Virginia Tech Site & Infrastructure Development MS4 Public Education and Outreach Plan

2019

Virginia Tech 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). Site and Infrastructure Development seeks to educate and inform Virginia Tech faculty, staff, students, and campus visitors about stormwater management and the health of local waterways and to comply with Section II B 1 of 9VAC25-890-40. Site and Infrastructure Development implements a Public Education and Outreach Program (PEOP) on stormwater impacts. The PEOP aims to:

- Increase awareness of stormwater issues and initiatives by educating the University and surrounding community about stormwater impacts including: detecting illicit discharges, controlling stormwater runoff at construction sites during and after construction, and working to prevent pollution from municipal operations;
- Increase accessibility to stormwater information, including proper disposal/spill clean-up procedures for those on campus and throughout the surrounding community; and
- Implement a program that targets audiences most likely to have significant stormwater impacts.

Through campaigns conducted over the course of the MS4 permit cycle, target audiences will have multiple opportunities to learn about the high-priority water quality issues of the region in several different ways.

Target Audiences

Virginia Tech On-Campus Students – 11,000

Virginia Tech Off-Campus Students – 21,000

Virginia Tech Faculty/Staff – 3,000

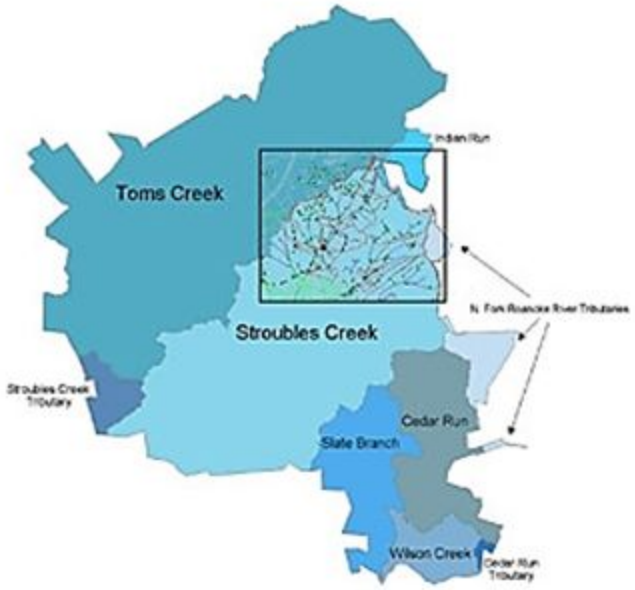

Figure 1. Major surface flow watersheds subdivided based on urban infrastructure data

Stroubles Creek

The Stroubles Creek watershed is located in Montgomery County, Virginia. Listed as VAW-N22R, HUC 05050001 by the EPA, it encompasses the majority of the Town of Blacksburg. It serves as a tributary to the New River, which eventually flows north into the Kanawha River. The Kanawha then flows to the Ohio River, which flows to the Mississippi River, before finally discharging into the Gulf of Mexico. Stroubles Creek has been considered impaired since 2002. The three high-priority issues are listed as follows: Sediment, Animal Waste, and Trash.

a. Sediment

Stroubles Creek, which runs through the Virginia Tech campus, is considered impaired by the DEQ and must satisfy TMDL requirements for sediment. Sediment enters Stroubles Creek through exposed soil on construction sites, along with erosion from pedestrians and maintenance vehicle traffic. Upstream urbanization, stream channelization, and livestock access have resulted in significant sediment loading to Stroubles Creek, causing benthic macroinvertebrate community impairment. VT Site & Infrastructure Development (SID) works in cooperation with the other members of the Stroubles Creek Improvement Partnership (SCIP) in order to continue reducing sediment loading to Stroubles Creek. Relevant community involvement efforts are listed below:

Time Frame & Media Employed	Target Audience	Rationale
Advertised The Big Plant (leading up to March 30th, 2019)	Virginia Tech On-Campus Students, Virginia Tech Off-Campus Students, Virginia Tech Faculty/Staff	Planting native species of trees expands the already present ecosystem, and helps to hold the soil in place and reduce erosion.
VT Facilities Arbor Day (April 24th, 2019)	Virginia Tech On-Campus Students, Virginia Tech Off-Campus Students, Virginia Tech Faculty/Staff	Planting native species of trees expands the already present ecosystem, and helps to hold the soil in place and reduce erosion.

General In-Class Presentations (February 25, 2019) and (April 8, 2019)	Virginia Tech On-Campus Students, Virginia Tech Off-Campus Students, Virginia Tech Faculty/Staff	Speakers from Site & Infrastructure Development talk about our MS4 program and the effect it has on all three issues: erosion, animal waste and trash.
Media Materials: Facebook (year-round)	Virginia Tech On-Campus Students, Virginia Tech Off-Campus Students, Virginia Tech Faculty/Staff	The SID Facebook periodically shares informational articles pertaining to erosion and runoff, as well as dates and times of upcoming community events.

More information can be found at https://vtechworks.lib.vt.edu/handle/10919/81783

b. Animal Waste

Waste from waterfowl at the Duck Pond, pets, and cows in the agricultural pastures contribute to the E. coli impairment in Stroubles Creek. Animal waste is a large, known source of greenhouse gases, especially from the methane and nitrous oxide it produces. Weather events, such as storms, are often responsible for loading the waterways with pollutants from runoff. Within this runoff, we can find high levels of fecal coliform. Animal and pet waste is the main contributor of fecal coliform. Relevant community involvement efforts are listed below:

Time Frame & Media Employed	**Target Audience**	**Rationale**
VT Dining Table Cards (2018-2019 School Year)	Virginia Tech On-Campus Students; Students/faculty that eat on campus.	Spreading awareness for why it is important for people to pick up after their pets can encourage the habit of picking up after pets.

Pet Waste Stations (year-round)	Virginia Tech On-Campus Students, Virginia Tech Off-Campus Students, Virginia Tech Faculty/Staff that walk on or around campus	These stations serve as a place to get a bag to properly dispose of pet waste. The year round signage also serves as a reminder to pick up after pets.
General In-Class Presentations (February 25, 2019) and (April 8, 2019)	Virginia Tech On-Campus Students, Virginia Tech Off-Campus Students, Virginia Tech Faculty/Staff	Speakers from Site & Infrastructure Development talk about our MS4 program and the effect it has on all three issues: erosion, animal waste and trash.
Steppin' Out (August 2 & 3, 2019) (Annual event)	Virginia Tech On-Campus Students, Virginia Tech Off-Campus Students, Virginia Tech Faculty/Staff who attend this event during the summer	Steppin' Out encompasses many different aspects of environmental conscientiousness. One main message we advertise is pet waste clean up. We promote this further by giving out biodegradable pet waste bags.

c. Trash

Trash is capable of travelling throughout the world's rivers and oceans before accumulating on beaches or in gyres, like the Great Pacific Garbage Patch. The trash harms habitats, transports chemical pollutants, threatens aquatic life, and interferes with human water uses. It was noted in the VT 2016 PEOP that trash, including Styrofoam, plastic bags, receipts, and cigarette butts are the most common pollutants from the student population entering into Stroubles Creek. The EPA regards plastic trash as the most harmful to the environment. It is often consumed by birds and fish, bioaccumulating toxic chemicals in their tissues, and filling their stomachs, leading them to starvation. Relevant community involvement efforts are listed on the following page:

Time Frame & Media Employed	Target Audience	Rationale
Stream Clean Up Program (year-round)	Virginia Tech On-Campus Students, Virginia Tech Off-Campus Students, Virginia Tech Faculty/Staff	The Stream Clean Up Program is a separate program that we advertise to those in the Blacksburg area. Teams sign up and receive a portion of the stream that they are responsible for cleaning three times each year. This removes trash from the streams.
Sponsoring Periodic Duck Pond Clean Ups (year-round)	Virginia Tech On-Campus Students, Virginia Tech Off-Campus Students, Virginia Tech Faculty/Staff	By working with on-campus organizations, such as SGA, we provide the necessary materials for them to host clean-up events. This in turn limits the amount of improperly disposed trash.
General In-Class Presentations (February 25, 2019) and (April 8, 2019)	Virginia Tech On-Campus Students, Virginia Tech Off-Campus Students, Virginia Tech Faculty/Staff	Speakers from Site & Infrastructure Development talk about our MS4 program and the effect it has on all three issues: erosion, animal waste and trash.
Media Materials: Facebook (year-round)	Virginia Tech On-Campus Students, Virginia Tech Off-Campus Students, Virginia Tech Faculty/Staff	The SID Facebook periodically shares informational articles on issues pertaining to trash and littering, as well as dates and times of upcoming community events.

Virginia Polytechnic Institute and State University Addendum to MS4 Education and Outreach Plan:

More Information

These accounts are used to promote stormwater and environmentally related events, and to update the student body and greater Blacksburg area of programs and initiatives regarding stormwater issues.

- SID Facebook https://www.facebook.com/hokiestormwater/?ref=br_rs
- SID Website https://www.facilities.vt.edu/permits-inspections/stormwater-management/ms4-program.html
- Contacts:
    - Stormwater Compliance Manager: Chuck Dietz
        - Email: charlid@vt.edu
        - Office: 540-231-1788
    - MS4 Program Administrator: Katelyn Kast
        - Email: katelyn5@vt.edu
        - Office: 540-231-3716

Additional Strategies for Public Education and Outreach

- Steppin' Out: Steppin' Out is a two-day street fair held in Downtown Blacksburg. Steppin' Out features over 250 artists and crafts, as well as non-profit organizations. Participation in this event would include handing out stormwater brochures, bookmarks, door hangers, etc. Interaction with community members through EnviroScape demonstrations and fielding general questions about stormwater helps to build awareness of water resources and pollution prevention techniques.
    - Potential Audience: All Target Audiences

- Earth Week: Each year the Environmental Coalition at Virginia Tech brings an Earth Week celebration to campus. Some of the events include environmental speakers and tree plantings to celebrate our Earth and raise environmental awareness throughout campus. Interacting with campus community members through EnviroScape demonstrations and fielding general questions about stormwater helps to build awareness of water resources and pollution prevention techniques.
    - Potential Audience: All Target Audiences

- Sustainability Week: Sustainability Week was created in 2007 to provide education and promote sustainability in practical and effective ways. The collaboration has benefitted

the town of Blacksburg and campus communities by providing programs to educate about sustainability. Interacting with community members through EnviroScape demonstrations and fielding general questions about stormwater helps to build awareness of water resources and pollution prevention techniques.
    - Potential Audience: Off-Campus Students and Faculty/Staff

- Table Cards: The same concept as the table cards that were geared toward picking up after your pets, these educational table cards are placed on each of the tables in on-campus dining halls. Table cards are an effective means to distribute educational material to residents and students about stormwater management issues and ways they can be solved.
    - Potential Audience: On-Campus Students and Off-Campus Students

- Dormitory Handouts: As students move into campus dormitories, there are informational handouts on their mattresses. By printing valuable pollution prevention information, SID can reach 100% of the on-campus resident community
    - Potential Audience: On-Campus Students

- Storm Drain Marking: Storm drain marking is a way to reduce nonpoint and point source pollution. Labeled storm drains become public education tools, reminding potential polluters, motorists, pedestrians, and area residents that stormwater runoff flows to local water bodies. A majority of the markers are in both Spanish and English, to account for inclusion and a wider audience.
    - Potential Audience: All Target Audiences

- Lyric Advertisement: The Lyric is a local theater in the heart of the Town of Blacksburg. This theater is popular among students and faculty alike. Before every show, the theater plays a slideshow of advertisements. These advertisements are open to all local businesses, event advertisements, etc. SID uses this opportunity to display relevant stormwater messages to a widespread audience.
    - Potential Audience: All Target Audiences

- Class Presentations: Virginia Tech has many classes that discuss water pollution, watershed management, best management practices, etc. Class presentations are an excellent way to get SID's role out to the University and also inform students and professors about ways they can get involved and help prevent stormwater pollution.
    - Potential Audience: All Target Audiences

- Training: Training is provided for Virginia Tech faculty and staff, including particular trade personnel along with dining services staff. Training is designed specifically for the individuals' job and includes guidance pertaining to their duties. Training will be provided to the target audience annually to increase awareness regarding the protection of water quality.
    - Potential Audience: Faculty/Staff

- Signage: Placement of signage in appropriate places around campus where potential pollutants could enter the storm systems. Signs would include instructions to not wash vehicles or equipment in certain areas along with not dumping wash water or waste water from cleaning operations.
    - Potential Audience: All Target Audiences