This plan satisfies the requirements of Section I(C) of the MS4 General Permit (9VAC25-890-40) for Special Conditions for the Chesapeake Bay TMDL. This plan is consistent with the Chesapeake Bay TMDL and the Virginia Phase I and II WIPs to meet the Level 2 (L2) scoping run for existing developed lands as it represents an implementation of 5.0% of L2 as specified in the 2010 Phase I WIP.
EXECUTIVE SUMMARY

Germanna Community College (GCC), is authorized to discharge stormwater from its municipal separate storm sewer system (MS4) under the Virginia Pollutant Discharge Elimination System (VPDES) General Permit for Discharge of Stormwater from Small MS4s (MS4 General Permit). To maintain permit compliance, GCC implements an MS4 Program Plan that includes best management practices (BMPs) to address six minimum control measures (MCMs) and special conditions for the Total Maximum Daily Load (TMDL) in which GCC has been assigned a workload allocation (WLA). The Environmental Protection Agency (EPA) describes a TMDL as a “pollution diet” that identifies the maximum amount of a pollutant the waterway can receive and still meet water quality standards. A WLA determines the required reduction in pollutant of concern loadings from the MS4s to meet water quality standards. The MS4 General Permit serves as the regulatory mechanism for addressing the load reductions described in the TMDL, predominantly through the requirement of a TMDL Action Plan.

The Chesapeake Bay TMDL was established by the EPA on December 29, 2010 and initiated WLAs for phosphorus, nitrogen and total suspended solids. In response, the Commonwealth of Virginia developed Watershed Implementation Plans (WIPs) that, in part, identify the MS4 General Permit as a mechanism for enforcing load reductions in urban areas. Subsequently, the Commonwealth included special conditions into the latest MS4 General Permit to address the reductions required by the TMDL for the pollutants of concern. The WIPs intended the reductions to be achieved over the course of three 5-year permit cycles, with the first cycle (2013 – 2018) requiring 5% of the reductions be achieved. Reduction requirements for the following two permit cycles are anticipated to increase substantially, requiring an additional 35% and 60% of the reductions be achieved, respectively.

GCC has developed an Action Plan consistent with the Chesapeake Bay Action Plan Guidance Memo (Memo No. 15-2005) provided by the Virginia Department of Environmental Quality (DEQ). The guidance was used to determine the required pollutant load reductions and identify the means and methods for achieving pollutant load reductions required by the current MS4 General Permit. GCC will implement a new BMP, street sweeping, in order to achieve the required reductions for the current permit cycle. Regular employment of street sweeping, along with continued implementation of the GCC MS4 Program Plan, is consistent with the provisions of an iterative MS4 Program and constitutes compliance with the MS4 General Permit standard of reducing pollutants to the maximum extent practicable.
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## Appendices

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Acronyms
BMP Best Management Practice
CGP Construction General Permit
CUA Census Urban Area
CWA Clean Water Act
DEQ Virginia Department of Environmental Quality
EOS Edge of Stream
EPA Environmental Protection Agency
ESC Erosion and Sediment Control
GCC Germanna Community College
GIS Geographic Information System
IDDE Illicit Discharge Detection and Elimination
LA Load Allocation
L2 Level 2
MCM Minimum Control Measure
MEP Maximum Extent Practicable
MS4 Municipal Separate Storm Sewer System
MS4 GP General Permit for Discharge of Stormwater from Small MS4s
NMP Nutrient Management Plan
POC Pollutant of Concern
RLDA Regulated Land Disturbing Activity
SWPPP Stormwater Pollution Prevention Plan
SWM Stormwater Management
TMDL Total Maximum Daily Load
VAC Virginia Administrative Code
VCCS Virginia Community College System
VPDES Virginia Pollutant Discharge Elimination System
VSMP Virginia Stormwater Management Program
WIP Watershed Implementation Plan
WLA Wasteload Allocation
Definitions

Best Management Practices (BMPs) are schedules of activities, prohibitions of practices, maintenance procedures, and other management practices, including both structural and nonstructural practices, to prevent or reduce the pollution of surface waters and groundwater systems.

Census Urbanized Area (CUA) are areas identified as urban. MS4 regulations only apply within CUAs.

Existing Sources are pervious and impervious urban land uses served by the MS4 as of June 30, 2009.

Impervious Cover is a surface composed of material that significantly impedes or prevents natural infiltration of water into soil.

L2 Scoping Run is a model run to determine required reductions from urban sources as of June 30, 2009. The L2 reductions are summarized in the following table:

<table>
<thead>
<tr>
<th>Pollutant of Concern</th>
<th>Regulated Impervious (%)</th>
<th>Regulated Pervious (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrogen</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>Phosphorus</td>
<td>16</td>
<td>7.25</td>
</tr>
<tr>
<td>Sediment</td>
<td>20</td>
<td>8.75</td>
</tr>
</tbody>
</table>

Municipal Separate Storm Sewer System (MS4) is a conveyance or system of conveyances otherwise known as a municipal separate storm sewer system (MS4), including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains that are:

- Owned or operated by a federal state, city, town, county, district, association, or other public body, created by or pursuant to state law that discharges to surface waters;
- Designed or used for collecting or conveying stormwater;
- That is not a combined sewer; and
- That is not part of a publicly owned treatment works.

New Sources are pervious and impervious urban land uses served by the MS4 developed or redeveloped on or after July 1, 2009.

GCC MS4 Program Plan is the guiding document of the GCC’s MS4 Program and includes best management practices to address conditions of the MS4 General Permit.

Pollutants of Concern (POC) are total nitrogen (“TN”), total phosphorus (“TP”), and total suspended solids (“TSS”).

Prior Developed Lands are land that has been previously utilized for residential, commercial, industrial, institutional, recreation, transportation, or utility facilities or structures, and that will have the impervious areas associated with those uses altered during a land-disturbing activity.

Transitional Sources are regulated land disturbing activities that are temporary in nature and discharge through the MS4.
1.0 INTRODUCTION AND PURPOSE
Mandated by Congress under the Clean Water Act (CWA), the National Pollutant Discharge Elimination System (NPDES) storm water program includes the Municipal Separate Storm Sewer System (MS4), Construction, and Industrial General Permits. In Virginia the NPDES Program is administered by the Department of Environmental Quality (DEQ) through the Virginia Stormwater Management Program (VSMP) and the Virginia Pollutant Discharge Elimination System (VPDES). Germanna Community College (GCC) is authorized to discharge stormwater from its MS4 under the VPDES General Permit for Discharge of Stormwater from Small MS4s (MS4 General Permit). As part of the MS4 General Permit authorization, GCC developed and implements a MS4 Program Plan (the Plan) with best management practices (BMPs) to address the six minimum control measures (MCMs) and the special conditions for applicable total maximum daily loads (TMDLs) outlined in the MS4 General Permit. Implementation of these BMPs is consistent with the provisions of an iterative MS4 Program, which constitutes compliance with the standard of reducing pollutants to the "maximum extent practicable" or MEP.

The GCC MS4 program strives to improve environmental compliance, quality and stewardship through effective management, implementation, and enforcement of sound technical guidelines, criteria and practices for stormwater management and erosion and sediment control. The plan presented herein demonstrates how GCC’s MS4 Program Plan addresses sediment and nutrients (nitrogen and phosphorus) in its MS4 regulated area consistent with the requirements of the Chesapeake Bay TMDL.

1.1 Total Maximum Daily Loads
A TMDL is the total amount of a given pollutant that a waterbody can assimilate and still meet water quality standards. Typically, TMDLs are represented numerically in three main components: Waste Load Allocations (WLAs), a Load Allocation (LA), and a Margin of Safety. A WLA is the allocated amount of pollutant from areas discharging through a pipe or other conveyance considered a point source. Point sources include sewage treatment plants, industrial facilities and storm sewer systems. In contrast, an LA is the amount of pollutant from existing non-point sources and natural background such as farm runoff and atmospheric deposition. As a point source discharge, MS4’s are assigned a WLA representing the annual loading of the pollutant of concern (POC) that can be discharged from its regulated MS4 area.
1.2 MS4 General Permit Special Conditions
GCC’s MS4 General Permit includes a series of special conditions that must be addressed for permit compliance where GCC has been assigned a WLA as part of an approved TMDL. The special conditions state that any TMDL approved by the State Water Control Board (SWCB) assigning a WLA to an MS4 must be addressed by the Permittee through the measurable goals of their MS4 Program Plan.

In 1998, large portions of Chesapeake Bay and its tidal tributaries within Virginia were identified as not meeting water quality standards and listed as impaired because of excess nitrogen, phosphorus and sediment. Due to the Chesapeake Bay waters remaining on the impaired waters list, the Environmental Protection Agency (EPA) required that a TMDL be developed, which was subsequently approved on December 29, 2010.

1.3 Watershed Implementation Plan and Strategy for MS4s
The Chesapeake Bay Watershed Implementation Plans (WIPs) are plans that detail how and when the six Chesapeake Bay states and the District of Columbia will meet pollutant allocations. In the Phase I and Phase II WIPs for the Chesapeake Bay TMDL, Virginia committed to a phased approach to reducing nutrients and suspended solids discharging from MS4s. The issuance of the 2013-2018 MS4 General Permit set forth special conditions required by all MS4 General Permit holders within the Chesapeake Bay watershed. In part, the special conditions require the permittee to achieve 5% of the required reductions identified in the so-called Level 2 Scoping Run from existing baseline loads by July 1, 2018. Baseline loads are defined as those occurring on June 20, 2009, and are computed using loading rates provided in the MS4 General Permit.

1.4 GCC Chesapeake Bay Action Plan
The GCC Action Plan presented herein provides a review of the current MS4 program that demonstrates GCC’s ability to ensure compliance with the special conditions and includes the means and methods GCC will use to meet 5.0% of the Level 2 (L2) scoping run reductions by July 1, 2018. This Action Plan was developed to comply with the special conditions of the MS4 General Permit (9VAC25-890) and under the advisement of DEQ’s Guidance Memo No. 15-2005, which provides background information and procedures to meet the Chesapeake Bay TMDL special condition requirements.
2.0 APPLICABLE OVERVIEW OF GCC’S MS4 PROGRAM

GCC’s MS4 Permit regulates stormwater discharges from areas included within census urbanized areas (CUAs). GCC’s main campus is included in a CUA, as depicted in Appendix A. GCC’s collective efforts, as described in the GCC MS4 Program Plan, result in significant reduction of pollutants that could potentially be discharged from its regulated MS4. BMPs already included in the GCC Program Plan that address sediment and nutrients are described in the following sections. Each subsection is provided to address the referenced special condition in the MS4 General Permit.

2.1 Current Program and Existing Legal Authority

As a non-traditional MS4, GCC does not have the ability to create legal authorities and has not identified any necessary legal authorities necessary to meet the requirements of the special conditions. However, GCC’s MS4 Program includes Minimum Control Measures (MCMs) that include policies and procedures consistent the goals of the Chesapeake Bay TMDL. A summary of the applicable MCMs is listed below to address the following special condition:

✓  “A review of the current MS4 program implemented as a requirement of this state permit including a review of the existing legal authorities and the operator’s ability to ensure compliance with this special condition.”  [Section I(C)(2)(a)(1)]

- **MCM 1 (Public Education and Outreach)** – GCC’s MS4 Program includes a Public Education and Outreach Program (PEOP) that identifies the Chesapeake Bay TMDL POCs as a high priority water quality issue. The PEOP is described in BMP 1.2 of the GCC MS4 Program Plan and includes the distribution of educational materials regarding methods to reduce introduction of the POCs into stormwater runoff.

- **MCM 3 (Illicit Discharge Detection and Elimination)** – GCC’s MS4 Program includes an Illicit Discharge Detection and Elimination (IDDE) Program that includes written procedures to detect, identify, and address non-stormwater discharges, including illegal dumping, to the small MS4 with policies and procedures for when and how to use legal authorities. GCC prohibits non-stormwater discharges into the storm sewer system through language provided within the Standards of Conduct for employees and the Student Handbook for students. IDDE BMPs are described in the Minimum Control Measure 3 BMPs in the GCC MS4 Program Plan. The IDDE Program is effective at addressing the POC through staff training, prohibition of illicit discharges, and annual outfall screening.

- **MCM 4 (Construction Site Runoff Control)** – GCC’s MS4 Program includes a Construction Site Runoff Control Program that includes mechanisms to ensure compliance and enforcement on regulated construction sites with implementation of the DEQ-approved “VCCS Annual Erosion and Sediment Control and Stormwater Management Standards and Specifications.”
The standards and specifications are consistent with the Virginia Erosion and Sediment Control and Stormwater Management Laws and Regulations and include:
  o Required plan approval prior to commencement of a regulated land disturbance activity;
  o Construction site inspections and enforcement; and
  o Certification of post-construction stormwater management facilities.

The Construction Site Runoff Control Program is especially effective at reducing downstream conveyance of sediment from transitional sources. Minimum Control Measure 4 BMPs in the GCC MS4 Program Plan describe construction site runoff control BMPs.

- **MCM 5 (Post-Construction Stormwater Management)** – GCC’s MS4 Program includes a Post-Construction SWM Program that ensures water quality criteria in the Virginia Stormwater Management Regulations has been achieved on new developments and developments on prior developed land since July 1, 2009. Included among these requirements are written policies and procedures in the VCCS Erosion and Sediment Control and Stormwater Management Standards and Specifications to ensure that stormwater management facilities are designed and installed in accordance with appropriate law and regulations. Post-construction, the Program includes schedules and written procedures to ensure long-term inspections and maintenance of stormwater management BMPs to maintain functionality. Minimum Control Measure 5 BMPs in the GCC MS4 Program Plan describe post-construction stormwater management BMPs.

Implementation of this program addresses the following MS4 General Permit special conditions for the Action Plan to include:

✓ “The means and methods that will be utilized to address discharges into the MS4 from new sources [Section I(C)(2)(a)(3)]

- **MCM 6 (Good Housekeeping)** – GCC’s MS4 Program includes a Pollution Prevention/Good Housekeeping Program that incorporates policies and procedures to ensure that day-to-day operations minimize the exposure of pollutants to rainfall on campus grounds to the maximum extent practicable. The program is supported with GCC’s Pollution Prevention & Good Housekeeping Manual and annual training for applicable staff. GCC also utilizes contract language to ensure appropriate certifications for application of fertilizers per a DEQ-approved Nutrient Management Plan. Minimum Control Measure 6 BMPs in the GCC MS4 Program Plan describe pollution prevention and good housekeeping BMPs.
2.2 New or Modified Legal Authorities

Consistent with the MS4 General Permit, GCC uses an iterative approach to ensure the College is minimizing the discharge of pollutants through its MS4 to the MEP. The iterative approach is implemented through the annual reporting process with the review of the effectiveness of each MS4 Program Plan BMP. BMPs are modified, as necessary, to increase effectiveness. If new or modified authorities are identified as part of the annual “measure of effectiveness” as described for each BMP in the GCC MS4 Program Plan annual reporting, they will be reported through the annual report process. The iterative process addresses the following special condition in the MS4 General Permit:

✓ “The identification of any new or modified legal authorities such as ordinances, state and other permits, orders, specific contract language, and inter-jurisdictional agreements implemented or needing to be implemented to meet the requirements of this special condition.” [Section I(C)(2)(a)(2)]

As a non-traditional MS4, GCC does not have the legal authority to create legal authorities. No new or modifications to existing policies and procedures were identified as necessary to meet the requirements of the special conditions. Means and methods to meet the special conditions are described in Section 4.
3.0 POLLUTANT LOADINGS
The MS4 General Permit requires GCC to estimate the annual loadings and the POC load reductions (5.0% from the L2 Scoping Run). To complete this requirement, GCC determined the amount of pervious and impervious land cover for their regulated campus and input the data into the appropriate loading and reduction tables provided in the MS4 General Permit. The methodology to determine sediment and nutrient loadings and the required reductions are described in the following sub-sections.

3.1 Baseline Loading Characterization
Before estimating the loads and required reductions, GCC first evaluated the extent of their regulated MS4 area, including the regulated acres of urban pervious and impervious surface served by its MS4 as of June 30, 2009. These evaluations were conducted using Geographic Information System (GIS) digitization utilizing aerial photography, as depicted in Appendix A.

GCC’s MS4 regulated area was calculated using the GCC property boundaries as a conservative estimate of the area the MS4 serves. Campus boundaries were obtained from Spotsylvania County’s GIS data. Aerial photography was obtained from the 2009 Virginia Base Map Program Orthophotography Program Aerials. The extent of pervious, impervious and forest areas were digitized based on the aerial imagery and best professional judgment. For areas that were under construction or disturbed in the 2009 aerial imagery, current aerial images were used to determine whether the areas resulted in pervious or impervious surfaces after construction. Baseline land cover results are provided in Table 1. The determination of regulated area was based on the 2010 CUA.

Table 1: Classification of Campus Land Cover Area (Acres)

<table>
<thead>
<tr>
<th>Land Cover</th>
<th>GCC Campus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impervious</td>
<td>9.66</td>
</tr>
<tr>
<td>Pervious</td>
<td>10.30</td>
</tr>
<tr>
<td>Forest*</td>
<td>54.33</td>
</tr>
<tr>
<td>Surface Water*</td>
<td>0.42</td>
</tr>
</tbody>
</table>

* Consistent with methodology described in the DEQ Chesapeake Bay Guidance, these areas are not included in the loading computations described in Section 3.2.

3.2 Annual Loadings from Existing Sources
The data summarized in Table 1 was used to estimate pollutant loads from existing sources as of June 30, 2009, using the Rappahannock River Basin calculation sheet for estimating existing

source loads provided in the MS4 General Permit. The calculation sheet was completed for the regulated GCC campus as provided in Table 2, which addresses the following special condition:

✓ “An estimate of the annual POC loads discharged from the existing sources as of June 30, 2009, based on the 2009 progress run. The operator shall utilize the applicable versions of Tables ... based on the river basin to which the MS4 discharges by multiplying the total existing acres served by the MS4 on June 30, 2009, and the 2009 Edge of Stream (EOS) loading rate.” [Section I(C)(2)(a)(4)]

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Regulated Urban Land Cover</th>
<th>Total Existing Acres Served by MS4 (06/30/09)</th>
<th>2009 EOS Loading Rate (lbs/acre)</th>
<th>Estimated Total POC Load Based on 2009 Progress Run (lbs)</th>
<th>Total Load (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrogen</td>
<td>Impervious</td>
<td>9.66</td>
<td>9.38</td>
<td>90.61</td>
<td>145.61</td>
</tr>
<tr>
<td></td>
<td>Pervious</td>
<td>10.30</td>
<td>5.34</td>
<td>55.00</td>
<td></td>
</tr>
<tr>
<td>Phosphorus</td>
<td>Impervious</td>
<td>9.66</td>
<td>1.41</td>
<td>13.62</td>
<td>17.53</td>
</tr>
<tr>
<td></td>
<td>Pervious</td>
<td>10.30</td>
<td>0.38</td>
<td>3.91</td>
<td></td>
</tr>
<tr>
<td>TSS</td>
<td>Impervious</td>
<td>9.66</td>
<td>423.97</td>
<td>4095.55</td>
<td>4,672.45</td>
</tr>
<tr>
<td></td>
<td>Pervious</td>
<td>10.30</td>
<td>56.01</td>
<td>576.90</td>
<td></td>
</tr>
</tbody>
</table>

3.3 Annual Loadings from New Sources and Grandfathered Projects

In addition to computing baseline loadings from existing conditions as of June 30, 2009, the special conditions require the determination of offsets for increased loads from development occurring on or after July 1, 2009, including grandfathered projects. No offsets are necessary for new sources since:

- Loadings from new sources are addressed with the water quality criteria in the stormwater management regulations. Water quality criteria for new sources from regulated development between July 1, 2009 and June 30, 2014 was based on an average land cover condition of 16% and therefore appropriate offsets were incorporated within the development project’s stormwater management plan.
- No GCC projects are grandfathered.

Since no offsets for new sources are necessary, the following special conditions are addressed:

✓ “A list of future projects and associated acreage that qualify as grandfathered in accordance with 9VAC25-870-48” [Section I(C)(2)(a)(10)]
✓ “The means and methods to offset the increased loads from new sources initiating construction between July 1, 2009, and June 30, 2014, that disturb one acre or greater as a result of the utilization of an average land cover condition greater than 16% impervious cover for the design of post-development stormwater management facilities. The operator shall offset 5.0% of the calculated increased load from these new sources during the permit cycle.” [Section I(C)(2)(a)(7)]
✓ “The means and methods to offset the increased loads from projects as grandfathered in accordance with 9VAC25-870-48, that disturb one acre or greater that begin construction after
July 1, 2014, where the project utilizes an average land cover condition greater than 16% impervious cover in the design of post-development stormwater management facilities.” [Section I(C)(2)(a)(8)]

✓ “Implementation of the means and methods to address discharges from new sources in accordance with the minimum control measure in Section II ... related to post-construction stormwater management in new development and development of prior developed lands and in order to offset 5.0% of the total increase in POC loads between July 1, 2009, and June 30, 2014. Increases in the POC load from grandfathered projects initiating construction after July 1, 2014, must be offset prior to completion of the project.” [Section I(C)(3)(c)]

3.4 Required Load Reductions

The MS4 General Permit requires GCC to reduce 5.0% of the L2 Scoping Run POC reductions for existing sources as of June 30, 2009. The required load reductions for the GCC campus for this permit cycle were calculated using the calculation sheet in the MS4 General Permit for determining POC reductions for the Rappahannock River basin. The calculation sheet was modified with the corrected loading rates provided in DEQ’s Guidance Memo No. 15-2005. The required load reductions for GCC are depicted in Table 3. The information in the table addresses the following special condition to provide:

✓ “A determination of the total pollutant load reductions necessary to reduce the annual POC loads from existing sources utilizing the applicable versions of Tables ... based on the river basin to which the MS4 discharges. This shall be calculated by multiplying the total existing acres served by the MS4 by the first permit cycle required reduction in loading rate. For the purposes of this determination, the operator shall utilize those existing acres identified by the 2000 U.S. Census Bureau urbanized area and served by the MS4.” [Section I(C)(2)(a)(5)]

### Table 3: Estimated POC Reductions from the GCC Campus

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Regulated Urban Land Cover</th>
<th>Existing Acres Served by MS4 (06/30/09)</th>
<th>Reduction in Loading Rate (lbs/acre)</th>
<th>Reduction Required First Permit Cycle (lbs)</th>
<th>Total Reduction (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrogen</td>
<td>Impervious</td>
<td>9.66</td>
<td>0.04221</td>
<td>0.41</td>
<td>0.57</td>
</tr>
<tr>
<td></td>
<td>Pervious</td>
<td>10.30</td>
<td>0.01602</td>
<td>0.17</td>
<td></td>
</tr>
<tr>
<td>Phosphorus</td>
<td>Impervious</td>
<td>9.66</td>
<td>0.01128</td>
<td>0.11</td>
<td>0.12</td>
</tr>
<tr>
<td></td>
<td>Pervious</td>
<td>10.30</td>
<td>0.0013775</td>
<td>0.01</td>
<td></td>
</tr>
<tr>
<td>TSS</td>
<td>Impervious</td>
<td>9.66</td>
<td>4.2397</td>
<td>40.96</td>
<td>43.48</td>
</tr>
<tr>
<td></td>
<td>Pervious</td>
<td>10.30</td>
<td>0.24504375</td>
<td>2.52</td>
<td></td>
</tr>
</tbody>
</table>
4.0 MEANS TO ACHIEVE POLLUTANT REDUCTIONS
DEQ’s Guidance Memo No. 15-2005 was used to identify appropriate means and methods for achieving the required reductions computed in Section 3.4. The means and methods are described in the following sub-sections and will be incorporated into the GCC MS4 Program Plan for implementation, addressing the following MS4 General Permit special condition:

✔ “Implementation of means and methods sufficient to meet the required reductions of POC loads from existing sources in accordance with the Chesapeake Bay TMDL Action Plan.” [Section I(C)(3)(d)]

POC load reductions described in the following sub-sections demonstrate compliance with the reduction requirements for this MS4 General Permit cycle with the understanding that any changes in established BMP efficiencies will not be retroactively applied to projects approved to meet reductions for this MS4 General Permit cycle.

4.1 Reductions Achieved with New BMPs
GCC will implement street sweeping in order to satisfy the required POC reductions identified in Section 3.4. The “mass loading approach,” as described in DEQ’s Guidance Memo No. 15-2005, was utilized to determine the extent of street sweeping efforts to be implemented. Per the mass loading approach, the overall weight of material collected through street sweeping is multiplied by a dry weight factor and then a factor specific to each POC in order to quantify the pollutant reductions achieved. Given the target pollutant reductions and the dry weight and POC factors, it was determined that GCC must collect a minimum of 326 pounds of material per year to meet the POC reduction requirements. Required reductions and sweeping efforts are summarized in Table 4.

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Annual Reductions Required by L2 Scoping Run (lbs/yr)</th>
<th>Dry Weight Factor</th>
<th>POC Multiplication Factor</th>
<th>Required Street Sweeping Material Weight (lbs/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrogen</td>
<td>0.57</td>
<td>0.7</td>
<td>0.0025</td>
<td>325.71</td>
</tr>
<tr>
<td>Phosphorus</td>
<td>0.12</td>
<td>0.7</td>
<td>0.001</td>
<td>171.43</td>
</tr>
<tr>
<td>TSS</td>
<td>43.48</td>
<td>0.7</td>
<td>0.3</td>
<td>207.05</td>
</tr>
</tbody>
</table>
5.0 IMPLEMENTATION TO THE MEP

Implementation of the Action Plan is dependent on continued execution of the GCC MS4 Program Plan. MS4 Program Plan BMPs will continue to be implemented per the schedules outlined in the GCC MS4 Program Plan to address the following special condition:

✓ “The means and methods, such as management practices and retrofit programs that will be utilized to meet the required reductions included in subdivision 2 a (5) of this subsection ... and a schedule to achieve those reductions. The schedule should include annual benchmarks to demonstrate the ongoing progress in meeting those reductions.” [Section I(C)(2)(a)(6)]

The cost associated with the implementation of street sweeping is estimated to be approximately $3,475 per year per pound of phosphorous removed. This estimate is based on the document titled “Cost-Effectiveness Study of Urban Stormwater BMPs in the James River Basin” by the Center for Watershed Protection. The study detailed costs associated with street sweeping based on a ten year life cycle and the capital cost of a mechanical sweeper. During the current permit cycle, GCC will evaluate the most cost effective way for implementing a street sweeping program which may include contracting street sweeping services or the purchase of a sweeper. This information addresses the following special condition:

✓ “An estimate of the expected costs to implement the requirements of this special condition during the state permit cycle.” [Section I(C)(2)(a)(11)]

5.1 Supplemental Means and Methods

In addition, the remaining Minimum Control Measure BMPs described in Section 2.1 will continue to be implemented by GCC as part of the GCC MS4 Program Plan. Continued implementation of these BMPs demonstrates implementation of the GCC Chesapeake Bay Action Plan to the maximum extent practicable and demonstrates adequate progress satisfying the following special conditions:

✓ “Implementation of nutrient management plans ...” [Section I(C)(3)(a)]
✓ “Implementation of the minimum control measure related to construction site stormwater runoff control in accordance with this state permit shall address discharges from transitional sources.” [Section I(C)(3)(b)]

5.2 Public Comment Period

GCC will solicit public comment on this Plan and consider all comments that are provided. Public comment will be provided through the following means:

• A draft of the Chesapeake Bay TMDL Action plan will be posted on GCC’s website for a minimum of 14 total days.
• An email will be sent to the target audience identified in Minimum Control Measure 1 of the GCC MS4 Program Plan with a link where comment can be provided on the Action Plan.

Solicitation of public comment on the Action Plan addresses the following special condition:

✓ “An opportunity for receipt and consideration of public comment regarding the draft Chesapeake Bay TMDL Action Plan.” [Section I(C)(2)(a)(12)]

5.3 Annual Reporting
The effectiveness of the Action Plan will be measured through the MS4 General Permit annual reporting. GCC will report annually on the implementation of the means and methods described in Section 4.1 of this Plan.
Appendix A: Mapping for Characterization of GCC Campus
FREDERICKSBURG CAMPUS
IMPERVIOUS AND PERVIOUS LAND COVER
GERMANN COMMUNITY COLLEGE

Sources: 2009 VGIA Imagery
Prepared by Brian Brown, May 14, 2015