Adequate Groundcover	YES				
3. Trees, Shrubs, Other	NO				
4. Cracks, Settlements, Other	NO				
5. Rodent Holes	NO				
D. Abutments					
1. Erosion	NO				
2. Seepage	NO				
3. Cracks	NO				
E. Drainage, Seepage Control					
1. Seepage at Toe	NO				
II. EMERGENCY SPILLWAY					
1. Eroding or Back Cutting	NO				
2. Obstructed	NO				
3. Leaking	No				
III. PRINCIPAL SPILLWAY BARREL					
1. Seepage into Conduit	NO				
2. Debris Present	NO				
3. Displaced or Offset Joints	No				
IV. OUTLET PROTECTION					
1. Obstructed	NO				
2. Undercutting at Outlet	NO				
3. Outlet Channel Scour	NO				
V. BASIN & UPLAND BUFFER AREA					
A. Low Flow Channel					
1. Erosion	NO				
2. Obstructed	NO				

CITY OF COLONIAL HEIGHTS, VA
OPERATIONS & MAINTENANCE
BMP CHECKLIST

Inspected By: Jeremy Moore
DATE: 06/01/21
BMP ID# 0081 - North Elementary
TYPE of BMP: DB
NUMBER if PRIVATE:

Item	Yes/No	Repair	Investigate	COMMENTS	ACTION
B. Basin Bottom & Side Slopes					
1. Erosion	NO				
2. Adequate Stabilization	YES				
3. Sediment Accumulation	NO				
4. Floating Debris	NO				
5. High Water Marks	NO				
C. Inflow Channel/Pipes					
1. Erosion	NO				
2. Adequate Stabilization	YES				
3. Undecutting	NO				
D. Sediment Forebay					
1. Sediment Accumulation	NO				
2. Stable Overflow into Basin	YES				
E. Permanent Pool					
1. Sediment Accumulation	NO				
2. Shoreline Erosion	NO				
3. Floating Debris	NO				
4. Oil Slick	NO				
5. Mosquito Problem	NO				
F. Vegetation					
1. Shoreline	YES				
2. Permanent Pool	NO				
G. Landscaping/Fences Maintained	YES				

Type Of Inspection (circle one) Annual Complaint Other

Photos

EC Inspections

Site		
Briarcliffe Section 4		
Inspection Date	**Action Taken (If Any)**	**Regulation**
4/12/2021		
4/26/2021		
5/10/2021		
5/24/2021		
6/7/2021		
6/21/2021		

Site		
Temple Ave Commercial		
Inspection Date	**Action Taken (If Any)**	**Regulation**
2/16/2021		
3/1/2021		
3/15/2021		
3/29/2021		
4/12/2021		
4/26/2021		
5/10/2021		
5/24/2021		
6/7/2021		
6/21/2021		

Site		
Mission BBQ		
Inspection Date	**Action Taken (If Any)**	**Regulation**
5/24/2021		
6/7/2021		
6/21/2021		

Site		
Hrouda Pump Station		
Inspection Date	**Action Taken (If Any)**	**Regulation**
2/3/2021		
2/16/2021		
3/1/2021		
3/15/2021		
3/29/2021		
4/12/2021		
4/26/2021		
5/10/2021		
5/24/2021		
6/7/2021		
6/21/2021		

Site		
Flagstop Car Wash		
Inspection Date	**Action Taken (If Any)**	**Regulation**
9/14/2020		
9/28/2020		
10/13/2020		
10/26/2020		
11/9/2020		
11/23/2020		

Site		
Boot Barn		
Inspection Date	**Action Taken (If Any)**	**Regulation**
7/6/2020		

Employee Name	Certifications	Expiration Dates
Steve Perkins	DEQ Dual Inspector	March 2022
Keith Chisolm	DEQ ESC Program Administrator DEQ SWM Program Administrator	March 2024 Finished course, attempting test soon
Matthew Ryan	DEQ Dual Combined Administrator	In Process*
Matthew Parker	DEQ Dual Combined Administrator	In Process*

*Currently finishing up required coursework prior to testing.