

MS4 ANNUAL REPORT 2012

VIRGINIA TECH
NPDES PHASE II: SMALL MS-4 (Municipal Storm Sewer System)
VPDES PERMIT NO. VAR 040049
ORIGINAL ISSUE: JULY 9, 2003
REISSUE DATE: JULY 9, 2008

Submitted to:

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Submittal Date: October 1st, 2012

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VIRGINIA TECH

**SMALL Municipal Separate Storm Sewer System
(MS4 Program)**

**Annual Report
For
July 1, 2011 through June 30, 2012**

VPDES PERMIT NO. VAR 040049

ORIGINAL ISSUE: JULY 9, 2003

Submitted to:

MS4 Program Permitting

Virginia Department of Conservation & Recreation

203 Governor Street, Suite 206

Richmond, Virginia 23219

Authorized Program Signature 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 this 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.



**Michael J. Coleman
Associate Vice President & Chief Facilities Officer
Virginia Tech**

9-27-12

MS4 Annual Report Response Submission 2012

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Minimum Control Measure No. 1: Public Education and Outreach on Stormwater Impacts.

BMP 1.1.1: Stormwater Website.

Goal: Provide information on Stormwater, Stormwater Management, Erosion and Sediment Control, and components of the MS4. In addition, to stormwater information, the website will provide links to activities that are related to improving stormwater quality to promote public education and links. The stormwater website also includes links to information regarding TMDLs.

Schedule and Evaluation: Virginia Tech has established an updated website and will update the content as necessary.

Responsible Party: Virginia Tech Site & Infrastructure Development.

Necessary Documents: Pages from Stormwater Website.

Measurable Goals: Complete success of this BMP will be seen upon student, staff, and faculty involvement in minimizing contamination of stormwater. Continue to modify and improve the website through user feedback. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: Pages from Stormwater Website.

Required Modifications: TBD. **Response:** The Site & Infrastructure Development website has undergone many changes this year. The entire site has been reformatted to improve user navigation and to improve the structure of information. The site is divided into the six minimum standards. The public outreach page offers household tips for pollution prevention as well as a link to our Facebook page. The public involvement page gives information about upcoming and past events we have participated in, as well as a comment box that allows the public to give us feedback regarding the Annual Report, local stormwater issues, etc. The website also includes pages on TMDLs, who to call to dispose of hazardous waste, and links to the Virginia Tech recycling and sustainability websites. There are also links to the Virginia Department of Conservation and Recreation (DCR), Virginia Department of Environmental Quality (DEQ), Environmental Protection Agency (EPA), and the Virginia Stormwater BMP Clearinghouse. The web address is as follows:
www.sid.vt.edu.

In order to reach more of the Virginia Tech community, SID has developed a Facebook page. Many of our target audiences are joining the Facebook community and this medium has been a useful tool in reaching the student population at Virginia Tech. Currently, the Facebook page has 25 "likes" and we hope to see this number continue to grow. Individuals and organizations

can both “like” the page and, in doing so, will receive SID’s continual updates. Some of the organizations that have “liked” our page are: The Environmental Coalition at Virginia Tech, VDOT, Waste Management, and Keep Virginia Beautiful. The Facebook page has been a great way for us to post stormwater-related pictures, videos, articles, and fun facts. People are able to “like” these posts as well as provide comments on them. SID has utilized the site to develop partnerships, conduct surveys, and spread awareness of public outreach events/issues.

After an outreach event with the Children’s Museum of Blacksburg, SID developed a video to highlight the event and advertise the Enviroscape demonstrations given at the event. The short video is a fun way to convey information about SID and stormwater management. The video is currently posted on the Virginia Tech YouTube site and has 175 views to date.

BMP 1.1.2: Water Conservation Practices.

Goal: Provide annual reports of water consumption to the public.

Schedule and Evaluation: Virginia Tech will continue to provide water consumption reports on an annual basis during each permit cycle. Status: On-going.

Responsible Party: Virginia Tech Facilities Operations.

Necessary Documents: Quarterly water usage invoices and annual reports and repair logs.

Measurable Goals: Complete success of this BMP will be seen upon finalization of the development of a water, storm, and sanitary sewer system model to better quantify the consumption and impact of water in these three systems. Finalize the university’s sanitary sewer infiltration and inflow (I&I) study to identify, prioritize, and eliminate future sanitary sewer capacity issues and potential over-flows. Continue to seek opportunities to implement water conservation projects on campus. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: Annual water consumption summary and Water System Repair Log.

Required Modifications: TBD.

Response: Virginia Tech continues to manage water consumption by repairing water lines and improving plumbing fixtures. According to the Blacksburg, Christiansburg, & VPI Water Authority, Virginia Tech consumed approximately 420,423 thousands of gallons of water from July 2011 to June 2012.

Virginia Tech Site & Infrastructure Development engaged the services of an engineering consultant to develop a basic water model for campus.

Virginia Tech, in conjunction with the Town of Blacksburg and the Sanitation Authority, performed an I&I study to determine the inflow and infiltration in the major trunk lines.

Documentation Provided:

- i. Water System Repair Log (June 28, 2011 – June 15, 2012)
- ii. Summary of water consumption
- iii. Sanitary Sewer System Repair Log (See BMP 3.2.4)
- iv. Stormwater System Repair Log (See BMP 3.3.1)

BMP 1.1.3: Proper Disposal of Hazardous Waste.

Goal: Provide information and training to university staff.

Schedule and Evaluation: Continue to post proper disposal methods information on website on a continuous basis during each permit cycle.
Status: on-going

Responsible Party: Virginia Tech Environmental Health and Safety.

Necessary Documents: Examples of Hazardous Waste Procedures and training material.

Measurable Goals: Continue to post disposal procedures and information on website for university staff. Continue providing training opportunities on their website for university staff and personal exposure and area monitoring to identify and quantify biological and chemical contaminants in the work environment. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: Location and Point of Contact for Training and hazardous waste disposal awareness documentation and summary.

Required Modifications: TBD.

Response: Environmental Health & Safety (EHS) currently provides a written plan for each of the university labs (chemical, radiological, and biological). EHS provides guidance on written plans as needed.

EHS contact information for training can be found on the EHS Website (www.ehss.vt.edu).

Documentation Provided:

- i. Sample Training Log: Laboratory Safety Class
- ii. Chemical Hygiene Plan

- iii. Hazardous Chemical Communication and Management Plan
- iv. Lead Hazard Control Program
- v. Hazardous Communication Plan for (Department) Template
- vi. Laboratory Inspection Checklist

BMP 1.1.4: Recycling and Trash Management.

Goal: Provide educational literature and information on an annual basis to the university.

Schedule and Evaluation: Continue to properly educate the university on recycling and trash management during each permit cycle. Status: on-going.

Responsible Party: Virginia Tech Facilities Services and Virginia Tech Environmental Health and Safety.

Necessary Documents: Documentation of events that focus on recycling and trash management and annual recycling achievements.

Measurable Goals: Continues to notify and reinforce the proper recycling and trash disposal plan to university community through a program that is available on the Office of Energy & Sustainability website (<http://www.facilities.vt.edu/sustainability/>) and Spectrum newspaper. Continue to provide recycling literature on the Virginia Tech Recycling website (<http://www.facilities.vt.edu/sustainability/recycle/>) for public access and post historical and up-to-date data on recycling efforts on their "sustainability" website for public education and outreach. Continue to support the annual "Y-Toss" that is implemented through the YMCA. This function is aimed at keeping the campus clean and reducing waste that is placed into our landfills by collecting items that would typically be "tossed" by residents leaving for the summer (<http://www.vtymca.org/Home.asp>). Continue to participate in an event titled, "RecycleMania!," where the university community is encouraged to recycle items that would normally be disposed of in a traditional manner (<http://facilities.vt.edu/physicalplant/depts.asp?value=recycling>). Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: Recycling and educational outreach documentation and summary.

Required Modifications: TBD.

Response: Virginia Tech Recycling continues to increase the amount of recycled material annually. Virginia Tech also continues to participate in the RecycleMania! Program. Results from the 2012 RecycleMania! Program as well as results from the campus recycling program has been provided.

Virginia Tech continues to offer information to help educate the community on recycling on the VT Recycle webpage (<http://facilities.vt.edu/bgh/recycle/>). A

link to the VT Recycle webpage can also be accessed through the Site & Infrastructure Development webpage.

Virginia Tech provides services for the proper disposal of waste such as chemical waste, radioactive waste, biological waste, regulated medical waste, batteries and monitors, fluorescent tubes and light ballasts, thermometers, and sharps. These services are provided through Environmental Health and Safety (EHS). Waste removal procedures and online pick-up forms are available on the EHS Website at www.ehss.vt.edu/programs/waste_removal. The various waste items EHS receives are stored appropriately in Virginia Tech's Materials Management Facility until they are shipped out with the appropriate Haz Mat Vendor for recycling and/or proper disposal. Refer to the Virginia Tech Recycling Rate Report for Calendar Year 2011 for YToss 2011 results.

More information regarding Virginia Tech's recycling efforts are available on the Virginia Tech Recycling website:
www.facilities.vt.edu/sustainability/recycle

Documentation Provided:

- i. Virginia Tech Recycling Rate Report for Calendar year 2011
- ii. Comprehensive Waste Management Plan for Virginia Tech dated July 15, 2011
- iii. Annual Report on Campus Sustainability at Virginia Tech – 2011
- iv. Recyclemania! 2012 Results
- v. Print out of EHS Battery and Computer Monitor Pickup Form
- vi. Print out of EHS Radioactive Waste Removal Form
- vii. Print out of EHS Regulated Medical Waste Removal Request Form

BMP 1.2.1: Partnership with Local Jurisdictions on Public Education.

Goal: Work with the Town of Blacksburg and to promote sustainability and public education.

Schedule and Evaluation: Continue to participate in local stakeholder meetings to extend public education on an annual basis during each permit cycle. Status: on-going.

Responsible Party: Virginia Tech Facilities Services.

Necessary Documents: Agendas and Sample presentations.

Measurable Goals: Continue to be active in the stakeholders meetings to promote sustainability and public education of stormwater issues. Continue to participate on the advisory committee for the Town of Blacksburg's Low Impact Development initiative. This committee meets periodically and was organized in late 2006. Continue to partner with the Town of Blacksburg for an annual Watershed Open House (second year completed in 2007) to educate the public. Seek additional methods to collaborate on outreach

opportunities. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: Agendas and sample presentations.

Required Modifications: TBD.

Response: Virginia Tech has joined with the Town of Blacksburg to hold a booth at the Blacksburg Farmer's Market for Sustainability Week 2012. This was to help educate the town and the University about sustainability issues and to get the community involved. The booth consisted of informational materials, displays, and children's activities. A student intern did two stormwater presentations for classes in the Biological Systems Engineering (BSE) Department. The purpose of the presentations was to raise awareness of Virginia Tech's Stormwater Management Program.

An employee of the Site & Infrastructure Development Department gave two presentations (one each semester) to an Urban Affairs and Planning Class . These presentations consisted of a field visit to some of the post-construction stormwater management facilities on campus as well as a presentation within the classroom setting. The same employee gave another presentation, with an emphasis on Virginia Tech's MS4 Program, during the Spring Semester to a class of students from the BSE Department.

Virginia Tech and the Town of Blacksburg have met approximately five times during the year to discuss collaborative public outreach initiatives. These meetings have served to collaborate on events such as Steppin' Out, Sustainability Week, and Greeks Giving Back.

On August 5-6, 2011, Virginia Tech Partnered with Town of Blacksburg at Steppin' Out to promote stormwater management awareness to local citizens and Virginia Tech Students. Items at the booth included watershed research, BMP and watershed maps, an Enviroscape display, posters with mitigation techniques, and stickers. The Department of Conservation of Recreation (DCR) supplied the Enviroscape as well as a few of the brochures and stickers.

On July 30, 2012 Site & Infrastructure Development gave a presentation to 13 six year olds at the Child Development Center for Learning & Research in Wallace Hall. The presentation included an Enviroscape demonstration, two games about the water cycle, and storm drain marking.

On August 3-4, 2012, Virginia Tech partnered with Town of Blacksburg at Steppin' Out to promote stormwater awareness to the community. Items at the booth included a Bioretention model, Enviroscape demonstrations, an aquatic entomology collection, children's activity books, and informational displays. It is estimated that approximately 150 people were reached during Steppin' Out 2012.

This year Site & Infrastructure Development purchased two Enviroscope Models in order to improve our public outreach and education efforts. These models will help us educate the youth in the community about stormwater pollution prevention.

This year, Site & Infrastructure Development, with the help of Facilities Operations, installed 21 pet waste stations around campus. These pet waste stations were installed in high traffic areas and near existing trash receptacles. Site & Infrastructure Development designed a sign for the pet waste stations that emphasized the effects that pet waste can have on waterways.

Documentation Provided:

- i. Event Calendar for Sustainable Blacksburg
- ii. Sustainability Week 2012 Article
- iii. Sustainability Week 2012 Event Calendar
- iv. Sustainability Week 2012 Photos and Narrative
- v. Steppin' Out Photos and Narrative (2011)
- vi. Steppin' Out Photos and Narrative (2012)
- vii. Stormwater Presentations
- viii. EPP Senior Studio final deliverables
- ix. Photos of Enviroscope models
- x. HD event Photos and Narrative
- xi. Pet Waste Station Installations Photos and Narrative

BMP 1.3.1: Pollution Prevention Plan.

Goal: Educate university staff on the existing Pollution Prevention Plan.

Schedule and Evaluation: Continue to develop annual training programs for university staff on proper pollution prevention and reduction measures during each permit cycle. All university projects greater than 1-acre in disturbed area are required to develop and maintain a project specific SWPPP onsite. *Virginia Tech acquires the VSMP permits and oversees the SWPPP and SWPPP inspections.* Status: on-going.

Responsible Party: Virginia Tech Environmental Health and Safety and Virginia Tech Facilities Services.

Necessary Documents: Educational outreach documentation.

Measurable Goals: Continuing to develop reoccurring annual training sessions for university staff and students to educate on the proper pollution prevention and reduction measures through the plan developed in response to HJR 453, 1997. EHS has implemented several programs in an effort to reduce pollution prevention on campus such as, (1) recycling, (2) environmental awareness programs, and (3) green engineering. Continue to implement a plan to detect potential sources of pollution at stormwater inlets and outfalls. Continue requiring that all university projects greater than 1-acre

in disturbed area develop and maintain a project specific SWPPP onsite. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: Educational outreach documentation.

Required Modifications: TBD.

Response: Virginia Tech continues to participate in recycling, environmental awareness programs, and green engineering. Information regarding recycling events on campus can be found under BMP 1.1.4

Virginia Tech received a Silver rating in the “Sustainability Tracking Assessment and Rating System” (STARS). STARS is a self-reporting system that measures the sustainability performance of colleges and universities. Stormwater-related submissions include efforts to improve snow and ice removal, maintaining native plants and wildlife habitats, continuing ‘Tree Campus USA’ campus forestry practices, and multiple transportation alternatives which mitigates runoff from vehicle contaminants.

In the Princeton Review’s “Guide to 322 Green Colleges”, Virginia Tech achieved the “Green Honor Roll” comprised of only 16 colleges that received the highest score. In 2009, the Board of Visitors approved “The Virginia Tech Climate Action Commitment Resolution,” which created the Office of Energy and Sustainability, established targets for the reduction of greenhouse gas emissions, emphasized energy efficiency, and committed the institution to pursue LEED Silver certification or better for all new construction and major renovation projects. Virginia Tech also achieved a 48 percent alternative transportation rate, a 36 percent recycling rate, and last year composted more than 300 tons of food waste.

Project Specific SWPPPs are provided under BMP 4.3.1.

Documentation provided:

- i. Virginia Tech Climate Action Commitment and Sustainability Plan “Status Report”
- ii. Documentation for STARS
- iii. Documentation for Green Honor Roll

BMP 1.3.2: Campus Outreach through Table Cards.

Goal: Educate university students and staff about Stormwater issues and pollution prevention.

Schedule and Evaluation: Continue to develop and distribute table cards for educating the campus on stormwater issues and proper pollution prevention during each permit cycle. Status: on-going.

Responsible Party: Virginia Tech Site & Infrastructure Development

Necessary Documents: Educational outreach documentation.

Measurable Goals: Continuing to develop and distribute table cards routinely throughout the permit cycle to educate students, staff, and faculty on stormwater and MS4 issues. Table cards will be placed in all dining facilities at least one time throughout the permit cycle. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: Educational outreach documentation.

Required Modifications: TBD.

Response: Virginia Tech distributed table cards during the 2010-2011 school year. The table cards have the potential to reach 19,000 people dining at Virginia Tech Facilities. Currently, Virginia Tech is working on new designs for these table cards and determining printing costs in order to print according to the Virginia Tech Student Services specifications.

Virginia Tech currently has reservations at each campus dining hall for this upcoming 2012-2013 school year.

Documentation Provided:

- i. Example of table cards to be used in dining facilities.

BMP 1.4.1: Environmental Compliance.

Goal: Continue ensuring all environmental permitting is obtained.

Schedule and Evaluation: Continue to ensure all permits are obtained and compliance is met on annual (as needed) basis during each permit cycle.
Status: on-going.

Responsible Party: Virginia Tech Environmental Health and Safety and Virginia Tech Facilities Services.

Necessary Documents: VSMP Permits and other related permits.

Measurable Goals: Continue to ensure that Virginia Tech remains in compliance with all the necessary permits and complies with them. Continue to monitor the effectiveness of this BMP on a routine basis. Status: on-going.

Items to be Reported in Annual Report: VSMP Permits and other related permits.

Required Modifications: TBD.

Response: Virginia Tech obtains and maintains all necessary permits required for the MS4, Industrial, Agricultural, and Construction activities that occur on campus. Provided is a copy of permits and registration statements for the required permits. For further information, contact Rob Lowe (rlowe@vt.edu) for Industrial permits, Dwight Paulette (Kentland@vt.edu) for Agricultural permits, and Site & Infrastructure Development for Construction permits.

Due to extensive project durations and project changes during design and construction, Virginia Tech is currently reassessing the site evaluations for projects which hold a VAR10 Construction Permit.

In addition, Virginia Tech is currently seeking funding for an updated site evaluation of the Virginia Tech Power Plant which holds a VAR05 Industrial Permit.

Documentation Provided:

- i. VAR04 Permit
- ii. VAR040049 Registration Statement for Virginia Tech MS4
- iii. Department of Conservation and Recreation Permit Fee Form
- iv. VAR050508: Virginia Tech Industrial Permit for Power Plant
- v. VAR050760: Industrial Permit for Virginia Tech Airport
- vi. VPG100013: Animal Feeding Operations Permit
- vii. VSMP VAR10 Coverage Letters from Active Construction Sites

BMP 1.5.1: Funding and Staffing Needs for MCM-1.

Goal: Develop of a funding scope and achieve funding from the State for new staffing and infrastructure improvements to reach the goals of MCM-1.

Schedule and Evaluation: Continue to seek funding opportunities on an annual basis during each permit cycle. *Seek to hire an MS4 Coordinator within the next year. (See Below).*

Responsible Party: Virginia Tech Facilities.

Necessary Documents: TBD.

Measurable Goals: Continue to seek methods for reaching the goals of MCM-1 through existing departmental budgets. No alternative funding sources have been identified to-date. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: TBD.

Required Modifications: TBD.

Response: Virginia Tech continues to seek methods for reaching the goals of MCM-1 through existing departmental budgets. No alternative funding

sources have been identified. Interns are utilized to help with improving Virginia Tech's Stormwater Management Program. These student interns monitor erosion and sediment control measures on campus construction sites, assist with design components, and assist with various components of the VAR04 and VAR10 general permits. As of June 2011, a full time MS4 Coordinator was hired. This person is in charge of coordinating and compiling the annual MS4 Report components.

Minimum Control Measure No. 2: Public Involvement and Participation.

BMP 2.1.1: Stormwater Website.

Goal: Provide information on Stormwater, Stormwater Management, Erosion and Sediment Control, and components of the MS4. In addition to stormwater information, the website will provide links to the annual report for the MS4 program, SWPPP inspection reports, reports for illicit discharges, and inspections for BMPs.

Schedule and Evaluation: Virginia Tech is updating the website that will be available by July 19, 2010. The information will continue to be added to the website as it becomes available.

Responsible Party: Virginia Tech Facilities Services.

Necessary Documents: MS4, MS4 Annual Report, Virginia Tech Annual Standards and Specifications, Inspection Reports, Illicit Discharge Reports, and other associated documents.

Measurable Goals: Complete success of this BMP will be seen upon student, staff, and faculty involvement in minimizing contamination of stormwater. Continue to modify and improve the website through user feedback. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: Print outs from the webpage and agendas of activities.

Required Modifications: TBD.

Response: The Virginia Tech MS4 Program webpage was recently updated (See BMP 1.1.1 for more information) and now includes a comment box to allow for public comment and feedback on Virginia Tech's MS4 Program.

The Virginia Tech stormwater management webpage contains a Vault link which is used by project personnel to access project information. Virginia Tech is currently evaluating its methods of public access to all inspection reports during the coming year.

Please go to www.sid.vt.edu for information regarding the recently added public comment box.

BMP 2.1.2: Stream Clean-Up and Other Areas.

Goal: Continue to monitor linear feet of stream cleaned on annual basis and clean roadways/parking lots after major university events.

Schedule and Evaluation: Continue to develop a report that delineates the total linear feet and tonnage of clean-up on campus on an annual basis during each permit cycle. Status: on-going.

Responsible Party: Virginia Tech Facilities Services.

Necessary Documents: Stream clean-up and roadway/parking lot cleaning records.

Measurable Goals: Accomplish at the minimum two of the following activities to eliminate the potential impacts on the stormwater system and turf areas: 1) Stream clean event campus wide; 2) Site & Infrastructure Development adopts Stroubles Creek and maintains it yearly; 3) Student organizations help clean Lane Stadium after events; 4) Students and Faculty team up with VT Recycling; 5) Household hazardous waste pickup at the end of the spring semester; 6) Environmental Coalition leads clean-up after events. Continue working on the development of an accurate account of stream cleaning footage and, in conjunction with the TMDL Implementation Plan, investigate stream bank buffers. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: Linear footage/volume of stream, parking lot, and roadway records.

Required Modifications: TBD.

Response: Virginia Tech continues to minimize trash and debris from entering Stroubles Creek by collecting trash and debris from roadways, parking lots, and grassy areas after sporting events. Roadways and parking lots are cleaned by a street sweeper before and after each sporting event. Students and Faculty volunteer with VT Recycling to help maintain the program. A copy of the street sweeper log has been provided under BMP 6.2.1.

Virginia Tech is dedicated to keeping Stroubles Creek clean and accomplished the following activities to ensure trash and pollutants did not reach the waterways:

1. Student organizations help clean Lane Stadium after large-scale events
2. Students and Faculty team up with VT Recycling
3. Environmental Coalition leads clean-up after events like Relay for Life

The Stroubles Creek Restoration Project was started in order to fulfill two best management practices (BMPs): stream restoration and establishment of forested riparian buffers. These BMPs were identified in the Stroubles Creek TMDL IP as a means to reduce sediment loading. This project applied the following techniques: livestock exclusion, livestock exclusion with bank reshaping and replanting, and livestock exclusion with natural channel design. A sign outlining these procedures was posted in June 2010 as a means of public education and awareness.

During the 2011 Fall Semester, Site & Infrastructure Development assisted a student group with a class project for an Environmental Policy and Planning (EPP) Senior Studio. The students' project researched how the new stormwater regulations would affect localities across the state. SID coordinated conference calls with Roy Mills (VDOT), Doug Fritz (DCR), and Craig Whittaker (Giles County) as well as offered technical guidance if needed. The final products of the project were a fact sheet, class presentation, and research paper.

Documentation Provided:

- i. Student Stormwater Regulations Project Deliverables.
- ii. Photos and Narrative of Stroubles Creek Restoration Project.

BMP 2.1.3: Storm Drain Marking.

Goal: Mark all storm drain inlets with Duracast markers.

Schedule and Evaluation: Mark 8 to 10 inlets by November 2010 and 8 to 10 additional inlets by June 2011. Continue to mark inlets as maintenance crews are able to apply markers.

Responsible Party: Virginia Tech Site & Infrastructure Development.

Necessary Documents: Markers, photographs, and map(s) of the inlet locations.

Measurable Goals: Continue to monitor for illicit discharges at the outfalls. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: Proofs of Storm Drain Markers and map of storm drains.

Required Modifications: TBD.

Response: Since the last annual report, Virginia Tech has purchased additional Duracast Storm Drain Markers. A total of 390 storm drains have been marked from July 1, 2011 – June 30, 2012. A print out of the storm drain markers has been provided as well as a map of storm drains that have been marked.

On March 31, 2011, as part of the Big Event at Virginia Tech, a group of seven volunteers marked 158 storm drains in four hours. The volunteers also filled up one 39-gallon trash bag with several types of trash including cans, plastic bottles, gum wrappers, and plastic bags. The volunteers also filled a container with cigarette butts that were picked up during the event. The volunteers covered approximately 89,800 square feet or almost 20 acres across the Virginia Tech campus.

Documentation Provided:

- i. Copy of Storm Drain Marker
- ii. Big Event Narrative and Photos
- iii. Big Event Tally Sheet
- iv. Big Event summary worksheet
- v. Map of Stormwater Inlets that have been marked.

BMP 2.2.1: Stakeholder Meeting.

Goal: Continue to review and comment on all capital projects on campus to address erosion and sediment control and stormwater related issues prior to construction.

Schedule and Evaluation: Continue to review and comment on all capital projects as they are developed during each permit cycle. Status: on-going.

Responsible Party: Virginia Tech University Design and Construction.

Necessary Documents: Project comment record and summary.

Measurable Goals: Continue to review and provide feedback on all Capital Projects to ensure that stormwater and Erosion & Sediment Control and SWM issues are addressed in an effective manner. Continue to work with the TMDL Implementation Plan for Stroubles Creek that traverses campus in two areas. The TMDL stakeholders consist of DCR, Town of Blacksburg, Virginia Tech staff and concerned citizens. Continue developing Environmental Impact Reports for areas along campus that have been identified as sensitive for review and approval by the regulating agencies. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: Project comment record and summary.

Required Modifications: TBD.

Response: Virginia Tech continues to review and provide feedback on all Virginia Tech University Design and Construction projects to ensure that stormwater and Erosion & Sediment Control issues are addressed in an effective manner.

BMP 2.3.1: Funding and Staffing Needs for MCM-2.

Goal: Develop of a funding scope and achieve funding from the State for new staffing and infrastructure improvements to reach the goals of MCM-2.

Schedule and Evaluation: Continue to seek funding opportunities on an annual basis during each permit cycle. Seek to hire a MS4 Coordinator within the next year. Status: See Below.

Responsible Party: Virginia Tech Facilities Services.

Necessary Documents: TBD.

Measurable Goals: Continue to seek methods for reaching the goals of MCM-2 through existing departmental budgets. No alternative funding sources have been identified to-date. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: TBD.

Required Modifications: TBD.

Response: Virginia Tech continues to seek methods for reaching the goals of MCM-2 through existing departmental budgets. As of June 2011, a full time MS4 Coordinator was hired. This person is in charge of coordinating and compiling the annual MS4 Report components.

Minimum Control Measure No. 3: Illicit Discharge Detection and Elimination.

BMP 3.1.1: Comply with Existing Regulations.

Goal: Track notices of violation for surface discharges and develop methods of elimination.

Schedule and Evaluation: Continue to detect and eliminate illicit discharges on a reoccurring basis during each permit cycle. Status: on-going.

Responsible Party: Virginia Tech Environmental Health and Safety and Virginia Tech Site & Infrastructure Development.

Necessary Documents: Copy of TMDL; Notifications to downstream MS4s.

Measurable Goals: Continue to track this BMP and make recommendations for elimination for surface discharges. Seek additional methods for detecting, recording, and eliminating illicit discharges. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: Copy of TMDL; Notifications to downstream MS4s.

Required Modifications: TBD.

Response: Outfall Reconnaissance Inventory Information is provided under BMP 3.2.3. Illicit Discharges are investigated when reported.

Virginia Tech purchased a Photometer to aid in water quality testing, outfall reconnaissance inventory investigations, and IDDE investigations.

Documentation Provided:

- i. Upper Stroubles Creek Watershed TMDL
- ii. Photographs of Photometer.
- iii. Letter to Town of Blacksburg
- iv. Letter to VDOT

BMP 3.2.1: Inventory Regulated Stormwater Outfall Locations.

Goal: Continue to update existing comprehensive database and mapping and identify stormwater outfalls and develop annual maintenance and inspection program for tracking illicit discharges.

Schedule and Evaluation: Continue to update and identify stormwater outfalls on an annual basis or on an as-needed basis during each permit cycle. Status: on-going.

Responsible Party: Virginia Tech Facilities.

Necessary Documents: Survey data, map(s), and photographs.

Measurable Goals: This BMP is measured by continuing to provide maintenance on all stormwater outfalls, as well as pipes and structures, on campus. Continue updating maintenance forms to address and mitigate concerns and corrective actions taken as required. Continue developing and calibrating a stormwater model that will analyze the entire campus system and keep a record of illicit discharges and actions taken. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: Map of outfalls, inspection reports, and illicit discharge inventory report and summary.

Required Modifications: TBD.

Response: Maps of all known outfalls have been provided. No new outfalls have been added.

Documentation Provided:

- i. Outfall Reconnaissance Inventory Maps

BMP 3.2.2: Inspection of Stormwater Outfalls for Dry Weather Discharge.

Goal: Inspect all stormwater outfalls on an annual basis during dry weather and identify illicit discharges and mitigation techniques.

Schedule and Evaluation: Continue to inspect and track all stormwater outfalls on an annual basis during dry weather conditions or as-needed basis during each permit cycle. Inspect at least 25% of the outfalls annually and inspect critical areas as designated by BMP 3.2.2 yearly. Status: on-going. Substantial Completion: December 2009.

Responsible Party: Virginia Tech Facilities.

Necessary Documents: Inspection Reports, Photographs, and other documents as necessary.

Measurable Goals: This BMP will be measured by visually inspecting, on a routine basis, and documenting any unusual indicators at the outfalls. This BMP will require documentation and mitigation of any evident illicit discharges that are encountered in a timely manner. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: Inspection reports, dry weather discharges, and mitigation methods.

Required Modifications: TBD.

Response: Inspection reports of outfalls are available in the Virginia Tech Site & Infrastructure Development Office.

Documentation Provided:

- i. 2012 Outfall Reconnaissance Reports

BMP 3.2.3: Locate Priority Areas or Operations for Illicit Discharge.

Goal: Development of a map delineating the priority areas on campus with unique pollution prevention schemes.

Schedule and Evaluation: Continue to update and identify priority areas, mapping, and documentation on annual or as-needed basis during each permit cycle. Status: on-going. Substantial Completion: November 2009.

Responsible Party: Virginia Tech Environmental Health and Safety and Virginia Tech Facilities Services.

Necessary Documents: Map and report of critical areas susceptible to illicit discharges.

Measurable Goals: This BMP is measured by monitoring and assessing campus to identify areas of immediate concern that require a unique pollution prevention scheme. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: Priority area map and documentation summary.

Required Modifications: TBD.

Response: Virginia Tech continues to identify critical areas susceptible to illicit discharges. These areas are being documented by mapping and taking photographs.

Documentation Included:

- i. Maps and Photos

BMP 3.2.4: Inspect and Repair Sanitary Sewer to Prohibit Illicit Discharges.

Goal: Inspect and document existing problems with the sanitary sewer system and develop mitigation strategies.

Schedule and Evaluation: Continue to inspect and track all problems within the sanitary sewer system on a reoccurring basis during the permit cycle. Status: on-going (performing flow monitoring).

Responsible Party: Virginia Tech Facilities Operations

Necessary Documents: Sanitary Sewer System Repair Log.

Measurable Goals: This BMP will be measured by continuing to expand and improve the field data on the sanitary sewer system by assessing (visually) conditions of the pipe and manhole structures for defects that could lead to illicit discharges from the system. Virginia Tech has purchased eight area velocity flow meters that will assist the staff with quantifying the volumes of sewage at critical points along campus, which will aid in determining areas the need immediate attention to prevent potential illicit discharges. A campus-wide Inflow and Infiltration study (I&I) has begun, which will assist the university in accurately identifying illicit discharge prone areas. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: Inspection and repair reports and summaries.

Required Modifications: TBD.

Response: A log sheet of repairs and maintenance performed on the sanitary sewer system has been provided dated June 28, 2011 thru June 13, 2012.

Documentation Provided:

- i. Sanitary Sewer System Repair Log

BMP 3.2.5: Maintain In-House 24/7 Repair/Response Crew for Sanitary Sewer Issues.

Goal: Continue to respond to sanitary sewer problems and update utilities infrastructure database in a timely manner.

Schedule and Evaluation: Continue to respond to sanitary sewers issues as they arise and update utility database on a reoccurring basis during each permit cycle. Status: on-going.

Responsible Party: Virginia Tech Facilities Operations.

Necessary Documents: Maintenance and repair reports.

Measurable Goals: This BMP will be measured by continuing to report and address all sanitary sewer problems in a timely manner to prevent exposure of the sewage to campus. Continue to document all overflow issues on campus and delineate the location of the problem and the corrective measures. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: Maintenance and repair summary.

Required Modifications: TBD.

Response: Facilities Crews are on call in the evenings and on weekends in case of an emergency sanitary sewer issue. If an issue arises, Virginia Tech Police Department notifies the crew of the issue, and they will fix the issue. See documentation provided under BMP 3.2.4 for sanitary sewer repairs.

BMP 3.3.1: Trace and Remove Illicit Discharge.

Goal: Continue to evaluate current program for improvements.

Schedule and Evaluation: Continue to report, trace, and respond to illicit discharges annually during each permit cycle. Status: on-going.

Responsible Party: Virginia Tech Environmental Health and Safety and Virginia Tech Facilities Services.

Necessary Documents: Stormwater System Repair Log and Summary of Illicit Discharges Reports.

Measurable Goals: This BMP will be measured by continuing to monitor the effectiveness of the established procedure for reporting and tracing illicit discharges and enforcement policies. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: Stormwater System Repair Log and Summary of Illicit Discharges Reports.

Required Modifications: TBD.

Response: Through the Outfall Reconnaissance Inventory inspections and online reporting, Virginia Tech is able to trace illicit discharges. Individuals can report spills and illicit discharges on the Environmental Health and Safety webpage: www.ehss.vt.edu/report_issue.

Site & Infrastructure Development is currently developing various Standard Operating Procedures (SOPs); one of which is for Outfall Reconnaissance Inventory (ORI) and Illicit Discharge Detection and Elimination (IDDE). This SOP will assist in the investigation, trace, and removal of illicit discharges.

Documentation Provided:

- i. Summary of illicit discharges
- ii. Stormwater System Repair Log

BMP 3.4.1: Illicit Discharge Reporting by Staff and Students.

Goal: Continue to publicize Environmental Health & Safety contact numbers for illicit discharge reporting.

Schedule and Evaluation: Continue to provide reporting options on a daily basis for university community during each permit cycle. Status: on-going.

Responsible Party: Virginia Tech Environmental Health and Safety.

Necessary Documents: Contact numbers and reporting documentation.

Measurable Goals: This BMP will be measured by continuing to utilize EHS as the primary contact for reporting discharges that are witness by staff and students. Seek alternative methods for raising awareness. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: Documented reports of illicit discharges and mitigation efforts.

Required Modifications: TBD.

Response: Summary reports of illicit discharges have been provided Appendix D. The summary includes a description of the illicit discharge as well as how the issue was corrected. Through the use of table cards, Virginia

Tech is able to educate Students and Staff on how to report illicit discharges to Environmental Health and Safety and the importance of reporting issues. Individuals can also report spills and illicit discharges on the Environmental Health and Safety webpage: www.ehss.vt.edu/report_issue. This website link and further information regarding illicit discharges are available on the recently modified Site and Infrastructure Development website (www.sid.vt.edu).

Documentation Provided:

- i. Example of Table Cards
- ii. EHS Illicit Discharge Reporting webpage

BMP 3.5.1: Funding and Staffing Needs for MCM-3.

Goal: Develop of a funding scope and achieve funding from the State for new staffing and infrastructure improvements to reach the goals of MCM-3.

Schedule and Evaluation: Continue to seek funding opportunities on an annual basis during each permit cycle. Status: on-going.

Responsible Party: Virginia Tech Facilities Services.

Necessary Documents: TBD.

Measurable Goals: Continue to seek methods for reaching the goals of MCM-3 through existing departmental budgets. No alternative funding sources have been identified to-date. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: TBD.

Required Modifications: TBD.

Response: Virginia Tech continues to seek methods for reaching the goals of MCM-3 through existing departmental budgets. Funding was provided for students to perform Illicit Discharge Detection and Elimination. Funding was secured to purchase water quality sampling equipment.

Minimum Control Measure No. 4: Construction Site Stormwater Runoff.

BMP 4.1.1: Provide Guidance to Project Managers in University Planning, Design, and Construction Services on Appropriate ESC and SWM Requirements.

Goal: Continue to provide Project Managers of university projects with clear guidance on ESC and SWM requirements.

Schedule and Evaluation: Continue to provide ESC and SWM guidance on all university projects as the projects are developed during each permit cycle. Pre-construction meetings are held for all projects requiring ESC and SWM submittals. Status: on-going.

Responsible Party: Virginia Tech Site & Infrastructure Development.

Necessary Documents: Virginia Tech Annual Standards and Specifications and other documentation as determined.

Measurable Goals: This BMP will be measured by continuing to review and advise project managers on university projects to ensure completeness of the Erosion & Sediment Control measures and Stormwater compliance in accordance with Virginia Tech Annual Standards and Specifications. The Virginia Tech Annual Standards and Specifications for Erosion and Sediment Control and Stormwater Management are located on the Virginia Tech Stormwater Management website for access by Project Managers and the public.

http://www.facilities.vt.edu/pdc/project/esc_swm.asp. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: Inspection reports, information about land disturbing projects, and other documentation deemed necessary.

Required Modifications: TBD.

Response: The Virginia Tech Annual Standards and Specifications for Erosion and Sediment Control and Stormwater Management are located on the Stormwater Management website for access by Project Managers and the public. (http://www.facilities.vt.edu/pdc/project/esc_swm.asp) A copy of the VT Annual Standards and Specifications is available on the Virginia Tech Site & Infrastructure Development website (www.sid.vt.edu). A list of current/proposed projects is included in Appendix E.

Several employees of Site and Infrastructure Development gave a presentation to SKANSKA, a company involved in construction projects on campus. The presentation covered ESC and SWM requirements for construction projects.

Documentation Provided:

- i. List of Current/Proposed Projects
- ii. Approval of VT Annual Standards and Specifications for ESC & SWM
- iii. VT Annual Standards and Specifications for ESC & SWM
- iv. Virginia Tech ESC Presentations to SKANSKA

BMP 4.2.1: Construction Site Inspections for ESC and SWM Compliance.

Goal: Continue to provide ESC and SWM plan review, inspections, and compliance.

Schedule and Evaluation: Projects under construction or reviewed by DCR prior to July 1st will remain with DCR. Projects starting on and after July 1st will be reviewed by Virginia Tech Site Development Department. This is performed throughout the duration of the project. Virginia Tech is working through the budget process to designate two positions for these responsibilities. Status: on-going.

Responsible Party: Virginia Tech University Design and Construction.

Necessary Documents: Sample Inspection reports, Notices, Land-disturbing activities and other associated documents.

Measurable Goals: This BMP will be measured by continuing to accompany DCR evaluation of the Virginia Tech Annual Standards and Specifications. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: Inspection report summary, annual report, summary of compliance issues, and associated documents.

Required Modifications: TBD.

Response: Virginia Tech University Design and Construction Department has been issued the responsibility by the Department of Conservation and Recreation to inspect all of the campus projects as of July 1st, 2009. Stormwater Pollution Prevention Plan inspection reports for campus projects are available in the Virginia Tech Site & infrastructure Development Office.

Documentation Provided:

- i. ESC-SWM Inspection Report Template
- ii. SW Construction Site Inspection Report Template
- iii. Summary of Total Number of Inspections performed each year
- iv. Summary of Total Number of Repeat Violations Per Project Per Year
- v. Refer to BMP 4.1.1 for additional Information.

BMP 4.3.1: Construction Site Operators Need to Control Waste at Construction Sites to Avoid Adverse Impacts to Water Quality.

Goal: Continue conducting periodic inspections for each construction project to ensure that water quality impacts are not present.

Schedule and Evaluation: Continue with periodic inspections in accordance with VSMP permitting, where applicable. Require all university projects greater than 1-acre in disturbed area to develop and maintain a SWPPP on-site during each permit cycle. Status: on-going.

Responsible Party: Virginia Tech University Design and Construction.

Necessary Documents: Sample Inspection reports and SWPPP Narratives.

Measurable Goals: This BMP will be measured by continuing to conduct periodic inspections for each construction project on campus, whether being constructed by in-house forces or convention contractors in accordance with VSMP permitting. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: Inspection summaries and updated SWPPP summaries.

Required Modifications: TBD.

Response: A copy of each project's SWPPP and SWPPP inspection reports for all projects on campus that require a VSMP Permit are available at the Site and Infrastructure Development Department upon request.

BMP 4.4.1: Funding and Staffing Needs for MCM-4.

Goal: Virginia Tech is seeking positions that will perform the ESC/SWM/SWPPP inspections, reviews, and approvals. Currently, Virginia Tech is using outside staff to assist with these inspections. Develop of a funding scope and achieve funding from the State for new staffing and infrastructure improvements to reach the goals of MCM-4.

Schedule and Evaluation: Continue to seek funding opportunities on an annual basis during each permit cycle. Status: on-going.

Responsible Party: Virginia Tech Facilities Services.

Necessary Documents: TBD.

Measurable Goals: Continue to seek methods for reaching the goals of MCM-4 through existing departmental budgets. No alternative funding sources have been identified to-date. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: TBD.

Required Modifications: TBD.

Response: As of June 2011, Virginia Tech has hired a full-time ESC Program Administrator to oversee the erosion and sediment control measures on construction sites around campus. This person is also in charge of coordinating and compiling Virginia Tech's Annual Standards and Specifications.

Virginia Tech continues to seek methods for reaching goals of MCM-4 through existing departmental budgets. Through the use of student employees, Virginia Tech is able to work towards accomplishing this goal; however, no alternative funding sources have been identified.

Minimum Control Measure No. 5: Post-Construction Stormwater Management in New Development and Re-Development.

BMP 5.1.1: Watershed Master Plan for Future Development and Re-Development.

Goal: Ensure that all development and redevelopment projects fall under the guidelines of the Master Plan for campus. Finalize the development of a campus-wide stormwater management master plan for existing and future build-out conditions.

Schedule and Evaluation: Continue to provide input on all development and redevelopment in accordance with the Master Plan during each permit cycle. Status: on-going.

Responsible Party: Virginia Tech University Design and Construction.

Necessary Documents: Approved Master Plan.

Measurable Goals: This BMP will be measured by following the approved Master Plan that addresses the impacts to the existing watershed in conjunction with the future build-out plan. The Master Plan has identified specific BMP's and LID techniques along the portions of campus marked for future development as well as design guidelines. Continue investigating the feasibility of retrofitting existing facilities and sites with better BMP's and LID techniques. Stormwater management sub-models are being developed as part of the SWM review process. Gain approval from DCR on stormwater management master plan. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: TBD.

Required Modifications: TBD.

Response: Virginia Tech continues development in accordance with the current Master Plan set forth in 2006. Provided is the 2006 Master Plan along with the concept overlay for the Corporate Research Center that was not included in the current Master Plan, along with 2009 Amendments and the HABB1 Precinct addition.

Documentation Provided:

- i. 2006 VT Master Plan

BMP 5.2.1: O&M Program for Structural Stormwater Control.

Goal: Match inventory of controls with O&M program and develop checklists for inspectors to ensure consistency and completeness during inspections.

Schedule and Evaluation: Continue to develop checklists by the end of year of the second permit cycle. Continue inspecting and implementing corrective actions to adhere to O&M program during each permit cycle.
Status: on-going

Responsible Party: Virginia Tech Site & Infrastructure Development.

Necessary Documents: Inventory report, inspector checklists, and O&M documents.

Measurable Goals: Continue to update the comprehensive survey of the campus' stormwater facilities in an effort to further develop an accurate stormwater model for the university. This BMP will be measured by continuing to conduct thorough inspections of the facilities in an effort to address any deficiencies or required maintenance (i.e. sedimentation removal, debris clean-up, etc.). As part of the overall stormwater modeling plan, routine inspections will be scheduled (wet/dry) to assess the functionality of the facility and make recommendations for repairs or maintenance. To better facilitate the incorporation of inspection reports and data with the university GIS and stormwater model, inspection sheets will be developed in a manner consistent with the requirements of the databases. Continue documenting storm events on an occurrence basis. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: TBD.

Required Modifications: TBD.

Response: The O&M program was modified this year. New map pages, inspection reports, and O&M summaries for each Stormwater Management Facility (SWMF) on campus have been developed.

Site and Infrastructure development has developed an SOP for inspections of SWMF around campus. This SOP will help to ensure that proper inspection procedures are followed. This will in turn help to ensure that the SWMFs around campus continue to function as designed.

Documentation Provided:

- i. Summary of O&M for all BMPs
- ii. SWMF Inspection Forms
- iii. Outfall Reconnaissance Inventory Field Sheet
- iv. Outfall Reconnaissance Inventory (Manhole)
- v. Sanitary Sewer Pipe Replacement Checksheet

BMP 5.2.2: Stormwater Management Facilities Mapping.

Goal: Continue to update existing facility inventory database and mapping showing maintenance on facilities, stormwater conveyance and control structures, and receiving surface water bodies. Status: on-going. Substantial Completion: September 2009. Continual updates: on-going.

Schedule and Evaluation: Continue to update facility inventory database on a monthly basis and project-by-project basis during each permit cycle.

Responsible Party: Virginia Tech Site & Infrastructure Development.

Necessary Documents: Project as-build documentation.

Measurable Goals: This BMP will be measured by continuing to update and improve the comprehensive survey of the stormwater management facilities and channels for campus for integration into a stormwater model and GIS geo-database. The university is currently in the process of redeveloping the stormwater management methods on campus to ensure that the university meets the current DCR SWM Regulations and addresses the needs of the watersheds. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: SWM Mapping.

Required Modifications: TBD.

Response: A map of the Stormwater Management facilities is available in the Virginia Tech Site & Infrastructure Development Office. This map is updated as new BMP's are added.

Documentation Provided:

- i. Existing BMP Location Map with corresponding maps of individual BMP's

BMP 5.2.3: Inspections of Stormwater Management Facilities.

Goal: Inspect Stormwater facilities on an annual basis and identify any maintenance issues.

Schedule and Evaluation: Continue to inspect facilities on an annual basis along with the maintenance inspections per O&M handbook. Inspect at least 25% each year. Status: on-going.

Responsible Party: Virginia Tech Site & Infrastructure Development.

Necessary Documents: Inspection Reports, Photographs and other documents as necessary.

Measurable Goals: This BMP will be measured by inspecting on a routine basis and documenting any necessary maintenance required. This BMP will require documentation and remedy of any needed maintenance. Continue to monitor the effectiveness of this BMP on a regular basis.

Items to be Reported in Annual Report: SWM Inspection Reports.

Required Modifications: TBD.

Response: The majority of BMPs have been inspected for maintenance required and proper functionality. Virginia Tech is currently working incorporating the BMP inspections into the current work order system. This system will better allow for communication and tracking of BMP inspections and maintenance.

Inspection reports are available in the Site & Infrastructure Development office upon request.

Documentation Provided:

- i. BMP Inspection Reports

BMP 5.3.1: Green Parking.

Goal: Evaluate and install, where applicable, grass pavers in different areas along campus.

Schedule and Evaluation: Continue to evaluate opportunities for grass paver installation on a project-by-project basis during each permit cycle. Will utilize as opportunities present themselves. Status: on-going.

Responsible Party: Virginia Tech Facilities Services.

Necessary Documents: Photographs of existing green parking.

Measurable Goals: This BMP will be measured by adhering to the Master Planning efforts and review/assign different BMP's and LID techniques that may include grass pavers, if applicable, to pertinent areas. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: Photographs of existing green parking.

Required Modifications: TBD.

Response: Virginia Tech offers green parking where applicable. Due to high traffic flow in certain areas, the areas available are minimal. Photographs of green parking on campus have been provided.

Documentation Provided:

- i. Photographs of VT Green Parking at Architecture Demonstration and Research Building
- ii. Photographs of VT Green Parking at War Memorial Gym
- iii. Photographs of VT Green Parking by Shanks Hall

BMP 5.4.1: Staffing and Funding Needs for Program.

Goal: Evaluate and request funding for program support and staffing requirements.

Schedule and Evaluation: Continue to evaluate opportunities for funding during each permit cycle. Status: on-going.

Responsible Party: Virginia Tech Facilities Services.

Necessary Documents: TBD.

Measurable Goals: Continue being proactive in responding to reported issues around campus through internal funding from their own budget allocation on an annual basis. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: Funding status.

Required Modifications: TBD.

Response: Facilities Services is proactive in responding to reported issues around campus, which is funded from their own budget allocation on an annual basis. No alternative funding sources have been identified that would supply additional support for this program.

BMP 5.5.1: Funding and Staffing Needs for MCM-5.

Goal: Develop a funding scope and achieve funding from the State for new staffing and infrastructure improvements to reach the goals of MCM-5.

Schedule and Evaluation: Continue to seek funding opportunities on an annual basis during each permit cycle. Status: on-going.

Responsible Party: Virginia Tech Facilities Services.

Necessary Documents: TBD.

Measurable Goals: Continue to seek methods for reaching the goals of MCM-5 through existing departmental budgets. No alternative funding sources have been identified to-date. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: TBD.

Required Modifications: TBD.

Response: Virginia Tech continues to seek methods for reaching the goals of MCM-5 through existing departmental budgets. No alternative funding sources have been identified.

Minimum Control Measure No. 6: Pollution Prevention/Good Housekeeping for Virginia Tech Facility Operations.

BMP 6.1.1: Spill Prevention, Control, and Countermeasure Plan.

Goal: Maintain documentation of existing, and publicly accessible SPCC Plans for petroleum storage on main campus and research farms adjacent to campus.

Schedule and Evaluation: Continue to update policies and procedures as necessary. Status: on-going.

Responsible Party: Virginia Tech Environmental Health and Safety.

Necessary Documents: Contact information for Policy and Procedures for Spill Prevention, Control and Countermeasures.

Measurable Goals: This BMP will be measured by maintaining the current required EPA SPCC Plan that covers all petroleum storage on the main campus as well as research farms adjacent to campus. EHS currently maintains full documentation of each individual SPCC Plan for all pertinent sites on and off Virginia Tech's main campus. EHS inspects and tracks spills on a per occurrence basis. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: Contact information for plans within Virginia Tech.

Required Modifications: TBD.

Response: Virginia Tech currently maintains SPCC Plans; a list of these can be found at Environmental Health and Safety during normal business hours. Spill Control Supplies are stocked on site and EHS provides training for people that have petroleum tanks. Virginia Tech also has a Spill Contractor to utilize in the event of a spill. When a spill is reported, EHS gathers as much information as possible from the person reporting the spill. EHS then

dispatches someone with spill supplies to evaluate the spill and perform the necessary spill response procedures. If additional resources are needed, the responders request additional help. If needed, EHS can call-in outside help and contact regulatory authorities if required.

Documentation Provided:

- i. Emergency Contact List
- ii. Preparedness Statement
- iii. General Response Procedure
- iv. Sample inspection forms
- v. Photographs of Spill Prevention

BMP 6.1.2: Educate Staff on Vehicle and Equipment Washing.

Goal: All departments that own vehicles or conduct equipment and container washing are educated of the policy.

Schedule and Evaluation: Continue to educate university staff on an annual basis during each permit cycle. Status: on-going.

Responsible Party: Virginia Tech Site & Infrastructure Development and Environmental Health & Safety.

Necessary Documents: Education and participation records.

Measurable Goals: This BMP will be measured by educating the Physical Plant Grounds Department regarding storm sewer inlet protection for vehicle wash-down areas. Fleet Services continues to provide wash down areas within their facility and connected to the sanitary sewer system via floor drains and oil-water separator. Continue enforcing that all approved wash-down areas must connect and drain into the sanitary sewer system. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: Education, participation, and inspection summaries.

Required Modifications: TBD.

Response: Site & Infrastructure Development (SID) is currently working with Environmental Health and Safety (EHS) to develop stormwater pollution prevention training. This training will be incorporated into the EHS's existing training rotation. The training will show employees how to prevent stormwater pollution when performing job tasks. Another area of the training will involve helping employees identify illicit discharge indicators and giving them information on how to report illicit discharges through mediums like business cards and brochures,

BMP 6.1.3: Personnel Training.

Goal: Record annual training schedules and attendance for university staff.

Schedule and Evaluation: Continue to document training schedules and attendance on an annual basis during each permit cycle. Status: on-going.

Responsible Party: Virginia Tech Site & Infrastructure Development and Environmental Health & Safety.

Necessary Documents: Training and participation records.

Measurable Goals: This BMP will be measured by developing a training schedule to educate university staff by demonstrating the effects of pollution prevention on water quality through a stormwater model. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: Training and participation summary.

Required Modifications: TBD.

Response: Site & Infrastructure Development (SID) is currently working with Environmental Health and Safety (EHS) to develop stormwater pollution prevention training. This training will be incorporated into the existing EHS existing training rotation. The training will show employees how to prevent stormwater pollution when performing job tasks. Another area of the training will involve helping employees identify illicit discharge indicators and giving them information on how to report illicit discharges through mediums like business cards and brochures.

BMP 6.2.1: Parking Lot and Street Cleaning.

Goal: Track maintenance program and clean parking lots/roads on an annual basis.

Schedule and Evaluation: Continue maintaining and cleaning parking lots and roadways on a periodic basis and immediately after significant events (i.e. football games, commencement, etc.) during each permit cycle. Status: on-going.

Responsible Party: Virginia Tech Facilities Operations.

Necessary Documents: Maintenance and cleaning records.

Measurable Goals: This BMP will be measured by ensuring parking lots and roadways are maintained on a periodic basis and immediately after significant events on campus. Continue monitoring the parking lots and roadways on a daily basis between different departments that work around campus on a

daily basis. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: Maintenance and cleaning records and summary.

Required Modifications: TBD.

Response: Virginia Tech continues to maintain streets and parking lots by sweeping streets as needed as well as before and after sporting events. A log showing dates and locations of street sweeping has been provided. A total of approximately 39,000 pounds was collected from September 2011 through July 2012; this exceeds the amount from the previous reporting cycle. On football weekends, approximately 13,000 pounds was collected.

Documentation Provided:

i. Street Sweeper Log

BMP 6.2.2: Road Maintenance and Repair.

Goal: Educate all departments that handle road maintenance about policies and procedures.

Schedule and Evaluation: Continue to educate university staff on an annual basis during permit cycle. Status: on-going.

Responsible Party: Virginia Tech Facilities Services.

Necessary Documents: Education and participation records.

Measurable Goals: This BMP will be measured by educating departments regarding storm sewer inlet protection for repairing and marking roads. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: Education and participation records.

Required Modifications: TBD.

Response: Site & Infrastructure Development (SID) is currently working with Environmental Health and Safety (EHS) to develop stormwater pollution prevention training. This training will be incorporated into the existing EHS existing training rotation. The training will show employees how to prevent stormwater pollution when performing job tasks. Another area of the training will involve helping employees identify illicit discharge indicators and giving them information on how to report illicit discharges through mediums like business cards and brochures.

BMP 6.3.1: Storm Drain System Intake Cleaning.

Goal: Track maintenance program and clean storm sewer intakes on an annual basis.

Schedule and Evaluation: Continue maintaining and cleaning storm sewer intakes on an annual basis or immediately after identification of problem prone areas during each permit cycle. Inspect and clean at least 25% per year. Status: on-going.

Responsible Party: Virginia Tech Facilities Operations and Site & Infrastructure Development.

Necessary Documents: Maintenance and cleaning records.

Measurable Goals: This BMP will be measured by developing and maintaining a list of structures and pipe intakes that require attention (i.e. cleaning, repair, and etc.) and develop a mitigation plan for corrective action. Provide routine inspection and documentation on a routine basis. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: Maintenance and cleaning summary.

Required Modifications: TBD.

Response: Virginia Tech is working to perform storm drain system intake cleaning as much as possible. Utilities routinely clean the storm drains around campus. The Utilities Department has a vacuum truck that aids in the cleaning of storm drain inlets.

Documentation Provided:

- i. Photographs of Vacuum Truck

BMP 6.4.1: Hazardous Materials and Chemical Storage and Management.

Goal: Document locations and methods of hazardous material storage and inspect storage facilities annually.

Schedule and Evaluation: Inspect and monitor hazardous waste facilities on a monthly basis during each permit cycle. Status: on-going.

Responsible Party: Virginia Tech Environmental Health and Safety.

Necessary Documents: Inspection and monitoring records.

Measurable Goals: This BMP will be measured by inspecting hazardous waste facilities at least monthly and maintain an inspection report. Laboratories and chemical stock rooms are inspected on an annual basis and

recorded. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: Inspection and monitoring summary.

Required Modifications: TBD.

Response: Virginia Tech currently inspects hazardous waste facilities weekly and maintains a report for each respective facility. Laboratories and chemical stock rooms are inspected and recorded on an annual basis. Virginia Tech has built a Materials Management Facility for storage and proper disposal of hazardous materials.

Documentation Provided:

- i. Laboratory Inspections (Sample)
- ii. Waste Accumulation Weekly Inspection logs (Sample)
- iii. Photographs of Chemical Storage (In Lab)
- iv. Photographs of Chemical Storage (Disposal with Secondary Containment)

BMP 6.4.2: Salt Storage and Application.

Goal: Document application locations and methods of storage with annual inspections. If possible, reduce the amount of salt application.

Schedule and Evaluation: Document application areas and record winter application volumes during each permit cycle. Status: on-going.

Responsible Party: Virginia Tech Facilities Operations.

Necessary Documents: Application and location records.

Measurable Goals: Virginia Tech has partnered with the Town of Blacksburg to successfully construct a combined salt storage facility. This BMP will be measured by ensuring that the facility and any subsequent runoff from the salt storage will be collected and distributed into the sanitary sewer system. Continue to look at alternative methods to reduce salt application. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: Facility inspection and salt application records.

Required Modifications: TBD.

Response: Virginia Tech stores bulk salt in a building preventing rainwater from coming in contact with the stored salt. Provided is a spreadsheet that outlines the application and location of the salt and salt brine that was used on campus from December 2011 to March 2012.

Documentation Provided:

- i. Salt Application History Log

BMP 6.4.3: Oil and Antifreeze Recycling.

Goal: Document oil and antifreeze recycling amounts in accordance with program.

Schedule and Evaluation: Documentation on a daily basis (as required) during each permit cycle. Status: on-going.

Responsible Party: Virginia Tech Fleet Services Department.

Necessary Documents: Recycling summary.

Measurable Goals: This BMP will be measured by maintaining documentation of the volume of oil and antifreeze properly recycled annually. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: Recycling summary.

Required Modifications: TBD.

Response:

According to the Virginia Tech Recycling Rate Report for Calendar year 2011, the oil and antifreeze recycling rates are as follows:

- **Used oil:** 17.48 tons
- **Used oil filters:** 1.29 tons
- **Used Antifreeze:** 0.42 tons

BMP 6.5.1: Pesticides and Fertilizer Application.

Goal: Inspect facilities on an annual basis and record inspection results. Develop a database of all applicators that are EPA licensed. Maintain accurate and up-to-date applicator database.

Schedule and Evaluation: Inspection on an annual basis or as required during each permit cycle. Status: on-going.

Responsible Party: Virginia Tech Environmental Health and Safety.

Necessary Documents: Documentation of products and Certified Applicators.

Measurable Goals: This BMP will be measured by continuing to plant new trees and shrubs; renovating old landscaping sites; mowing and trimming campus turf; applying fertilizer and pesticides; pruning the campus collection

of trees and shrubs; and installing and maintaining over 200 perennial and annual flowerbeds in accordance with EPA application guidelines. Applicators, for different departments of campus, are certified and adhere to EPA guidelines and measures. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: Documentation of products and Certified Applicators.

Required Modifications: TBD.

Response: There are six groups on campus that are responsible for applying pesticides and fertilizers as needed: Agricultural Operations, Virginia Tech Athletics, Virginia Tech Golf Course, Virginia Tech Grounds Department, Peggy Lee Hahn Garden Pavilion, and Virginia Tech Recreational Sports. Each department is responsible for maintaining Certification for Applicators and a list of products used.

Site and Infrastructure Development is currently working with EHS to develop stormwater pollution prevention training to be incorporated into the current EHS training regimen. A Portion of the training will be used to remind Virginia Tech Facilities Services Personnel about the proper procedures when using fertilizers and pesticides.

Documentation Provided:

- i. List of Certified Applicators
- ii. Virginia Tech Agriculture Operations List of Products
- iii. Virginia Tech Athletic Department List of Products
- iv. Virginia Tech Golf Course List of Products
- v. Virginia Tech Grounds Department List of Products
- vi. Peggy Lee Hahn Garden Pavilion List of Products
- vii. Virginia Tech Recreational Sports List of Products

BMP 6.5.2: Maintenance of Landscaped Areas.

Goal: Track volumes of compost and mulch application.

Schedule and Evaluation: Track volumes on an application-basis during each permit cycle. Status: on-going.

Responsible Party: Virginia Tech Facilities Services.

Necessary Documents: Application Area Maps.

Measurable Goals: This BMP will be measured by inspecting and maintaining landscaped areas on a regular basis to prohibit the potential for soil erosion and debris entry into the stormwater sewer system. Continue to monitor and develop alternative methods to compost and mulch applications

and provide recommendations for action. Continue to monitor the effectiveness of this BMP on a routine basis.

Continue monitoring the conversion of 13 areas of campus (approximately 35 acres) from regularly maintained turf grass lawn to low maintenance native grass meadows and wildflowers in an effort to create biodiversity, aid stormwater management, and reduce fossil fuel use.

Items to be Reported in Annual Report: Application Area Maps.

Required Modifications: TBD.

Response: Virginia Tech continues to maintain campus through several different methods. Current projects include reforestation of areas and wildflower gardens each year depending on funding and weather. Volumes of compost and mulch were not able to be tracked, however, each year Virginia Tech Grounds re-mulches flower beds campus wide. Wood chips are being used to improve the infiltration and root growth of the surrounding trees.

Virginia Tech is currently assessing the maps for landscaped areas.

Documents Provided:

- i. Tree Campus USA 2008 article
- ii. Tree Campus USA 2010 article
- iii. Tree Campus USA – Virginia Tech Tops Nation in Tree Planters, Wins Free Trees 2010 Article
- iv. Tree Campus USA 2011 article
- v. Tree Campus USA 2012 Article
- vi. Photographs of Green Roofs
- vii. Photographs of Native Meadows

BMP 6.5.3: Nutrient Management Plan.

Goal: Continue to update and evaluate existing plan as needed for operations.

Schedule and Evaluation: Periodic review, update, and evaluation of existing plan during each permit cycle. Status: on-going.

Responsible Party: Virginia Tech Environmental Health and Safety.

Necessary Documents: Updated Nutrient Management Plan (as applicable).

Measurable Goals: This BMP will be measured by ensuring that the current plan is up-to-date and continues to be effective. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: Updated Nutrient Management Plan.

Required Modifications: TBD.

Response: Virginia Tech has a VPA permit for the agricultural areas that was issued in 1995 is still in effect. Copies of the Nutrient Management Plans for the non-agricultural areas are available in the Site & Infrastructure Development Office.

Documents Provided:

- i. Summary of Each Nutrient Management Plan
- ii. Nutrient Management Plan Identification for Agriculture
- iii. DCR Approval for Virginia Tech Campus NMP
- iv. Virginia Tech Campus Grounds Soil Test Analysis and NMP
- v. DCR Approval for Virginia Tech NCAA Sports NMP
- vi. Virginia Tech NCAA Sports Soil Test Analysis NMP
- vii. DCR Approval for Virginia Tech Recreation NMP
- viii. Virginia Tech Recreational Sports, Soil Test Analysis and NMP
- ix. DCR Approval for Virginia Tech Peggy Lee Hahn Garden Pavilion NMP
- x. Virginia Tech Department of Horticulture, Peggy Lee Hahn Garden Pavilion Soil Test Analysis and NMP
- xi. DCR Approval for Virginia Tech Golf Course NMP
- xii. Virginia Tech Golf Course Soil Test Analysis and NMP

BMP 6.5.4: General Maintenance and Upkeep.

Goal: Continue to do general maintenance on campus that will improve stormwater.

Schedule and Evaluation: Perform tasks that will improve the stormwater system and help reduce pollutants from entering the waterways. Status: on-going.

Responsible Party: Virginia Tech Facilities Operations.

Necessary Documents: List of projects on campus that will improve stormwater.

Measurable Goals: This BMP will be measured by documenting any maintenance done on campus that prevents pollutants from entering the stormwater system. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: photographs of improvements.

Required Modifications: TBD.

Response: Virginia Tech re-seeds and places mulch across campus to maintain the grass which helps reduce the amount of runoff. Certain inlets are protected year-round to reduce the amount of sediment that reaches the waterway. Also, ditches where erosion has been an issue, Virginia Tech has installed check dams to reduce the velocity of the flow on those slopes.

Each year Virginia Tech has re-seeded the Drillfield on campus as well as other areas when necessary.

BMP 6.6.1: Funding and Staffing Needs for MCM-6.

Goal: Develop of a funding scope and achieve funding from the State for new staffing and infrastructure improvements to reach the goals of MCM-6.

Schedule and Evaluation: Continue to seek funding opportunities on an annual basis during each permit cycle. Status: on-going.

Responsible Party: Virginia Tech Facilities Services.

Necessary Documents: TBD.

Measurable Goals: Continue to seek methods for reaching the goals of MCM-6 through existing departmental budgets. No alternative funding sources have been identified to-date. Continue to monitor the effectiveness of this BMP on a routine basis.

Items to be Reported in Annual Report: TBD.

Required Modifications: TBD.

Response: Virginia Tech continues to seek methods for reaching goals of MCM-6 through existing departmental budgets. No alternative funding sources have been identified at this time.

Program Evaluation Summary for Permit Registration # VAR040049:

Below is a list of all updates and modifications made to the program this permit cycle per DCR request and voluntarily:

- On September 27, 2010 Virginia Tech notified, in writing, downstream regulated MS4s to which Virginia Tech is physically interconnected. Letters were sent to VDOT and the Town of Blacksburg. See BMP 3.1.1 for more information.
- 2011 Report Cycle:
 - Virginia Tech has updated the names of the Departments and Responsible Parties to better reflect reorganizations of associated departments. Please see 2011 Annual Report for more information.
 - Virginia Tech has changed the name of BMP 2.1.3 from “Storm Drain Stenciling” to “Storm Drain Marking. Stencils are no longer used to mark storm drains, instead Duracast markers are currently being used to mark Storm Drains. Please see BMP 2.1.3 for more information.
 - Virginia Tech found an error in numbering and changed BMP 6.1.4 to BMP 6.1.3
 - Virginia Tech removed “Virginia Tech teams up with Good Will for Handicapped individuals to help pick up trash on campus” from the list of Measureable Goals for BMP 2.1.2. This event no longer occurs. Virginia Tech is currently seeking other opportunities that will replace this one. Please see BMP 2.1.2 for more information.
 - Virginia Tech surpassed the goals set in the Schedule and Evaluation section of BMP 2.1.3. A goal was set to mark 16-20 inlets by June of 2011. Virginia Tech was able to mark over 300 inlets by June 2011. See BMP 2.1.3 for more information.
 - Under BMP 3.5.1, Virginia Tech was able to find funding for students to perform Illicit Discharge Detection and Elimination as well as secure funding to purchase water quality sampling equipment. See BMP 3.5.1 for more information.
 - As of June 2011, Virginia Tech Site & Infrastructure Development hired two Water Resources Engineers that assist with and manage stormwater related programs.
- 2012 Report Cycle:
 - Virginia Tech has added “Environmental Coalition leads clean-up after events” to the list of Measurable Goals for BMP 2.1.2. Please see BMP 2.1.2 for more information.
 - Virginia Tech purchased additional Duracast storm drain markers in order to continue to meet the measureable goals set forth in BMP 2.1.3. Please see BMP 2.1.2 for more information.
 - Virginia Tech was able to mark approximately 390 inlets by June 2012. Please see BMP 2.1.3 for more information.
 - Virginia Tech Purchased 40 pet waste stations for campus. The stations will be installed next to existing trash receptacles. With the help of the Virginia Tech Sign Shop, signs were made to address how pet waste can negatively impact stormwater. These pet waste stations will be used to educate and engage the public in stormwater pollution prevention. Please see BMP 1.2.1 for more information.

- Virginia Tech purchased a Photometer to assist with field investigations. Please see BMP 3.1.1 for more information.
- Virginia Tech purchased two Enviroscape models to aid in and improve upon public outreach efforts. The Enviroscape models will be used throughout the year to educate the public about stormwater pollution prevention. See BMP 1.2.1 for more information.

Other Information Pursuant to VAR04 Section II E 3

- *Section II E 3 b – Status of compliance with permit conditions, an assessment of the appropriateness of the identified best management practices and progress towards achieving the identified measurable goals for each of the minimum control measures;*
 - The progress toward achieving the identified measurable goals for each of the minimum control measures is included in this annual report submission.
 - Virginia Tech will be utilizing a third party to evaluate its MS4 Program during the coming year of this permit cycle. The “Municipal Stormwater Program Evaluation Guidance,” Environmental Protection Agency EPA-833-R-07-003 will be used during the evaluation. The results of this evaluation will be kept on file and made available during audits and inspections.
- *Section II E 3 c – Results of information collected and analyzed, including monitoring data, if any, during the reporting period*
 - The results of information collected by Virginia Tech academic departments is used for research purposes and is not included in this report.
- *Section II E 3 e – A change in any identified best management practices or measurable goals for any of the minimum control measures including steps to be taken to address any deficiencies;*
 - Changes that were made to any best management practices or measurable goals are addressed in the Program Evaluation above.
- *Section II E f – Notice that the operator is relying on another government entity to satisfy some of the permit obligations;*
 - Virginia Tech is not currently relying on another government entity to satisfy any of the permit obligations.
- *Section II E g – The approval status of any programs pursuant to Section II C of the progress towards achieving full approval of these programs;*
 - No existing program has required the implementation of any minimum control measures of Section II B.
- *Section II E h – Information pursuant to Section I B 9;*
 - Please see **Appendix B** for Annual Characterization.
- *Section II E i – The number of illicit discharges identified and the narrative on how they were controlled or eliminated pursuant to Section II B f*
 - Please see **Appendix D** for summaries of illicit discharges.
- *Section II E j – List of Regulated land-disturbing activities data tracked under Section II 4 c;*
 - Please see **Appendix E** for list of regulated Land-disturbing activities

- *Section II E k – Table of all known permanent stormwater management facilities*
 - Please see **Appendix C** for summary of all known permanent stormwater management facilities.
- *Section II E l – A list of any new or terminated signed agreement between the operator and any applicable third parties where the operator has entered into an agreement in order to implement minimum control measures or portions of minimum control measures;*
 - Virginia Tech does not have any signed agreements with a third party to implement any of the minimum control measures
 - Please see item *Section II E 3 b* above regarding third party performing Virginia Tech MS4 Program Evaluation.
- *Section II E 3 m – Copies of any written comments received during a public comment period regarding the MS4 Program Plan or any modifications;*
 - Virginia Tech did not hold any public comment periods during the 2011-2012 Report Cycle.
 - A comment box was added to the Virginia Tech MS4 Website in June 2012 and has not received any comments.

Appendix A – MS4 Registration Statement



Department of Conservation and Forestry
Division of Water Resources

VSMP GENERAL PERMIT REGISTRATION STATEMENT FOR STORMWATER DISCHARGES FROM SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS [VAR04]

(Please Type or Print All Information)

(The applicable fee specified in Form DCR 199-145 must additionally be submitted to the address given in that form to obtain coverage)

1. Regulated Small MS4

Name: VIRGINIA TECH VAR 040049

Type: City County Incorporated Town Unincorporated Town College or University
 Local School Board Military Installation Transport System Federal or State Facility Other

Location (County or City): MONTGOMERY COUNTY

2. Regulated Small MS4 Operator

Name: VIRGINIA TECH (ATTN CRAIG S. MOORE)

Address: 28 STERRETT FACILITIES

City: BLACKSBURG State: VA Zip: 24061

3. Hydrologic Unit Code(s) as identified in the most recent version of Virginia's 6th Order National Watershed Boundary Dataset currently receiving discharges or that have potential to receive discharges from the regulated small MS4:

NE59

4. Attach a description of the estimated drainage area, in acres, served by the regulated small MS4 discharging to any impaired receiving surface waters listed in the most recent Virginia 305(b)/303(d) Water Quality Assessment Integrated Report, and a description of the land use of each such drainage area.

5. Any TMDL waste loads allocated to the regulated small MS4 (this information may be found at <http://www.deq.state.va.us/tmdl/develop.html>): STROUBLES CREEK, BENTHIC TMDL
WBD: N22R, POLLUTANT: SEDIMENT, WLA: 233.15 TONS/YR

6. The name(s) of any regulated physically interconnected MS4s to which the regulated small MS4 discharges.
DISCHARGES DIRECTLY INTO A RECEIVING WATER (STROUBLES CREEK)

7. A copy of the MS4 Program Plan that includes: SEE PLAN

a. A list of BMPs that the operator proposes to implement for each of the stormwater minimum control measures and their associated measurable goals pursuant to 4VAC50-60-1240, Section II B; that includes:

i. A list of the existing policies, ordinances, schedules, inspection forms, written procedures, and other documents necessary for BMP implementation; and

ii. The individual, department, division, or unit responsible for implementing the BMP;

b. The objective and expected results of each BMP in meeting the measurable goals of the stormwater minimum control measures;

c. The implementation schedule including any interim milestones for the implementation of a proposed new BMP; and

Appendix B – Annual Characterization



Memorandum

To: Lauren Grimes, Virginia Tech MS4 Program Administrator
From: Lee Hixon, EEE Consulting, Inc.
Date: September 27, 2012
Re: Virginia Tech MS4 2011 Annual Characterization for the Stroubles Creek TMDL

The Virginia Department of Environmental Quality (DEQ) listed a segment of the main channel of Stroubles Creek in Montgomery County, Virginia on their biennial 303(d) list. Subsequently, a sediment total maximum daily load (TMDL) was developed on June 17, 2004 by the DEQ for the impaired portion of the Stroubles Creek watershed. As part of this sediment TMDL, an aggregated wasteload allocation (WLA) was assigned to three permitted small municipal separate storm sewer systems (MS4s), including Virginia Tech (VT), MS4 Permit # VAR040049. Within the Special Conditions of the MS4 General Permit, Section I, Part B(7), requires the operator to conduct an annual characterization that estimates the volume of stormwater discharged, in cubic feet, and the quantity of pollutant identified in the WLA, in a unit consistent with the WLA, discharged by the regulated small MS4.

To meet this permit requirement, VT completed the 2011 annual characterization of the stormwater discharged and the associated sediment loading from its MS4 within the Stroubles Creek TMDL watershed. The volume of stormwater discharged and pollutant loading was estimated using the Watershed Treatment Model (WTM). The following datasets were used within the model:

- Town of Blacksburg tax parcel data to determine the boundary of the Virginia Tech campus regulated under the MS4 General Permit.
- Detailed land-cover data of campus provided and maintained by Virginia Tech Facilities Operations. This data was supplemented to include the total area for current land disturbance related to construction activities;
- The NRSC Soil Survey Geographic (SSURGO) database for Montgomery County, Virginia;
- Rainfall data from the National Oceanic and Atmospheric Administration (NOAA) Gage ID: 440766, located in Blacksburg, Virginia (total rainfall for the reporting year was 43.68-inches); and
- Stream data from the Town of Blacksburg.

Based on these data inputs, the WTM estimates **an annual volume of stormwater discharged of 78,563,849 cubic feet, and an annual sediment load of 266.22 tons** from within the limits of Virginia Tech's property.

The WTM model developed for the 2011 annual characterization considered only sources and does not include management practices at this time, with the exception of reductions achieved through the implementation of erosion and sediment control inspections for construction activities. VT is currently working with a consultant to further develop the WTM model by including structural and non-structural management practices to quantify pollutant load and stormwater volume reductions.

Appendix C – BMP Summary

BMP Summary List

Report Cycle: July 1, 2011 - June 30, 2012

Permit NO	Reporting Year	BMP TYPE	HUC	Impaired Waters	No of Acres Treated	Other	Virginia Tech Identifier	BMP_ALIAS
VAR040049		Extended detention	NE59	Stroubles Creek	0.7		BMP_0009	Smithfield Lot Extended Detention 1
VAR040049		Extended detention	NE59	Stroubles Creek	0.7		BMP_0010	Smithfield Lot Extended Detention 2
VAR040049	2009	Bioretention	NE59	Stroubles Creek	2.0	Filter	BMP_0019	Henderson
VAR040049		Extended detention	NE59	Stroubles Creek	2.3		BMP_0011	Duck Pond Overflow Lot - Extended Detention
VAR040049		Bioretention	NE59	Stroubles Creek	3.4	Filter	BMP_0008	Smithfield Lot Bioretention
VAR040049		Detention Basin	NE59	Stroubles Creek	4.7	Underground	BMP_0018	Payne (NR) - Underground Detention Basin
VAR040049		Extended detention	NE59	Stroubles Creek	4.7		BMP_0022	Horse Exhibit - Livestock Arena
VAR040049		Extended detention	NE59	Stroubles Creek	5.0		BMP_0024	Library Storage - Extended Detention
VAR040049		Vegetated filter strip	NE59	Stroubles Creek	6.5		BMP_0032	Hahn Pavilion
VAR040049		Detention Basin	NE59	Stroubles Creek	12.0		BMP_0005	Vet Med - Detention Basin
VAR040049		Extended detention	NE59	Stroubles Creek	17.1		BMP_0023	VETES - Extended Detention
VAR040049		Extended detention	NE59	Stroubles Creek	20.1		BMP_0013	Oak Lane (SPH) - Extended Detention Basin
VAR040049		Other	NE59	Stroubles Creek	26.8	Channel Retention	BMP_0012	Oak Lane (SPH) - Channel Retention
VAR040049		Retention basin	NE59	Stroubles Creek	27.8		BMP_0004	Vet Med - Retention Basin
VAR040049	2009	Detention Basin	NE59	Stroubles Creek	38.7		BMP_0003	Chicken Hill Sediment Basin
VAR040049		Extended detention	NE59	Stroubles Creek	47.5		BMP_0015	Grove Lane
VAR040049	2009	Manufactured BMP	NE59	Stroubles Creek	52.8	Underground	BMP_0002	Chicken Hill Underground Detention Basin
VAR040049		Extended detention enhanced	NE59	Stroubles Creek	55.5		BMP_0014	Alumni Pond
VAR040049		Extended detention	NE59	Stroubles Creek	68.0		BMP_0026	Grove Lane Extended Detention Basin
VAR040049	2010	Extended detention	NE59	Stroubles Creek	47.5		BMP_0006	Vet Med - IDRF Extended Detention Basin
VAR040049	2010	Extended detention basin	NE59	Stroubles Creek	1.7		BMP_0001	Lane Stadium - Extended Detention Basin
VAR040049	2010	Green Roof Expansive	NE59	Stroubles Creek	0.5		BMP_0016	Life Sciences - Green Roof Extension 1
VAR040049	2010	Green Roof Expansive	NE59	Stroubles Creek	0.2		BMP-0017	Life Sciences - Green Roof Extension 2
VAR040049	2010	Bioretention - Filter	NE59	Stroubles Creek	0.3		BMP_0020	New Hall West 1
VAR040049	2010	Bioretention - Filter	NE59	Stroubles Creek	0.4		BMP_0021	New Hall West 2
VAR040049	2010	Irrigation Pond - Retention	NE59	Stroubles Creek	1.6		BMP_0025	Mollusk Research Center
VAR040049	2010	Filterra Units Filtration	NE59	Stroubles Creek	0.7		BMP_0037	McComas Filterra Unit
VAR040049	2010	Underground Water Quality	NE59	Stroubles Creek	2.0	Underground	BMP_0038	Football Locker Room WQU
VAR040049	2010	Bioretention Pretreatment	NE59	Stroubles Creek	3.6		BMP_0007	Smithfield Lot Bioretention Pretreatment
VAR040049	2010	Underground Water Quality	NE59	Stroubles Creek	52.8	Underground	BMP_0034	Lower Chicken Hill WQU
VAR040049	2010	Bioretention Filter	NE59	Stroubles Creek	0.3		BMP_0035	New Hall West 3
VAR040049	2010	Bioretention Filter	NE59	Stroubles Creek	0.3		BMP_0036	New Hall West 4
VAR040049	2011	Bioretention Filter	NE59	Stroubles Creek	3.58		BMP_0019	Henderson Hall Bioretention Filter
VAR040049	2011	Rain Garden (Bioretention Filter)	NE59	Stroubles Creek	0.15		BMP_0039	ICTAS II - Rain Garden
VAR040049	2011	Bioretention Filter	NE59	Stroubles Creek	0.28		BMP_0027	ICTAS II - Bioretention Filter
VAR040049	2012	Bioretention Filter	NE59	Stroubles Creek	11.62		BMP_0041	MMF Bioretention Filter
VAR040054	2012	Bioretention Filter	NE59	Stroubles Creek	0.29		BMP_0042	West End Bioretention
VAR040054	2012	Filterra Unit	NE59	Stroubles Creek	0.65		BMP_0043	West End Filterra
VAR040054	2012	Stormceptor Underground Water Quality Unit	NE59	Stroubles Creek	6.80	Underground	BMP_0044	Roller Hockey Rink WQU

Appendix D – Summary of Illicit Discharges

2012 MS4 Illicit Discharge Summary

Illicit Discharge
Date: 7/28/11

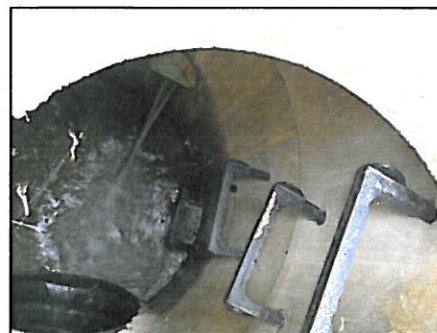
Initial Incident: It was noted that there was significant flow coming from outfall 3S100. It had been over 48 hours since the last rainfall event, so SID sampled the outfall for signs of another illicit discharge and tracked the source up to drop grate inlet 8038 near Dietrick, where the storm line ended. There was a dandy sack over drop grate inlet 8038, and a small amount of water was sitting in the bag. Flow could be heard underneath the bag which sounded equivalent to the flow coming out of 3S100. The water was tested at 3S118, and there were no unusual parameter readings or sediment; however, the source of the water remained unclear.



Drop Grate Inlet 8038



Dry 3S100



3S118

Corrective Action: The site was visited the next day, and the water was still flowing into Stroubles Creek. The site was visited again on August 1, 2011 and the flow in question had ceased. The dandy sack was still in drop grate inlet 8038, but no flow could be heard underneath the sack. Outfall 3S100 will continue to be inspected periodically by SID and further action will be taken if the discharge continues.

Appendix E – List of Regulated Land-Disturbing Activities

Virginia Tech 2012 MS4 Annual Report

MCM 4 - BMP 4.1.1: Active and Proposed Land Disturbing Projects

Active Land Disturbing Projects requiring VAR10 Permit Coverage:

1. Academic and Student Affairs Building – 2.2 acres
2. Ambler Johnston Hall Renovations – 1.5 acres
3. Center for the Arts – 13.3 acres
4. Davidson Hall Renovations Project Phase I – 2.7 acres
5. English Field Improvements Project - 6.9 acres
6. Human Agricultural and Biosciences Building One – 7.0 acres
7. Infectious Disease Research Facility – 0.8 acres
8. Inert Debris – 11.3 acres
9. Kentland Farm Aerobiology Building – 2.0 acres
10. North Campus Steam Extension – 3.8 acres
11. Recycled Brush Pad at Tom's Creek Landfill – 3.0 acres
12. Sigma Phi Epsilon House – 1.1 acres
13. Sigma Phi Epsilon Infrastructure – 4.3 acres
14. Signature Engineering Building – 3.94 acres
15. Southwest Chiller Plant – 5.2 acres
16. Tent Pad at Alumni Inn – 3.0 acres
17. Visitors' and Undergraduate Admission Center – 8.7 acres
18. Veterinary Medicine Instructional Addition – 1.2 acres
19. Virginia Tech Electric Services Ductbank – CRC Phase II – 2.6 acres

Active Land Disturbing Projects not requiring VAR10 Permit Coverage:

1. Virginia Tech Electric Services Ductbank
2. Recreation Fields 2012
3. Demolition of the existing Visitor's Center House

Proposed Projects:

1. Multi-Modal Transit Facility
2. Indoor Athletic Facility (on hold)
3. North Chiller Plant (on hold)
4. Translational Medicine
5. Agricultural Program Relocation Phases I & II (Dairy)
6. Classroom Building
7. Propulsion Lab
8. Virginia Bioinformatics Institute Addition
9. Davidson Hall Renovations Project Phase II
10. Sandy Hall Renovations
11. Performing Arts Building Renovations