

**CITY OF FREDERICKSBURG  
CHESAPEAKE BAY  
TOTAL MAXIMUM DAILY LOAD (TMDL)  
ACTION PLAN**



City of Fredericksburg  
Community Planning and Building  
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540-372-1080

# Table of Contents

<b>Table of Contents</b> .....	<b>ii</b>
<b>Certification</b> .....	<b>iii</b>
<b>Executive Summary</b> .....	<b>1</b>
<b>Chapter 1: Introduction</b> .....	<b>2</b>
<b>Chapter 2: Current Program and Existing Legal Authority / New Modified Legal Authority</b> .....	<b>4</b>
I. <i>Development and Implementation of Nutrient Management Plans (NMPs)</i> .....	4
Compliance Expectations .....	4
Compliance Assessment .....	5
Additional Legal Authority Modifications or New Legal Authorities Necessary.....	5
II. <i>Control of POC Loads from Transitional Sources</i> .....	5
Compliance Expectations .....	5
Compliance Assessment.....	6
Additional Legal Authority Modifications or New Legal Authorities Necessary.....	6
III. <i>Control of POC Loads from New Sources</i> .....	6
Compliance Expectations .....	6
Compliance Assessment.....	7
Additional Legal Authority Modifications or New Legal Authorities Necessary.....	7
IV. <i>Control of POC Loads from Existing Sources</i> .....	7
Compliance Expectations .....	7
Compliance Assessment.....	7
Additional Legal Authority Modifications or New Legal Authorities Necessary.....	8
<b>Chapter 3: Means and Methods to Address Discharges from New Sources</b> .....	<b>9</b>
<b>Chapter 4: Estimated Existing Source Loads and Calculated Total POC Required Reductions</b> .....	<b>10</b>
<b>Chapter 5: Means and Methods to Meet the Required Reductions and Schedule</b> .....	<b>12</b>
I. <i>Redevelopment on prior developed lands</i> .....	12
II. <i>Street Sweeping</i> .....	12
III. <i>Proposed Schedule and Milestones</i> .....	13
<b>Chapter 6: Means and Methods to Offset Increased Loads from New Sources Initiating Construction between July 1, 2009 and June 30, 2014</b> .....	<b>15</b>
<b>Chapter 7: Means and Methods to Offset Increased Loads from Grandfathered Projects that begin Construction after July 1, 2014</b> .....	<b>16</b>
<b>Chapter 8: List of Future Projects, and Associated Acreage, that Qualify as Grandfathered</b> .....	<b>17</b>
<b>Chapter 9: Estimate of the Expected Cost to Implement the Necessary Reductions</b> .....	<b>18</b>
<b>Chapter 10: Public Comments on the Draft TMDL Action Plan</b> .....	<b>19</b>
<b>Chapter 11: Annual Reporting Requirements and Future Steps</b> .....	<b>20</b>
<b>Appendix 1</b> .....	<b>21</b>
<b>VA General Permit for Discharges of Stormwater from Small MS4s Special Condition for the Chesapeake Bay</b> .....	<b>21</b>
<b>Appendix 2 - City of Fredericksburg Street Sweeping Routes (as of February 24, 2015)</b> .....	<b>29</b>

## Certification

Document: Chesapeake Bay TMDL Action Plan

**Date of Completion:**

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Title

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## 1 Executive Summary

2 On December 29, 2010, the federal Environmental Protection Agency (EPA) published the Chesapeake Bay Total  
3 Maximum Daily Load (TMDL) for Nitrogen, Phosphorus, and Sediment. The TMDL identified nitrogen, phosphorus,  
4 and sediment as the Pollutants of Concern (POCs) causing the impairment to the Chesapeake Bay. The City of  
5 Fredericksburg, Virginia operates a regulated small municipal separate storm sewer system (MS4) located within the  
6 Fredericksburg 2000 Urbanized Area. Discharges from the City's MS4 are regulated under the Clean Water Act and  
7 State Water Control Law and, as such, are required to develop a Chesapeake Bay TMDL Action Plan to address the  
8 TMDL in accordance with the Virginia General Permit for Discharges of Stormwater from Small MS4s (MS4 General  
9 Permit).

10  
11 In development of this TMDL Action Plan, the City conducted an evaluation of its existing legal authorities and  
12 determined that it does not anticipate requiring additional or new legal authorities in order to comply with the MS4  
13 General Permit conditions. As part of the TMDL Action Plan, the City of Fredericksburg will develop nutrient  
14 management plans on two City facilities, totaling 17 acres, where nutrients were applied to greater than one  
15 contiguous acre of managed turf. The City will also continue to utilize its DEQ-approved VSMP Program as the  
16 Means and Methods to address discharges from New Sources. The City has not identified any future land disturbing  
17 projects that qualify for the grand-fathering condition established under its VSMP.

18  
19 The City will rely on street sweeping as its primary Means and Methods to remove a total of 98.8 lbs. of nitrogen,  
20 20.6 lbs. of phosphorus, and 7,925.4 lbs. of sediment from the annual Existing Source POC loads from both the  
21 2000 and 2010 Urbanized Areas. Using the Mass Loading Approach described in Appendix V.G of DEQ Guidance  
22 Memo No. 15-2005, the City has determined that its Street Sweeping program will be required to collect a minimum  
23 of 56,457.1 lbs. (28.2 tons) of street sweeping debris annually in order to account for a 5% reduction in nitrogen,  
24 phosphorus and sediment. The City estimates that it will cost \$546,721.08 to meet the required reductions in  
25 Existing Sources as identified in this TMDL Action Plan.

26

## Chapter 1: Introduction

On December 29, 2010, the federal Environmental Protection Agency (EPA) published the Chesapeake Bay Total Maximum Daily Load (TMDL) for Nitrogen, Phosphorus and Sediment. The TMDL identified nitrogen, phosphorus, and sediment as the pollutants of Concern (POCs) causing the impairment to the Chesapeake Bay. As a result, the TMDL established pollutant discharge limitations for both point sources, which are regulated under the federal Clean Water Act and the Virginia State Water Control Law, and non-point sources, which are not regulated.

Fredericksburg, Virginia operates a regulated small municipal separate storm sewer system (MS4) located within the Fredericksburg Urbanized Area boundary established by the 2000 U.S. Census (Figure 1) (2000 Urbanized Area). Discharges from the MS4 are regulated under the Clean Water Act and State Water Control Law and, as such, are required to meet any conditions established by the regulatory authority (Virginia Department of Environmental Quality [DEQ]) including those necessary to meet the TMDL requirements. For the City, these conditions are contained in the Special Condition for the Chesapeake Bay TMDL (Special Condition [Appendix 1]) found in the Virginia General Permit for the Discharge of Stormwater from Small MS4s (MS4 General Permit). The Special Condition requires that the City develop a Chesapeake Bay TMDL Action Plan that includes:

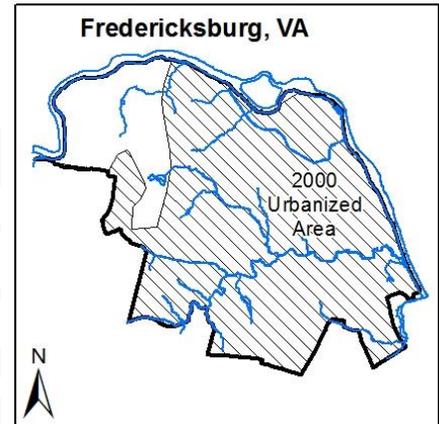


Figure 1: City of Fredericksburg and Associated 2000 UA

- An assessment of the City's current MS4 Program and existing legal authorities to determine if the City has sufficient legal authority to adequately address the Special Condition requirements
- Identification of any new or additional legal authority necessary to adequately address the Special Condition requirements
- Identification of the Means and Methods by which the City will address New Sources of the POCs
- An estimate of the Existing Source loads and calculated total POC required reductions
- Identification of the Means and Methods by which the City will address the Existing Source required reductions and an associated implementation schedule
- Identification of the Means and Methods by which the City will offset any increased loads from New Sources that initiated construction between July 1, 2009 and June 30, 2014
- Identification of the Means and Methods by which the City will address POC loads from Transitional Sources
- Identification of the Means and Methods by which the City will offset any increased loads from grandfathered projects that initiate construction after July 1, 2014
- A list of grandfathered projects
- An estimate of the cost for the City to implement the Special Condition

In addition, the City must provide an opportunity for the receipt and consideration of public comment regarding the Chesapeake Bay TMDL Action Plan.

69 This document represents the City of Fredericksburg's Chesapeake Bay TMDL Action Plan for the 2013-2018 MS4  
70 General Permit cycle. The City will address any applicable modifications to the TMDL or Virginia Watershed  
71 Implementation Plan that occur during the current permit term as part of the City's permit reapplication, which is  
72 currently scheduled for submission to DEQ in March 2018.

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75 **Chapter 2: Current Program and Existing Legal Authority / New Modified**  
76 **Legal Authority**

77 Under the MS4 General Permit's Special Condition, the City of Fredericksburg is required to:

- 78
- 79 • Conduct a review of its currently implemented MS4 program that includes review of the City's existing legal
- 80 authorities and the City's ability to ensure compliance with the Special Condition; and,
- 81
- 82 • Identify any new or modified legal authority that the City has implemented or needs to implement in order to
- 83 meet the conditions of the Special Condition
- 84

85 Compliance with the Special Condition represents adequate progress during the current MS4 General Permit cycle  
86 towards achieving TMDL wasteload allocations consistent with the assumptions and requirements of the  
87 Chesapeake Bay TMDL. The Special Condition further defines the compliance expectations for Chesapeake Bay  
88 TMDL Action Plan implementation to the maximum extent practicable (MEP) as well as demonstrating adequate  
89 progress. These are as follows:

- 90
- 91 • The City must develop and implement nutrient management plans in accordance with the schedule
- 92 identified in the MS4 General Permit.
- 93
- 94 • The City must implement construction site stormwater runoff controls in accordance with the MS4 General
- 95 Permit to address POC loads from Transitional Sources.
- 96
- 97 • The City must implement means and methods to address discharges from New Sources, which includes:
- 98 ○ New development and development of prior developed lands after July 1, 2014;
- 99 ○ Offset 5% of the POC loads based on the total load increase between July 1, 2009, and June 30,
- 100 2014; and,
- 101 ○ Offset of the increase in the POC loads from grandfathered projects initiating construction after
- 102 July 1, 2014, before completion of the individual grandfathered project
- 103
- 104 • The City must implement means and methods sufficient to meet the required reductions of POC loads from
- 105 Existing Sources in accordance with the Special Condition.
- 106

107 This assessment reviews the City's existing legal authorities and ability to comply with the Special Conditions based  
108 on compliance defined in the Special Condition.

109 **I. Development and Implementation of Nutrient Management Plans**  
110 **(NMPs)**

111 ***Compliance Expectations***

112 As required by the MS4 General Permit, the City of Fredericksburg has identified two facilities, totaling 17 acres,  
113 where nutrients were applied to greater than one contiguous acre of managed turf (Table 1).

114  
115

116  
117

Table 1: Fredericksburg Properties Requiring NMPs

Facility Name	Area (Acreage)	Latitude	Longitude
Dixon Street Park	15.0	38°17'13"N	77°27'14"W
Old Mill Park	2.0	38°19'02"N	77°28'03"W
<b>Total Acreage</b>	<b>17.0</b>		

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The MS4 General Permit requires that the City implement turf and landscape NMPs on all 17.0 acres by June 30, 2018. In addition, the MS4 General Permit establishes the following measurable goals schedule:

- By June 30, 2015, the City will develop and implement NMPs on 15% of the identified managed turf and landscape.
- By June 30, 2016, the City will develop and implement NMPs on 40% of the identified managed turf and landscape.
- By June 30, 2017, the City will develop and implement NMPs on 75% of the identified managed turf and landscape.

131  
132  
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The City has some flexibility in meeting this implementation schedule as the compliance requirement contained in the MS4 General Permit is that the City cannot miss the targeted milestones for two consecutive years or miss the completion date for development and implementation of 100% of the required NMPs.

134 **Compliance Assessment**

135 The facilities identified in Table 1 are owned and operated by the City. As such, the City has the authorities  
136 necessary to implement NMPs on the managed turf and landscaping acreage as required by the MS4 General  
137 Permit. The City must develop NMPs for those properties, identified in Table 1, in accordance with the schedule  
138 identified in the MS4 General Permit.

139 **Additional Legal Authority Modifications or New Legal Authorities Necessary**

140 The City does not anticipate requiring additional or new legal authorities in order to comply with the requirement that  
141 it develop and implement NMPs the properties identified in Table 1.

142 **II. Control of POC Loads from Transitional Sources**

143 **Compliance Expectations**

144 Transitional POC sources are those sources considered temporary in nature and discharge throughout the MS4.  
145 The MS4 General Permit defines the compliance expectations for control of Transitional Sources to MEP while  
146 demonstrating adequate progress towards meeting the pollutant load reduction as 'implementation of the minimum  
147 control measure in Section II related to construction site stormwater runoff control in accordance with the [MS4  
148 General Permit].'

149 **Compliance Assessment**

150 The City has the legal authority to implement the necessary programs, procedures and protocols to meet the  
151 compliance expectations for controlling POC loads from Transitional Sources. The City of Fredericksburg operates  
152 an approved Virginia Erosion and Sediment Control Program (VESCP), which was found to be ‘consistent’ with the  
153 Virginia Erosion and Sediment Control (ESC) Law and regulations during its November 2007 State evaluation. Legal  
154 authority for the VESCP is authorized under Chapter 78, Article V (Erosion and Sediment Control) and Chapter 72  
155 (Unified Development Ordinance). The purpose of Chapter 78 is to prevent the general degradation of properties,  
156 stream channels, waters and other natural resources of the City of Fredericksburg by establishing requirements for  
157 the control of soil erosion, sediment deposition and stormwater runoff and by establishing procedures whereby these  
158 requirements shall be administered and enforced. Chapter 72 further protects certain critical natural and cultural  
159 features and resources (i.e., Chesapeake Bay Resource Protection Areas) by regulating the use and development of  
160 these separate overlay districts.

161  
162 State-certified Erosion and Sediment Control (ESC) plan reviewers ensure the adequacy of the submitted ESC plans  
163 to meet the minimum standards required under Chapter 78. Land disturbing activities which disturb areas greater  
164 than 2,500 square feet are required to have an approved ESC plan prior to commencement of land disturbing  
165 activities.

166  
167 The City also operates as a State-delegated Virginia Stormwater Management Program (VSMP) authority. Local  
168 authority for operation is authorized under Chapter §38 Article IV of the City Code. Under the VSMP, the City will not  
169 issue land disturbing permits for projects that disturb one acre or greater of land until the requirements of the VSMP  
170 MS4 General Permit for Stormwater Discharges from Construction Activities are met.

171  
172 Once land disturbance begins, State-certified City inspectors conduct compliance inspections in accordance with the  
173 City’s inspection schedule. All inspections are conducted using a standardized checklist by certified and dedicated  
174 inspectors, whose only task is to inspect the ESC controls. Enforcement actions are handled collaboratively  
175 between the Department of Public Works, the City Fire Marshall, and the City Attorney’s Office.

176 **Additional Legal Authority Modifications or New Legal Authorities Necessary**

177 The City does not anticipate requiring additional or new legal authorities in order to comply with the requirement that  
178 it control Transitional Sources to the maximum extent practicable while demonstrating adequate progress towards  
179 meeting the pollutant load reduction as “implementation of the minimum control measure in Section II related to  
180 construction site stormwater runoff control in accordance with the [MS4 General Permit].”

181 **III. Control of POC Loads from New Sources**

182 **Compliance Expectations**

183 The City must implement Means and Methods to address the control of POC loads from New Sources in accordance  
184 with the Minimum Measure for Post-Construction Stormwater Management in New Development and Development  
185 of Prior Developed Lands. In addition, the City must identify projects initiated between July 1, 2009 and June 30,  
186 2014 where the implemented water quality design criteria was less stringent than that equivalent to meeting an  
187 Average Land Cover Condition (ALCC) of 16% impervious cover. The City is required to offset 5.0% of the  
188 identified increase in POC loads resulting from implementation of these less stringent design requirements. Finally,  
189 the City must implement Means and Methods that ensure increases in the POC load from grandfathered projects, as  
190 defined by 9VAC25-870-48, are 100% offset prior to completion of the individual project.

191 **Compliance Assessment**

192 The City has the legal authority and associated programs, procedures and protocols in place to meet the compliance  
193 expectations regarding POC loads from New Sources. Chapter 38, Article IV of the Codified Ordinances of the City  
194 of Fredericksburg VSMP, was revised effective July 1, 2014 to establish the City's VSMP. Projects approved for  
195 construction after July 1, 2014 are required to meet the VSMP water quality design criteria found at 9VAC25-870-63;  
196 and, therefore, meet the minimum design criteria.

197  
198 As the City previously implemented the ALCC of 16% impervious cover as part of its development requirements, the  
199 City also had appropriate legal authority in place to meet the compliance expectations for New Source loads  
200 initiating construction between July 1, 2009 and June 30, 2014.

201  
202 Finally, as the ALCC in place for utilization by 'grandfathered' projects initiating construction after July 1, 2014 was  
203 based on 16% IP, the City does not need to address increases in future loads resulting from grandfathered projects.

204  
205 The City has an adopted a Stormwater Best Management Practices Inspection and Operation & Maintenance Plan  
206 (IO&M Plan) and an Environmental Codes Standard Policy and Procedures Manual (ESCPP) in order to address the  
207 design of stormwater conveyance systems and related best management practices (BMPs). In addition, the IO&M  
208 and ECSPM adopt the most current versions of the VDOT Drainage Manual, the Virginia Erosion and Sediment  
209 Control Handbook, Virginia Stormwater BMP Clearinghouse Website ([www.vwrrc.vt.edu/swc](http://www.vwrrc.vt.edu/swc)), and the Virginia  
210 Stormwater Management Handbook as the City's routine reference sources.

211  
212 Section 38-413 (Long-term maintenance of permanent stormwater facilities) of the City Code requires submission of  
213 a construction record drawing of permanent stormwater management facilities as well as the recording of an  
214 instrument for long-term responsibility. The City will provide verification that the stormwater management facilities  
215 are maintained as designed through inspection and enforcement as required to maintain a compliant VSMP.

216 **Additional Legal Authority Modifications or New Legal Authorities Necessary**

217 The City does not anticipate requiring additional or new legal authorities in order to comply with the compliance  
218 expectations for controlling POC loads from New Sources.

219 **IV. Control of POC Loads from Existing Sources**

220 **Compliance Expectations**

221 The City is required to estimate the POC loads discharged through its MS4 using Table 2 c in the MS4 General  
222 Permit and calculate the required annual load reductions to these POC loads using Table 3 c in the MS4 General  
223 Permit. The City must implement sufficient Means and Methods to reduce the POC annual loads from Existing  
224 Sources based on these City calculations.

225 **Compliance Assessment**

226 The City intends to meet the POC annual load reduction requirements for Existing Sources by implementing a  
227 combination of the following Means and Methods:

- 228  
229
  - Street Sweeping
  - Redevelopment on prior developed lands
    - Initiating construction between July 1, 2009 and June 30, 2014
    - Initiating construction July 1, 2014 and later
- 230  
231  
232

233

234 Street Sweeping

235 The City will conduct street sweeping on public streets and roadways. The City has legal authority to conduct street  
236 sweeping on the streets and roads located within the City limits.

237 Redevelopment of Prior Developed Lands

238 The City will credit POC reductions from Existing Source loads associated with redevelopment of prior developed  
239 lands. The City will credit reductions to Existing Source loads from both those projects initiating construction  
240 between July 1, 2009 and June 30, 2014 and those initiating construction after July 1, 2014.

241  
242 As part of the City's stormwater management program between July 1, 2009 and June 30, 2014, the City required  
243 through Chapter 38, that water quality designs for prior developed lands be implemented so that "the nonpoint  
244 source pollutant load shall not exceed the greater of (a) the pollutant load, based on existing conditions, minus 10  
245 percent; or (b) the pollutant load based on an ALCC of 16 percent IP."

246  
247 As of July 1, 2014, Chapter 38 requires water quality designs for prior developed lands to meet the minimum VSMP  
248 requirements for redevelopment, which require that as part of redevelopment, water quality designs include a  
249 reduction of the phosphorus annual load by 20% for projects disturbing one acre or more and 10% for projects  
250 disturbing less than one acre with an exception for single family residences that are not part of a common plan of  
251 development or sale.

252  
253 Chapter 38 also includes the legal authority for the City to ensure verification of long term maintenance of these  
254 facilities by requiring a dedicated easement in order that the City can provide maintenance or a maintenance  
255 agreement insuring that private maintenance is completed.

256 ***Additional Legal Authority Modifications or New Legal Authorities Necessary***

257 The City does not require any additional or new legal authorities in order to comply with the compliance expectations  
258 for controlling POC loads from Existing Sources.

259

260

261 **Chapter 3: Means and Methods to Address Discharges from New Sources**

262 The City will utilize its DEQ-approved VSMP Program as the Means and Methods to address discharges from New  
263 Sources. The VSMP Program includes individual Means and Methods to design, construct, inspect and maintain  
264 stormwater management facilities. Individual descriptions of these Means and Methods can be found in the City's  
265 MS4 Annual Report for Year One (July 2013-June 2014) and include:

- 266
- 267 • BMP 4.5-Site Plan Review—"This is being conducted as required for the State regulated program requirements  
268 and on-going."
- 269
- 270 • BMP 4.6-VSMP—"As a State (DEQ) Department approved VSMP Authority, effective July 1, 2014, the program  
271 is in compliance with the State Law and Regulation requirements and on-going."
- 272
- 273 • BMP 5.1-BMP Inspection--"Reference is made to the City's Stormwater Best Management Practices and  
274 Operation and Maintenance Plan (IO&M Plan) and ongoing for both private and public facilities."
- 275

276 As a result of the implementation of these Means and Methods:

- 277
- 278 • Stormwater management facilities for New Sources that obtain plan approval after July 1, 2014 will be designed  
279 and implemented to meet the new water quality design criteria found at 9VAC25-870-63.
- 280
- 281 • Stormwater management facilities for New Sources on prior development lands that obtain plan approval after  
282 July 1, 2014 will be designed and implemented to reduce existing pollutant loads by 20% for land disturbing  
283 activities greater than one acre and 10% for regulated land disturbing activities less than one acre. Reductions  
284 to pollutant annual loads will be applied towards meeting the required Existing Source load reductions.
- 285
- 286 • As the City has identified zero (0) grandfathered projects, it has not selected Means and Methods to address  
287 increases in POC loads from grandfathered projects.
- 288
- 289 • New Sources initiating construction between July 1, 2009 and June 30, 2014 were required to meet the water  
290 quality design criteria equivalent to an ALCC of 16% IP.
- 291
- 292 • The City will verify the long-term maintenance and upkeep of stormwater management facilities.
- 293

294 By continuing to implement both a VESCP and a VSMP in a manner consistent and compliant with the applicable  
295 statutes and regulations and as described in the City's MS4 Program Plan, the City will demonstrate adequate  
296 progress during this permit term towards achieving TMDL wasteload allocations consistent with the assumptions and  
297 requirements of the Chesapeake Bay TMDL and implementation to the maximum extent practicable for addressing  
298 loads from New Sources.

299

300 **Chapter 4: Estimated Existing Source Loads and Calculated Total POC**  
 301 **Required Reductions**

302 Stormwater runoff discharging through MS4 outfalls discharges into the Rappahannock Tidal Fresh (RPPTF)  
 303 Chesapeake Bay Water Quality Segment-Shed. The City’s Existing Source loads based on these regulated acres  
 304 are found in Table 2. The required POC requirements for this TMDL Action Plan are found in Table 3. As of July 1,  
 305 2009, the City provided MS4 service to approximately 3,149 acres (1,789 impervious urban; 1,360 pervious urban)  
 306 of land. This includes the total acreage included in both the 2000 and 2010 Urbanized Areas and other MS4s  
 307 physically interconnected with the City stormwater infrastructure. Acreages were calculated using land uses and  
 308 associated acreages identified in the document titled, “Estimating Impervious Surface Area: A Comparative  
 309 Assessment of CITYgreen and NOAA’s Impervious Surface Analysis Tool (ISAT) Methodologies (Final Draft).” The  
 310 land uses identified in the referenced document were City-wide; thus, accounting for all Existing Source regulated  
 311 acreage located within the City (i.e., 2000 and 2010 Urbanized Areas). The acreage attributed to the City’s MS4  
 312 does not include the contributing acreage of the two other MS4s operating within the Fredericksburg jurisdictional  
 313 boundaries or the lands owned by the U.S. federal government.

314  
 315 The Virginia Department of Transportation (VDOT) has regulatory control over 254.3 acres of land within the City.  
 316 The City estimates that 80% of the VDOT MS4 acreage is impervious, which equates to 203.4 acres of impervious  
 317 urban land use and 50.9 acres of pervious urban land use. The University of Mary Washington (UMW) operates an  
 318 MS4 that serves 242.3 acres located within the heart of the City. The City estimates that 45% of the UMW MS4  
 319 acreage is impervious, which equates to 109.0 acres of impervious urban land use and 133.2 acres of pervious  
 320 urban land use. In addition to the two regulated MS4s, the National Park Service (NPS) owns 122.5 acres of  
 321 parkland including the Fredericksburg National Cemetery. The City estimates that 9% of the NPS acreage is  
 322 impervious, which equates to 11.0 acres of impervious urban land use and 111.5 acres of pervious urban land use.  
 323 As the City continues to refine its drainage infrastructure with other regulated MS4s, such as VDOT, the City  
 324 reserves the right to redefine the actual acreage for which it is responsible for pollutant reductions.  
 325  
 326

Table 2: City of Fredericksburg MS4 Existing Source Loads for the Rappahannock River Basin

Subsource	Pollutant	Total Existing Acres Served by MS4 (6/30/09)	2009 EOS Loading Rate (lbs./acre)	Estimated Total POC Load Based on 2009 Progress Run by land use	Estimated Total POC Load, lbs.
Regulated Urban Impervious	Nitrogen	1,789	9.38	16,777	24,037
Regulated Urban Pervious		1,360	5.34	7,260	
Regulated Urban Impervious	Phosphorus	1,789	1.41	2,522	3,039
Regulated Urban Pervious		1,360	0.38	517	
Regulated Urban Impervious	Total Suspended Solids	1,789	423.97	758,313	834,459
Regulated Urban Pervious		1,360	56.01	76,146	

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 328

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Table 3: City of Fredericksburg MS4 Estimated Rappahannock River Pollutant Reductions Required During First Permit Cycle

Subsource	Pollutant	Total Existing Acres Served by MS4 (6/30/09)	First Permit Cycle Required Reduction in Loading Rate (lbs./acre)	Total Reduction Required First Permit Cycle (lbs.) by land use	Total Reduction Required First Permit Cycle (lbs.)
Regulated Urban Impervious	Nitrogen	1,789	0.04	71.6	98.8
Regulated Urban Pervious		1,360	0.02	27.2	
Regulated Urban Impervious	Phosphorus	1,789	0.01	17.9	20.6
Regulated Urban Pervious		1,360	0.002	2.7	
Regulated Urban Impervious	Total Suspended Solids	1,789	4.24	7,585.4	7,925.4
Regulated Urban Pervious		1,360	0.25	340.0	

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333 **Chapter 5: Means and Methods to Meet the Required Reductions and**  
334 **Schedule**

335 The City has identified the following Means and Methods for implementation during the current permit cycle to meet  
336 the required POC of 98.8 lbs. of nitrogen, 20.6 lbs. of phosphorus, and 7,925.4 lbs. of sediment from the annual  
337 Existing Sources stormwater discharges:

- 338
- 339 • Redevelopment on prior-developed lands
  - 340 ○ Initiating construction between July 1, 2009 and June 30, 2014
  - 341 ○ Initiating construction July 1, 2014 and later
- 342
- 343 • Street Sweeping

344 **I. Redevelopment on prior developed lands**

345 The City will credit POC reductions from Existing Sources resulting from redevelopment on prior developed lands  
346 towards meeting the reduction requirements. As the City cannot guarantee the schedule or quantify the pollutant  
347 reductions gained by redevelopment on prior developed lands, the City will not utilize this Mean and Method of POC  
348 reduction for compliance planning in this plan. However, the City will apply credit towards meeting the associated  
349 POC reductions from Existing Sources towards as follows:

351 Reductions from Redevelopment of Existing Sources Initiating Construction between July 1, 2009 and  
352 June 30, 2014

353 The City will coordinate review and identification of reductions from redevelopment of these Existing Sources in  
354 conjunction with its on-going 2015 Historical BMP Data Cleanup. Review results and associated creditable  
355 reductions will be submitted as part of the FY2016 (PY03) MS4 Annual Report with the associated reductions  
356 credited towards meeting the required annual Existing Source reduction requirements.

358 Reductions from Redevelopment of Existing Sources Initiating Construction July 1, 2014 and later

359 The City will track and quantify POC reductions resulting from redevelopment of Existing Sources initiating  
360 construction after July 1, 2014. Reductions resulting from redevelopment of Existing Sources that initiate  
361 construction between July 1, 2014 and June 30, 2015 will be reported in conjunction with the POC reductions for  
362 redevelopment occurring between July 1, 2009 and June 30, 2014. Reductions resulting from redevelopment of  
363 Existing Sources that initiate construction after July 1, 2015 will be reported annually with the MS4 Annual Report.

365 **II. Street Sweeping**

366 The City of Fredericksburg has established an updated street sweeping schedule that consists of 13 separate routes  
367 totaling 119.62 lane miles of City streets as of February 24, 2015 (Appendix 2). The City staffs two full-time street  
368 sweeper operators and has a fleet of three street sweepers (two regenerative air sweepers with water tanks and dust  
369 control and one mechanical broom with a water tank and dust control). Two street sweepers are regularly in  
370 operation with the third used as a spare, when necessary.

371

372 The City will meet the required pollutant reductions for Existing Sources identified in Table 4 primarily through the  
373 use of a street sweeping program. Using the Mass Loading Approach described in Appendix V.G of DEQ Guidance

374 Memo No. 15-2005, the City has determined that its Street Sweeping program will be required to collect a minimum  
 375 of 56,457.1 lbs. (28.2 tons) of street sweeping debris annually in order to account for the required reduction in POCs  
 376 from Existing Sources (Table 4).  
 377

Table 4: Required Amount of Annual Street Sweepings Required to Meet the Required Existing Source Reductions

Targets		Conversion Factors			Total Collections Required	
Pollutant	5% Reduction Target	Lbs. per Dry Weight	Particle Size Distribution	Dry Weight	Street Sweepings, lbs.	Street Sweepings, tons
Nitrogen	98.8	0.0025	1.00	0.70	56,457.1	28.2
Phosphorus	20.6	0.0010	1.00	0.70	29,428.6	14.7
TSS	7,925.4	1.00	0.30	0.70	37,740.0	18.9

378

379 **III. Proposed Schedule and Milestones**

380 The City proposes the following (Table 5) and associated milestones to ensure that the required annual reductions in  
 381 pollutant loads from Existing Sources are met:

- 382
- 383 ○ The City will conduct sufficient street sweeping to collect a minimum of 56,457.1 lbs. (28.2 tons) of debris  
 384 from City streets and roads annually.
- 385 ○ The City will retain scale receipts documenting disposal of street sweepings in the selected landfill. These  
 386 scale receipts will be available upon request.
- 387 ○ The City will report on the total weight of the street sweeping debris collected as part of its MS4 Annual  
 388 Report and will certify that the required annual reductions in pollutant loads from Existing Sources have been  
 389 met.
- 390 ○ The City will identify and report on the total number of reductions attributable to redevelopment on prior-  
 391 developed lands initiating construction during the reporting period.

392

393 Table 5: City of Fredericksburg Implementation Schedule for Meeting Existing Source Load Reductions

Means and Methods	FY2014	FY2015	FY2016	FY2017	FY2018
Redevelopment on prior-developed lands	---	---	---	---	---
Complete review and quantify permanent POC reductions from Existing Sources initiating construction between July 1, 2009 and June 30, 2014	---	---	X	---	---
Complete review and quantify permanent POC reductions from Existing Sources initiating construction between July 1, 2014 and June 30, 2015	---	---	X	---	---
Complete review and quantify permanent POC reductions from Existing Sources initiating construction after July 1, 2015	---	---	---	X	X
Street sweeping	X	X	X	X	X

394

395 In addition to the City's street sweeping commitment, the City will continue to require and track permanent  
 396 reductions in annual Existing Source loads resulting from the installation of stormwater management facilities on  
 397 prior developed lands required as part of redevelopment in the City. As the City cannot predict when private

398 development may occur on these lands, the City cannot use associated reductions in development of a compliance  
399 schedule. However, as redevelopment on prior developed lands occurs, the City will apply the associated POC load  
400 reductions towards meeting its overall reductions to Existing Source loads.

401  
402 The City also retains the ability to use adaptive management to further refine its strategy for meeting the POC  
403 reductions from Existing Sources, if it determines that the proposed schedule cannot be met. This adaptive  
404 management includes the potential water quality credits if warranted to ensure that the required reductions are met.

405  
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407 **Chapter 6: Means and Methods to Offset Increased Loads from New**  
408 **Sources Initiating Construction between July 1, 2009 and June 30, 2014**

409 Between July 1, 2009 and June 30, 2014, the City conducted plans review and approval for projects associated with  
410 new development. This plan review required that stormwater management be designed to meet an ALCC of 16%  
411 IP. As such, the City had previously implemented the Means and Methods necessary to address these POC loads  
412 and is not required to offset any increase from New Sources initiating construction during the identified time period.

413  
414 The City does not need to implement any additional Means and Methods as the City's proactive actions previously  
415 addressed the design requirements necessary to offset the increased loads from New Sources.

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417 **Chapter 7: Means and Methods to Offset Increased Loads from**  
418 **Grandfathered Projects that begin Construction after July 1, 2014**

419 In order to be considered a grandfathered project, a land disturbing activity must not have obtained coverage under  
420 the Virginia General Permit for Stormwater from Construction Activities or begun land disturbance prior to July 1,  
421 2014 while meeting the following criteria prior to July 1, 2012:

- 422
- 423 • The City must have approved [a proffered or conditional zoning plan, zoning with a plan of development,  
424 preliminary or final subdivision plat, preliminary or final site plan, or any document determined by the  
425 locality] to be equivalent.
  - 426
  - 427 • The approved document must have provided a layout as defined in 9VAC25-870-10.
  - 428
  - 429 • The approved document would demonstrate compliance with the Part II C technical criteria (9VAC25-870-  
430 96).
  - 431

432 In order for a City project to be considered grandfathered, the City must have obligated full or partial funding for the  
433 project or approved a stormwater management plan prior to July 1, 2012; however, the project had not obtained  
434 coverage under the Virginia General Permit for Stormwater from Construction Activities or begun land disturbance  
435 prior to July 1, 2014. Finally, City projects, where funding was obligated from governmental bonding or public debt  
436 financing prior to July 1, 2012, is considered grandfathered.

437

438 The City has determined that zero (0) projects exists that meet the requirements necessary to be considered  
439 grandfathered.

440

441 **Chapter 8: List of Future Projects, and Associated Acreage, that Qualify as**  
442 **Grandfathered**

443 Upon review, the City has determined that there are zero (0) grandfathered projects, totaling 0.00 acres, applicable  
444 under the VSMP grandfathering regulations.

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446 **Chapter 9: Estimate of the Expected Cost to Implement the Necessary**  
447 **Reductions**

448 The City estimates that it will cost \$546,721.08 to meet the required reductions in Existing Sources as identified in  
449 this TMDL Action Plan.

450  
451 This estimated cost is based on FY2015 expenses with a 3% increase for each of the remaining fiscal years covered  
452 under the current MS4 General Permit. Additional City expenses attributable to reductions in Existing Sources as a  
453 result of redevelopment on prior-developed lands are funded as part of the City's VSMP.

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456 **Chapter 10: Public Comments on the Draft TMDL Action Plan**

457

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459 **Chapter 11: Annual Reporting Requirements and Future Steps**

460 The City will include each of the following with its MS4 Annual Report associated with the current MS4 General  
 461 Permit Cycle:

- 462
- 463 • A summary on the development and implementation of NMPs and its compliance with the MS4 General  
 464 Permit milestones
- 465
- 466 • A summary on the implementation of the VESCP and its compliance with the MS4 General Permit  
 467
- 468 • A summary of the implementation of the VSMP and its compliance with the MS4 General Permit including  
 469 an electronic list of:
  - 470
  - 471 ○ Stormwater management facilities implemented during the reporting period as part of new  
 472 development for New Sources that includes the information required in Section II B 5 e of the MS4  
 473 General Permit
  - 474 ○ Stormwater management facilities implemented as part of development on previously developed  
 475 land during the reporting period for Existing Sources that includes the information required in  
 476 Section II B 5 e of the MS4 General Permit
  - 477
- 478 • A summary report on the implementation of the schedule and milestones for meeting the required Existing  
 479 Source annual load reductions including:
  - 480 ○ The total weight of street sweepings collected annually
  - 481 ○ Certification that a minimum of 56,457.1 lbs. (28.2 tons) of street sweepings have been collected
  - 482 ○ The applicable Existing Source reductions attributable to redevelopment on prior developed lands
  - 483
- 484 • A summary of the expected POC Means and Methods that will be implemented during the next permit year  
 485 and their expected progress towards meeting the required annual POC reductions.
- 486

487 Implementation of this TMDL Action Plan will result in sufficient implementation of Means and Methods to meet the  
 488 compliance targets identified in the Special Condition. However, if the City is required to rely on the purchase of  
 489 credits, either for permanent or temporary compliance, it will include documentation of such purchase as part of its  
 490 reapplication for MS4 General Permit coverage due to DEQ in March 2018.

491

492 Also submitted with the City's reapplication package will be the second phase of the TMDL Action Plan. The second  
 493 phase of the TMDL Action Plan will include<sup>1</sup>:

- 494
- 495 • A list of Means and Methods, including an implementation schedule for the FY2019-FY2024 MS4 General  
 496 Permit cycle, that will result in the reduction of annual POC loads from Existing Sources of:
  - 497 ○ 691 lbs. of nitrogen
  - 498 ○ 144 lbs. of phosphorus
  - 499 ○ 55,477 lbs. of sediment
  - 500
  - 501
- 502

---

<sup>1</sup> Contents of the next phase of the City of Fredericksburg Chesapeake Bay TMDL Action Plan are based on the current MS4 General Permit. Future modifications to the TMDL and MS4 General Permit Reapplication requirements may modify the current expectations included in this TMDL Action Plan.

503 **Appendix 1**  
504 **VA General Permit for Discharges of Stormwater from Small MS4s Special**  
505 **Condition for the Chesapeake Bay**

506

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## VA General Permit for Discharges of Stormwater from Small MS4s Special Condition for the Chesapeake Bay

507 C. Special condition for the Chesapeake Bay TMDL. The Commonwealth in its Phase I and Phase II Chesapeake Bay  
 508 TMDL Watershed Implementation Plans (WIP) committed to a phased approach for MS4s, affording MS4 operators up to three  
 509 full five-year permit cycles to implement necessary reductions. This permit is consistent with the Chesapeake Bay TMDL and the  
 510 Virginia Phase I and II WIPs to meet the Level 2 (L2) scoping run for existing developed lands as it represents an implementation  
 511 of 5.0% of L2 as specified in the 2010 Phase I WIP. Conditions of future permits will be consistent with the TMDL or WIP  
 512 conditions in place at the time of permit issuance.

513 1. Definitions. The following definitions apply to this state permit for the purpose of the special condition for discharges  
 514 in the Chesapeake Bay Watershed:

515 "Existing sources" means pervious and impervious urban land uses served by the MS4 as of June 30, 2009.

516 "New sources" means pervious and impervious urban land uses served by the MS4 developed or redeveloped on or  
 517 after July 1, 2009.

518 "Pollutants of concern" or "POC" means total nitrogen, total phosphorus, and total suspended solids.

519 "Transitional sources" means regulated land disturbing activities that are temporary in nature and discharge through  
 520 the MS4.

521 2. Chesapeake Bay TMDL planning.

522 a. In accordance with Table 1, the operator shall develop and submit to the department for its review and  
 523 acceptance an approvable Chesapeake Bay TMDL Action Plan. Unless specifically denied in writing by the  
 524 department, this plan becomes effective and enforceable 90 days after the date received by the department. The  
 525 plan shall include:

526 (1) A review of the current MS4 program implemented as a requirement of this state permit including a review of  
 527 the existing legal authorities and the operator's ability to ensure compliance with this special condition;

528 (2) The identification of any new or modified legal authorities such as ordinances, state and other permits, orders,  
 529 specific contract language, and interjurisdictional agreements implemented or needing to be implemented to meet  
 530 the requirements of this special condition;

531 (3) The means and methods that will be utilized to address discharges into the MS4 from new sources;

532 (4) An estimate of the annual POC loads discharged from the existing sources as of June 30, 2009, based on the  
 533 2009 progress run. The operator shall utilize the applicable versions of Tables 2 a-d in this section based on the  
 534 river basin to which the MS4 discharges by multiplying the total existing acres served by the MS4 on June 30,  
 535 2009, and the 2009 Edge of Stream (EOS) loading rate:

536

<b>Table 2 a: Calculation Sheet for Estimating Existing Source Loads for the James River Basin</b>				
<b>*Based on Chesapeake Bay Program Watershed Model Phase 5.3.2</b>				
<b>Subsource</b>	<b>Pollutant</b>	<b>Total Existing Acres Served by MS4 (6/30/09)</b>	<b>2009 EOS Loading Rate (lbs./acre)</b>	<b>Estimated Total POC Load Based on 2009 Progress Run</b>
Regulated Urban Impervious	Nitrogen		9.39	
Regulated Urban Pervious			6.99	
Regulated Urban Impervious	Phosphorus		1.76	
Regulated Urban Pervious			0.5	
Regulated Urban Impervious	Total Suspended Solids		676.94	
Regulated Urban Pervious			101.08	

537

Table 2 b: Calculation Sheet for Estimating Existing Source Loads for the Potomac River Basin				
*Based on Chesapeake Bay Program Watershed Model Phase 5.3.2				
Subsource	Pollutant	Total Existing Acres Served by MS4 (6/30/09)	2009 EOS Loading Rate (lbs./acre)	Estimated Total POC Load Based on 2009 Progress Run
Regulated Urban Impervious	Nitrogen		16.86	
Regulated Urban Pervious			10.07	
Regulated Urban Impervious	Phosphorus		1.62	
Regulated Urban Pervious			0.41	
Regulated Urban Impervious	Total Suspended Solids		1,171.32	
Regulated Urban Pervious			175.8	

538

539

Table 2 c: Calculation Sheet for Estimating Existing Source Loads for the Rappahannock River Basin				
*Based on Chesapeake Bay Program Watershed Model Phase 5.3.2				
Subsource	Pollutant	Total Existing Acres Served by MS4 (6/30/09)	2009 EOS Loading Rate (lbs./acre)	Estimated Total POC Load Based on 2009 Progress Run
Regulated Urban Impervious	Nitrogen		9.38	
Regulated Urban Pervious			5.34	
Regulated Urban Impervious	Phosphorus		1.41	
Regulated Urban Pervious			0.38	
Regulated Urban Impervious	Total Suspended Solids		423.97	
Regulated Urban Pervious			56.01	

540

541

542

Table 2 d: Calculation Sheet for Estimating Existing Source Loads for the York River Basin				
*Based on Chesapeake Bay Program Watershed Model Phase 5.3.2				
Subsource	Pollutant	Total Existing Acres Served by MS4 (6/30/09)	2009 EOS Loading Rate (lbs./acre)	Estimated Total POC Load Based on 2009 Progress Run
Regulated Urban Impervious	Nitrogen		7.31	
Regulated Urban Pervious			7.65	
Regulated Urban Impervious	Phosphorus		1.51	
Regulated Urban Pervious			0.51	
Regulated Urban Impervious	Total Suspended Solids		456.68	
Regulated Urban Pervious			72.78	

543

544 (5) A determination of the total pollutant load reductions necessary to reduce the annual POC loads from existing  
 545 sources utilizing the applicable versions of Tables 3 a-d in this section based on the river basin to which the MS4  
 546 discharges. This shall be calculated by multiplying the total existing acres served by the MS4 by the first permit  
 547 cycle required reduction in loading rate. For the purposes of this determination, the operator shall utilize those  
 548 existing acres identified by the 2000 U.S. Census Bureau urbanized area and served by the MS4.

549

Table 3 a: Calculation Sheet for Determining Total POC Reductions Required During this Permit Cycle for the James River Basin				
*Based on Chesapeake Bay Program Watershed Model Phase 5.3.2				
Subsource	Pollutant	Total Existing Acres Served by MS4 (6/30/09)	First Permit Cycle Required Reduction in Loading Rate (lbs./acre)	Total Reduction Required First Permit Cycle (lbs.)
Regulated Urban Impervious	Nitrogen		0.04	
Regulated Urban Pervious			0.02	
Regulated Urban Impervious	Phosphorus		0.01	
Regulated Urban Pervious			0.002	
Regulated Urban Impervious	Total Suspended Solids		6.67	
Regulated Urban Pervious			0.44	

550

551

552

Table 3 b: Calculation Sheet for Determining Total POC Reductions Required During this Permit Cycle for the Potomac River Basin				
*Based on Chesapeake Bay Program Watershed Model Phase 5.3.2				
Subsource	Pollutant	Total Existing Acres Served by MS4 (6/30/09)	First Permit Cycle Required Reduction in Loading Rate (lbs./acre)	Total Reduction Required First Permit Cycle (lbs.)
Regulated Urban Impervious	Nitrogen		0.08	
Regulated Urban Pervious			0.03	
Regulated Urban Impervious	Phosphorus		0.01	
Regulated Urban Pervious			0.001	
Regulated Urban Impervious	Total Suspended Solids		11.71	
Regulated Urban Pervious			0.77	

553

554

Table 3 c: Calculation Sheet for Determining Total POC Reductions Required During this Permit Cycle for the Rappahannock River Basin				
*Based on Chesapeake Bay Program Watershed Model Phase 5.3.2				
Subsource	Pollutant	Total Existing Acres Served by MS4 (6/30/09)	First Permit Cycle Required Reduction in Loading Rate (lbs./acre)	Total Reduction Required First Permit Cycle (lbs.)
Regulated Urban Impervious	Nitrogen		0.04	
Regulated Urban Pervious			0.02	
Regulated Urban Impervious	Phosphorus		0.01	
Regulated Urban Pervious			0.002	
Regulated Urban Impervious	Total Suspended Solids		4.24	
Regulated Urban Pervious			0.25	

555

556

557

Table 3 d: Calculation Sheet for Determining Total POC Reductions Required During this Permit Cycle for the York River Basin				
*Based on Chesapeake Bay Program Watershed Model Phase 5.3.2				
Subsource	Pollutant	Total Existing Acres Served by MS4 (6/30/09)	First Permit Cycle Required Reduction in Loading Rate (lbs./acre)	Total Reduction Required First Permit Cycle (lbs.)
Regulated Urban Impervious	Nitrogen		0.03	
Regulated Urban Pervious			0.02	
Regulated Urban Impervious	Phosphorus		0.01	
Regulated Urban Pervious			0.002	
Regulated Urban Impervious	Total Suspended Solids		4.60	
Regulated Urban Pervious			0.32	

558

559 (6) The means and methods, such as management practices and retrofit programs that will be utilized to meet the  
 560 required reductions included in subdivision 2 a (5) of this subsection, and a schedule to achieve those reductions.  
 561 The schedule should include annual benchmarks to demonstrate the ongoing progress in meeting those  
 562 reductions;

563 (7) The means and methods to offset the increased loads from new sources initiating construction between July 1,  
 564 2009, and June 30, 2014, that disturb one acre or greater as a result of the utilization of an average land cover  
 565 condition greater than 16% impervious cover for the design of post-development stormwater management  
 566 facilities. The operator shall utilize Table 4 to develop the equivalent pollutant load for nitrogen and total  
 567 suspended solids. The operator shall offset 5.0% of the calculated increased load from these new sources during  
 568 the permit cycle.

569 (8) The means and methods to offset the increased loads from projects as grandfathered in accordance with  
 570 9VAC25-870-48, that disturb one acre or greater that begin construction after July 1, 2014, where the project  
 571 utilizes an average land cover condition greater than 16% impervious cover in the design of post-development  
 572 stormwater management facilities. The operator shall utilize Table 4 to develop the equivalent pollutant load for  
 573 nitrogen and total suspended solids.

574 (9) The operator shall address any modification to the TMDL or watershed implementation plan that occurs during  
 575 the term of this state permit as part of its permit reapplication and not during the term of this state permit.

Table 4: Ratio of Phosphorus Loading Rate to Nitrogen and Total Suspended Solids Loading Rates for Chesapeake Bay Basins			
Ratio of Phosphorus to Other POCs (Based on All Land Uses 2009 Progress Run)	Phosphorus Loading Rate (lbs./acre)	Nitrogen Loading Rate (lbs./acre)	Total Suspended Solids Loading Rate (lbs./acre)
James River Basin	1.0	5.2	420.9
Potomac River Basin	1.0	6.9	469.2
Rappahannock River Basin	1.0	6.7	320.9
York River Basin	1.0	9.5	531.6

- 576 (10) A list of future projects and associated acreage that qualify as grandfathered in accordance with 9VAC25-  
577 870-48;
- 578 (11) An estimate of the expected costs to implement the requirements of this special condition during the state  
579 permit cycle; and
- 580 (12) An opportunity for receipt and consideration of public comment regarding the draft Chesapeake Bay TMDL  
581 Action Plan.
- 582 b. As part of development of the Chesapeake Bay TMDL Action Plan, the operator may consider:
- 583 (1) Implementation of BMPs on unregulated lands provided any necessary baseline reduction is not included  
584 toward meeting the required reduction in this permit;
- 585 (2) Utilization of stream restoration projects, provided that the credit applied to the required POC load reduction is  
586 prorated based on the ratio of regulated urban acres to total drainage acres upstream of the restored area;
- 587 (3) Establishment of a memorandum of understanding (MOU) with other MS4 operators that discharge to the  
588 same or adjacent eight digit hydrologic unit within the same basin to implement BMPs collectively. The MOU shall  
589 include a mechanism for dividing the POC reductions created by BMP implementation between the cooperative  
590 MS4s;
- 591 (4) Utilization of any pollutant trading or offset program in accordance with §§ 62.1-44.19:20 through 62.1-  
592 44.19:23 of the Code of Virginia, governing trading and offsetting;
- 593 (5) A more stringent average land cover condition based on less than 16% impervious cover for new sources  
594 initiating construction between July 1, 2009, and June 30, 2014, and all grandfathered projects where allowed by  
595 law; and
- 596 (6) Any BMPs installed after June 30, 2009, as part of a retrofit program may be applied towards meeting the  
597 required load reductions provided any necessary baseline reductions are not included.
- 598 3. Chesapeake Bay TMDL Action Plan implementation. The operator shall implement the TMDL Action Plan according  
599 to the schedule therein. Compliance with this requirement represents adequate progress for this state permit term  
600 towards achieving TMDL wasteload allocations consistent with the assumptions and requirements of the TMDL. For  
601 the purposes of this permit, the implementation of the following represents implementation to the maximum extent  
602 practicable and demonstrates adequate progress:
- 603 a. Implementation of nutrient management plans in accordance with the schedule identified in the minimum  
604 control measure in Section II related to pollution prevention/good housekeeping for municipal operations;
- 605 b. Implementation of the minimum control measure in Section II related to construction site stormwater runoff  
606 control in accordance with this state permit shall address discharges from transitional sources;
- 607 c. Implementation of the means and methods to address discharges from new sources in accordance with the  
608 minimum control measure in Section II related to post-construction stormwater management in new development  
609 and development of prior developed lands and in order to offset 5.0% of the total increase in POC loads between  
610 July 1, 2009, and June 30, 2014. Increases in the POC load from grandfathered projects initiating construction  
611 after July 1, 2014, must be offset prior to completion of the project; and
- 612 d. Implementation of means and methods sufficient to meet the required reductions of POC loads from existing  
613 sources in accordance with the Chesapeake Bay TMDL Action Plan.
- 614 4. Annual reporting requirements.
- 615 a. In accordance with Table 1, the operator shall submit the Chesapeake Bay Action Plan with the appropriate  
616 annual report.
- 617 b. Each subsequent annual report shall include a list of control measures implemented during the reporting period  
618 and the cumulative progress toward meeting the compliance targets for nitrogen, phosphorus, and total  
619 suspended solids.

620 c. Each subsequent annual report shall include a list of control measures, in an electronic format provided by the  
621 department, that were implemented during the reporting cycle and the estimated reduction achieved by the  
622 control. For stormwater management controls, the report shall include the information required in Section II B 5 e  
623 and shall include whether an existing stormwater management control was retrofitted, and if so, the existing  
624 stormwater management control type retrofit used.

625 d. Each annual report shall include a list of control measures that are expected to be implemented during the next  
626 reporting period and the expected progress toward meeting the compliance targets for nitrogen, phosphorus, and  
627 total suspended solids.

628 5. The operator shall include the following as part of its reapplication package due in accordance with Section III M:

629 a. Documentation that sufficient control measures have been implemented to meet the compliance target  
630 identified in this special condition. If temporary credits or offsets have been purchased in order to meet the  
631 compliance target, the list of temporary reductions utilized to meet the required reduction in this state permit and a  
632 schedule of implementation to ensure the permanent reduction must be provided; and

633 b. A draft second phase Chesapeake Bay TMDL Action Plan designed to reduce the existing pollutant load as  
634 follows:

635 (1) The existing pollutant of concern loads by an additional seven times the required reductions in loading rates  
636 using the applicable Table 3 for sources included in the 2000 U.S. Census Bureau urbanized areas;

637 (2) The existing pollutant of concerns loads by an additional eight times the required reductions in loading rates  
638 using the applicable Table 3 for expanded sources identified in the U.S. Census Bureau 2010 urbanized areas;

639 (3) An additional 35% reduction in new sources developed between 2009 and 2014 and for which the land use  
640 cover condition was greater than 16%; and

641 (4) Accounts for any modifications to the applicable loading rate provided to the operator as a result of TMDL  
642 modification.

643

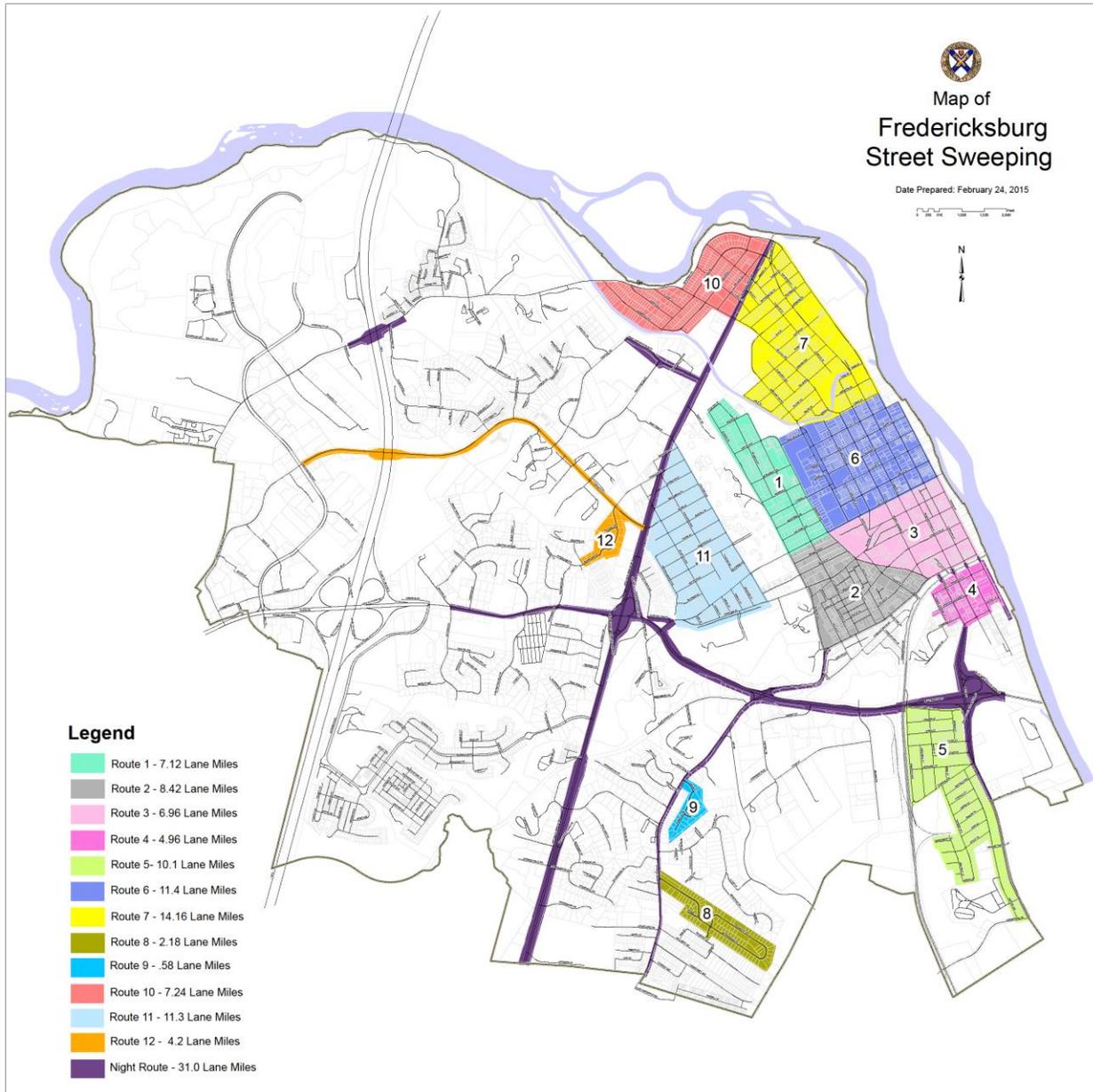
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644 Appendix 2 - City of Fredericksburg Street Sweeping Routes (as of  
645 February 24, 2015)

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Appendix 2 - City of Fredericksburg Street Sweeping Routes (as of February 24, 2015)



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648