



Agenda



- CVCC's MS4 Program
- Impacts of Stormwater Runoff
- TMDLs
- Illicit Discharges
- Pollution Prevention



MS4 Stormwater Regulations

WHY?

Federal Clean Water Act



WHO?

Virginia Laws and Regulations

MS4 General Permit

Construction General Permit

Stormwater Management Program

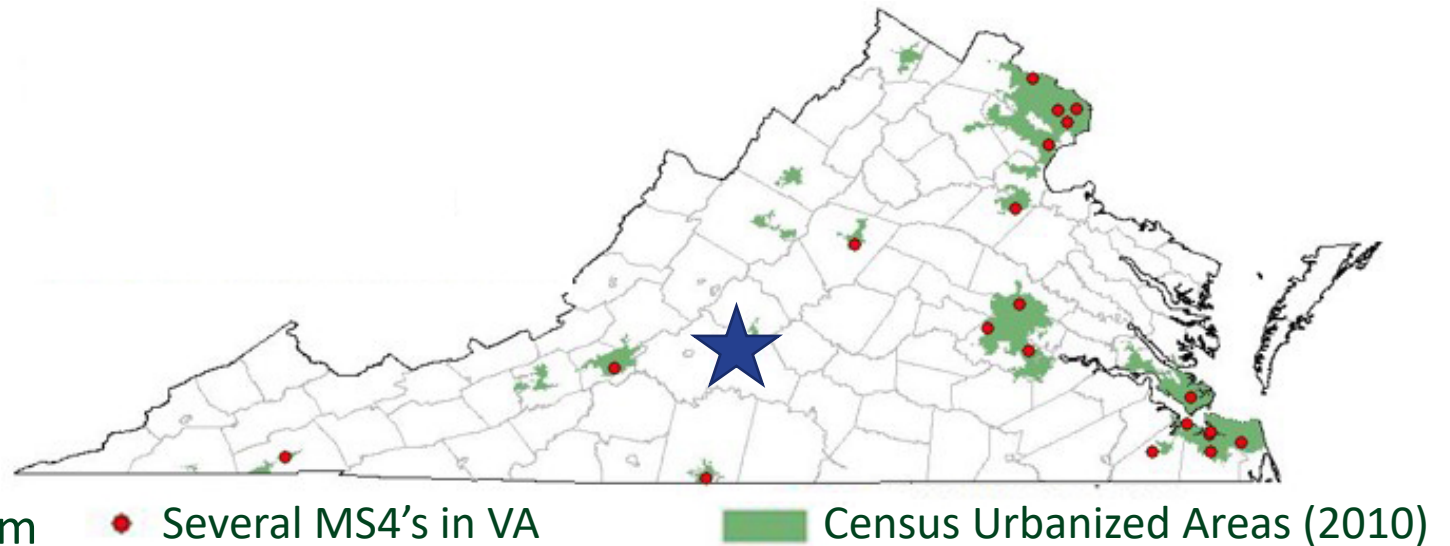
Erosion and Sediment Control Program

WHERE?

Municipal Separate Storm Sewer System (MS4)

General Permit Holders

➤ Cities, counties, towns, federal and state facilities



Municipal Separate Storm Sewer System (MS4)

- Collects and conveys stormwater
 - Potential to convey pollutants downstream
 - Ultimately leads to a point discharge at a natural drainage way (outfall)
- Activities/operations draining to outfalls are regulated if within a Census Urbanized Area (MS4 Area)



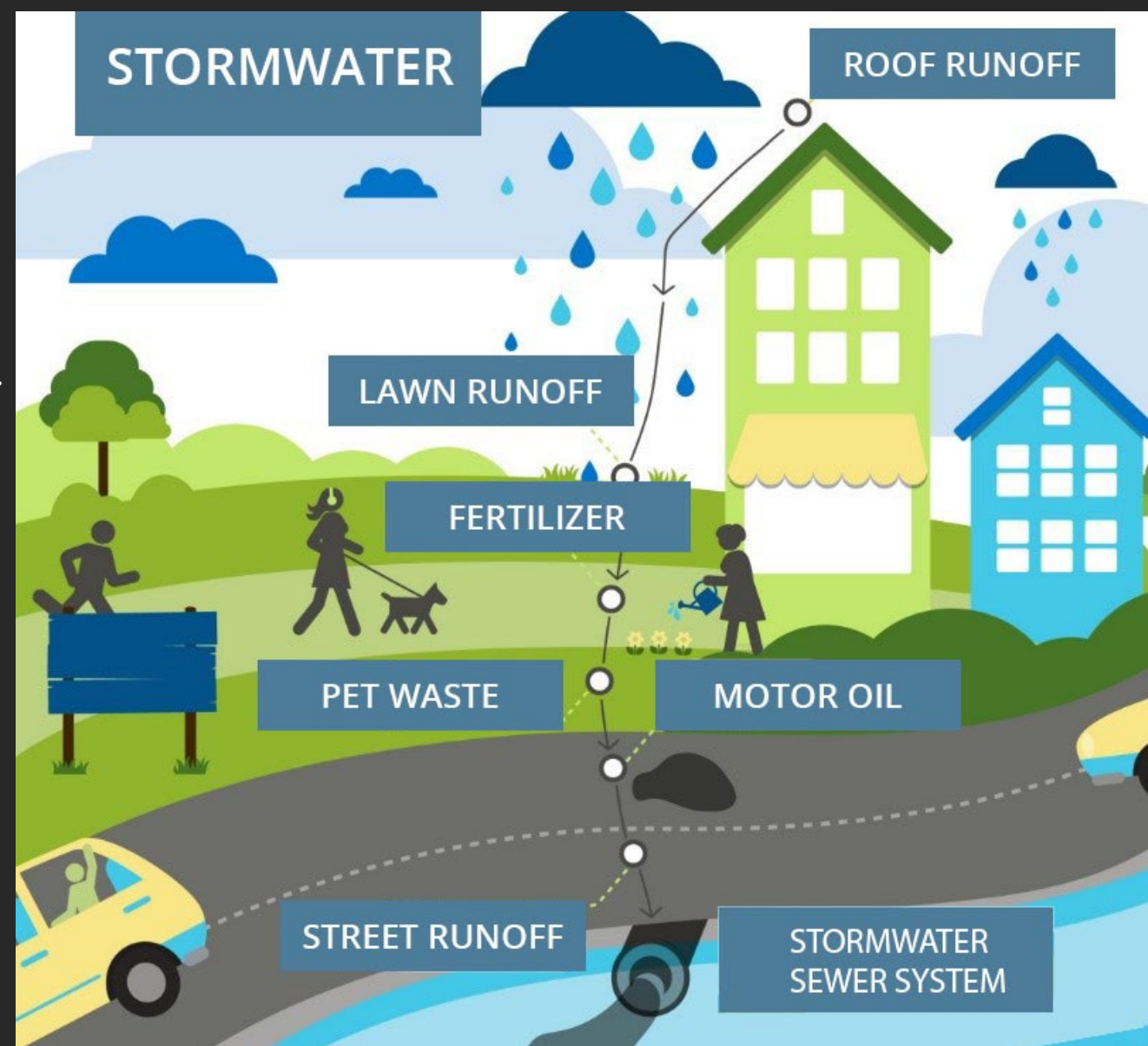
MS4 General Permit

Requires the operator to:

“... develop, implement, and enforce a MS4 Program designed to reduce the discharge of pollutants from the regulated small MS4 to the maximum extent practicable ...”

Maximum Extent Practicable

- Ensures compliance to water quality standards if the MS4 Program:
 - Addresses Minimum Control Measures with Best Management Practices (BMP) implementation
 - Structural and nonstructural BMPs
 - Addresses Special Conditions for Total Maximum Daily Loads (TMDLs)





STORMWATER RUNOFF PICKS UP SEDIMENT AND POLLUTANTS AFTER A RAINFALL.



SEDIMENT & POLLUTANT LADEN RUNOFF FLOWS INTO STORM SEWER SYSTEMS.



STORM SEWER INLETS DRAIN DIRECTLY INTO OUR LOCAL WATERBODIES.



OUR LOCAL WATERBODIES FLOW INTO THE CHESAPEAKE BAY AND TO THE OCEAN.

Impacts of Stormwater Runoff

Pollutants such as sediment and others adversely affect the health of our local creeks, streams, rivers, wetlands, reservoirs and the Chesapeake Bay.

Total Maximum Daily Load (TMDL)

TMDL is a plan (pollution diet) that establishes the maximum amount of a pollutant a waterbody can hold and meet water quality standards.

Waste Load Allocation (WLA) is the quantity of the pollutant (sediment, nitrogen, phosphorous, bacteria, chloride, PCB etc.) that may be discharged.

Waterbodies are tested and those that do not meet water quality standards are given impairments for the pollutant(s) of concern (POC).

MS4s are assigned a WLA for the POC and must meet annual reductions requirements per a TMDL Action Plan



How Sediment Impacts Virginia's Waterways

Sediment from construction sites, bare areas and streambank erosion:

- Clogs fish gills causing death
- Creates a muddy bottom unsuitable for spawning beds
- Reduces visibility for fish to locate prey
- Decreases water depth resulting in an increase of temperature causing fish to relocate
- Stunts plant growth due to reduced light penetration
- Interferes with navigation, flood control, recreation and fishing industries



Chesapeake Bay TMDL

The Chesapeake Bay TMDL requires a reduction of the Pollutants of Concern (POC) which are nitrogen, phosphorous and sediment.

The Chesapeake Bay TMDL Action Plan addresses the POC reductions and meets the Waste Load Allocation (WLA).



Sediment as a Pollutant



Many Virginia waterways are designated as impaired for sediment.

Pollutant sources of sediment are stream channel erosion and land disturbance activities.



Effects of Fertilizers on the Environment

Nitrogen and Phosphorous in fertilizers cause algae blooms in waterbodies.

Algae create toxins makes waterbodies unsafe for swimming and unhealthy for human and wildlife consumption.



Nitrogen and Phosphorous as Pollutants

Fertilizer applied to lawns and agriculture runoff into our local waterbodies and into the ocean...



...causing harmful algal blooms.

Nutrient Management Plan



NMPs are used as a resource for planning the quantity and timing of turfgrass nutrient application based on sound agronomic practices to reduce the amount of nutrients that ultimately negatively affect waterbodies.

MS4s must develop and implement Nutrient Management Plans (NMP) for the application of fertilizers.

NMPs address only the nutrient management of turf grass, including athletic fields.

NMPs must be revised following major renovation or other changes to maintenance practices occur and every three years.



Bacteria as a Pollutant

Improperly disposed of animal waste and human waste from sanitary overflows, leaking sewer lines, failing/unmaintained septic systems, urban stormwater runoff, livestock, pet and wildlife waste cause high levels of bacteria (E.coli) in waterbodies.

Excessive bacteria makes water bodies unsafe for human contact. People swimming in bacteria rich waters may experience a fever, diarrhea, abdominal cramps, chest pain or hepatitis.

Local Bacteria TMDL

CVCC directly discharges into a tributary of the James River.

The James River is designated as an impaired waterway because of bacteria.

Pollutant sources of bacteria are wildlife, livestock, pet waste and sanitary sewer overflows.

CVCC educates the public on how to reduce food sources accessible to urban wildlife.



Chloride as a Pollutant

Best management practices are needed to control the migration of salt stockpiles, brine spills and to ensure excess amounts of salt and brine containing chloride are not applied.

Excessive amounts of chloride are toxic to humans, aquatic life, wildlife and negatively effect infrastructure such as bridges, soil structure, vegetation and water quality.



PCB as a Pollutant

Polychlorinated biphenyls (PCB) are toxic substances found in industrial products and chemicals that cause adverse health effects in humans, animals, fish and plants.

Sources of PCBs can be contaminated soils, landfills and poorly maintained hazardous waste containment associated with the handling or storing of PCB materials such as electrical transformers, motor oil, oil-based paint, plastics and fluorescent light ballasts made prior to 1979.

A storm event can wash PCB containing liquids or sediment into a waterway and deposit the PCB laden water or sediment along streambanks. During the next storm event the streambank can erode and contaminate further downstream soils, plants and animals. Animals and plants store PCBs in their tissues and contaminate soils and water during decomposition.



Illicit Discharge

Any discharge that enters the storm drain system or a natural drainage way that is not composed entirely of stormwater.

Upon detecting an illicit discharge, spill or an improper disposal report to the Facilities Department on campus immediately.



What IS an Illicit Discharge

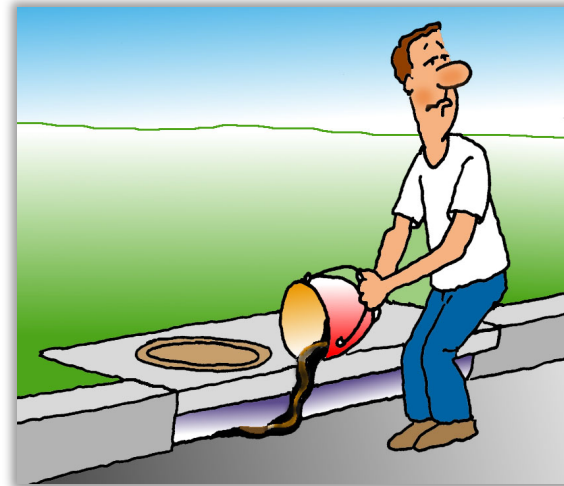
- Measurable flow from a storm drain during dry weather containing pollutants;
- Discharges with a unique frequency, composition, and mode of entry into the storm drain system;
- Caused when the sewage disposal system interacts with the storm drain system; and
- Discharges of pollutants from specific source areas.

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 |

Ignorance, Neglect, Accidents and Lack of Care

- Storm drain systems connect directly to our natural waterways. Storm drains do not connect to a water treatment plant.
- Neglecting vehicle or equipment maintenance and proper cleaning.
- Storing pollutant laden materials or chemicals outdoors.
- Personal investment in stewarding the environment is important for future generations.



Prohibition of Illicit Discharges

Student Conduct Policies

The administration of each community college is authorized by the State Board for Community Colleges to impose appropriate penalties, including expulsion from the college, for student conduct which tends to discredit or injure the college.

The Virginia Community College System guarantees to students the privilege of exercising their rights of citizenship under the Constitution of the United States without fear of prejudice. The rights of students have been violated.

Each individual is considered a member of the college community. Membership in the college community entails adherence to the college's standards and regulations governing conduct. Members should refrain from illicit activities unless clearly necessary. Fairness will be maintained depending upon the

<u>Source/Discharge Type</u>	<u>Elimination Authority</u>
Intentional by Student	→ Student Handbook
Intentional by Faculty/Staff	→ Standards of Conduct for Employees
Staff During Daily Operations	→ Good Housekeeping/Pollution Prevention Manual
Contractor Operations	→ Contract Language

appropriate to the college's standards. Guidelines will be established when it is necessary to impose other penalty.

- *Federal, state and local laws apply on campus.*
- *Students who are dismissed must reapply to the college. Readmission is not assured.*
- *Students may be subject to disciplinary action for misconduct on campus or at college sponsored events or activities.*
- *Disciplinary action by the college is not a criminal process, and the rules of evidence and the double jeopardy doctrine do not apply to student discipline.*
- *Disciplinary action may also be initiated when a student is reported to college officials for conduct prejudicial to the academic or other functions of the college.*
- *Records of all matters of student misconduct will be filed through the office of the Dean of Student Success (DSS) with the exception of cases handled at the instructor level, and those involving matters of the law, which may be filed through the Campus police office.*

Observation and Reporting Discharges

To report an illicit discharge, spill or an improper disposal email facilities@centralvirginia.edu or call the Facilities Department at **434.832.7736**.

For more information visit CVCC's stormwater website at <https://centralvirginia.edu/Facilities-Management>



Lawn Areas



Impervious Surfaces



Stormwater Outfall Pipes



Stormwater Facilities



Natural Waterways

What is NOT an Illicit Discharge



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 |
| • Individual residential car washing | • Street wash water |
| • Noncommercial fundraising car washes if the washing uses only biodegradable, phosphate-free, water-based cleaners | • Other activities generating discharges identified by the department as not requiring VPDES authorization |

* Discharges or flows from fire-fighting activities need only be addressed where they are identified as significant sources of pollutants to surface waters.



Looks like an Illicit Discharge but is NOT

- Sheen similar to petroleum spill, but actually a natural bacteria.
- Substance is bacteria if it fractures into small platelets when disturbed.
- Substance is petroleum if it swirls and reforms itself when disturbed.





HOW YOU CAN HELP KEEP WATERBODIES CLEAN...

- Limit landscape additives such as lime & potash only in amounts needed & at appropriate times especially never before a rain event.
- Properly store & dispose of chemicals. Quickly clean-up spilled chemicals & properly dispose of the materials used to clean-up spills.
- Pick-up pet waste & properly dispose in the trash.
- Never dump anything down storm drains.
- Place litter & cigarette butts in proper receptacles.
- Utilize recycling programs.
- Promptly repair vehicle & equipment leaks.
- Wash vehicles at a commercial car wash instead of in a driveway or parking lot.
- Properly dispose of household waste items.

Thank you on behalf of...



John Rocha Jr. (Facilities Supervisor)

Lewis Bryant (Director of Facilities and Finance)