

**Phase II MS4 General Permit
Program Plan Update**

Chesapeake Bay TMDL Action Plan



**DRAFT REPORT
JUNE 2015**

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1 Introduction

2 Discharges from municipal separate storm sewer systems (MS-4) are regulated under the Virginia
3 Stormwater Management Act, the Virginia Stormwater Management Program (VSMP) Permit
4 regulations, and the Clean Water Act as point source discharges. As a Phase II MS-4, the City of
5 Petersburg (Petersburg) developed this Chesapeake Bay TMDL Action Plan (Action Plan) pursuant to the
6 Special Condition for the Chesapeake Bay TMDL (Section I.C) of the City's Municipal Separate Storm
7 Sewer System (MS-4) Permit. To assist with the development of the Action Plan, the City utilized both
8 the Department of Environmental Quality's (DEQ) Chesapeake Bay TMDL Special Condition Guidance
9 Document (Guidance Memo No. 14-2012, and subsequent draft revisions dated 3/19/2015, herein
10 referred to as TMDL Guidance Document), and the General Permit for Discharges of Stormwater from
11 Small Municipal Separate Storm Sewer Systems (General Permit), which became effective July 1, 2013.

12 Development of the Action Plan is driven by the Chesapeake Bay TMDL which was approved by the US
13 Environmental Protection Agency (EPA) in December of 2010. Nitrogen, Total Phosphorous, and
14 Sediment are the Pollutants of Concern (POC) driving the need for required pollutant reductions in the
15 Chesapeake Bay Basin, which includes portions of Petersburg. It is anticipated, according to Virginia's
16 Watershed Implementation Plan (WIP) that the TMDL will be achieved within three permit cycles with
17 the following targets: 5% by June 30, 2018, followed by 35% and 60% in the subsequent permitting
18 cycles. For the purposes of this Action Plan, the primary focus will be on Permit Cycle 1 and the
19 associated 5% reduction requirements. The loadings and reductions have been provided for the
20 anticipated 35% and 60% targets for reference.

21 This Action Plan details the methodology and results used to develop the required plan components.
22 Detailed sections are provided within the report for the following tasks:

- 23 • **Review of Current MS4 Program and Existing Legal Authority** - Addresses Section I.C.2a(1)
24 and I.C.2.a(2) of the General Permit
- 25 • **Data Sources Utilized & Estimate of MS4 Regulated Acreages** – Addresses Section I.C.2.a(4)
26 and Section I.C.2.a(5) of the General Permit
- 27 • **Estimated POC Loads and Required Reductions from Existing Sources** – Addresses Section
28 1.C.2.a(4) and Section I.C.2.a(5) of the General Permit
- 29 • **Estimated POC Loads and Required Reductions from New and Grandfathered Sources** –
30 Addresses Section 1.C.2.a(7) and Section I.C.2.a(8) of the General Permit
- 31 • **Estimated POC Load Reductions from Existing BMPs** – Addresses Section I.C.2.a(6) of the
32 General Permit
- 33 • **Means & Methods Strategy, Schedule, & Estimated Costs** – Addresses I.C.2.a(6) and
34 I.C.2.a(11) of the General Permit
- 35 • **List of Future Grandfathered Projects** – Addresses I.C.2.a(10) of the General Permit
- 36 • **Public Comment Process** – Addresses I.C.2.a(12) of the General Permit



1 **Current Program and Existing Legal Authority**

2 Petersburg has reviewed its MS4 Program to evaluate its ability to comply with the Special Condition for
3 the Chesapeake Bay TMDL (Section I.C) of the General Permit. The following is a list of the Petersburg's
4 relevant existing legal authorities and policies applicable to reducing the pollutants identified the
5 Chesapeake Bay TMDL:

- 6 • MS4 Program Plan
- 7 • Illicit Discharge Ordinance (Section 122-106, 122-107, 122-108, & 122-109)
- 8 • Stormwater Management Ordinance (Section 50, Article IV)
- 9 • Stormwater Management Guidelines document
- 10 • Declaration of Covenants for Storm and Surface Water Facility and System Maintenance
11 agreement.

12 In addition, Petersburg has recently (2013) implemented a stormwater utility. The newly dedicated
13 funding source has provided Petersburg with the ability to address long-overdue repairs and upgrades to
14 existing drainage infrastructure, continue to meet existing regulatory requirements, and plan for new
15 regulatory requirements including local water quality protection and Chesapeake Bay TMDL target load
16 reductions.

17
18 Petersburg has reviewed its current MS4 Program and determined that the authorities as stated above
19 is sufficient for compliance with this special condition.

20 **New or Modified Legal Authority**

21 The existing authority, as stated above, is sufficient for compliance with this special condition.
22 Therefore, Petersburg does not require any new or modified legal authorities or policies in order to
23 meet the requirements of this special condition. However, Petersburg may choose to coordinate with
24 other adjacent MS4s and explore the idea of establishing memorandums of understanding (MOU) to
25 clarify MS4 service boundary line(s) and inter-jurisdictional responsibilities for POC loads and
26 subsequent required POC load reductions in the future.

27 **Means and Methods to Address Discharges from New Sources**

28 The City of Petersburg adhered to the technology based criteria under 9VAC25-870-96.C. Because the
29 technology based criteria assumes an average land cover condition of 16% for the design of post-
30 development stormwater management facilities, no additional reductions beyond the reduction
31 requirements for existing conditions as of June 30, 2009, are required under Special Condition 7 or 8.

32 To address discharges into the MS-4 from new sources (defined as pervious and impervious urban land
33 uses served by the MS-4 developed or redeveloped on or after July 1, 2009), Petersburg will adhere with
34 current VSMP regulations for the implementation of post-development stormwater management
35 facilities.



1 **Estimated Existing Source Loads and Calculated Total Pollutant of**
2 **Concern Required Reductions**

3 To facilitate the requirements of this section, the City of Petersburg has developed a methodology for
4 determining the size and extent of regulated area as of June 30, 2009 and a methodology for
5 determining the total regulated acres of urban pervious and urban impervious surface served by the
6 MS4 as of June 30, 2009. The methodology used in these calculations was informed by the
7 requirements of the General Permit, the TMDL Guidance Document, referenced previously in this
8 document, and training documents from the DEQ training session “Chesapeake Bay TMDL Action Plan
9 Informational Session” (December 2014).

10 **Regulated Area Determination**

11 It is understood that the Phase II permittee boundary for the first permit cycle can be determined from
12 the 2000 Census Designated Urbanized Area, but that with subsequent permit cycles the regulated area
13 will expand to the 2010 Census Designated Urbanized Area. Petersburg determined that it was in their
14 best interest to move forward in the first permit cycle using the 2010 Census Designated Urbanized Area
15 as this will be the defining area in future permit terms.

16 The determination of regulated area was largely performed using available GIS data and was informed
17 by the General Permit and the TMDL Guidance Document issued by Virginia Department of
18 Environmental Quality.

19 Petersburg’s jurisdictional boundary comprises approximately 14,663 acres. The following is a
20 breakdown of how the regulated area was defined.

Description	Acres	
City of Petersburg, City Limits	14,663.5	
Total Urbanized Area (within City Limits)	10,907.8	
Total Urbanized Area, Chesapeake Bay Watershed	7,685.6	
Excluded Properties		
Federal Properties (National Battlefield, Fort Lee)	933.8	
VDOT R/W (I-95, I-85, US 460)	286.5	
VPDES (General and Individual Permit Properties)	162.2	
Wetlands (Based on the National Wetland Inventory)	151.2	
Open Water	43.6	
Total Regulated Area, Chesapeake Bay Watershed Urbanized Area	6,108.3	

21 Illustrated below in Figure 1 is a graphical representation of the total regulated area presented above.

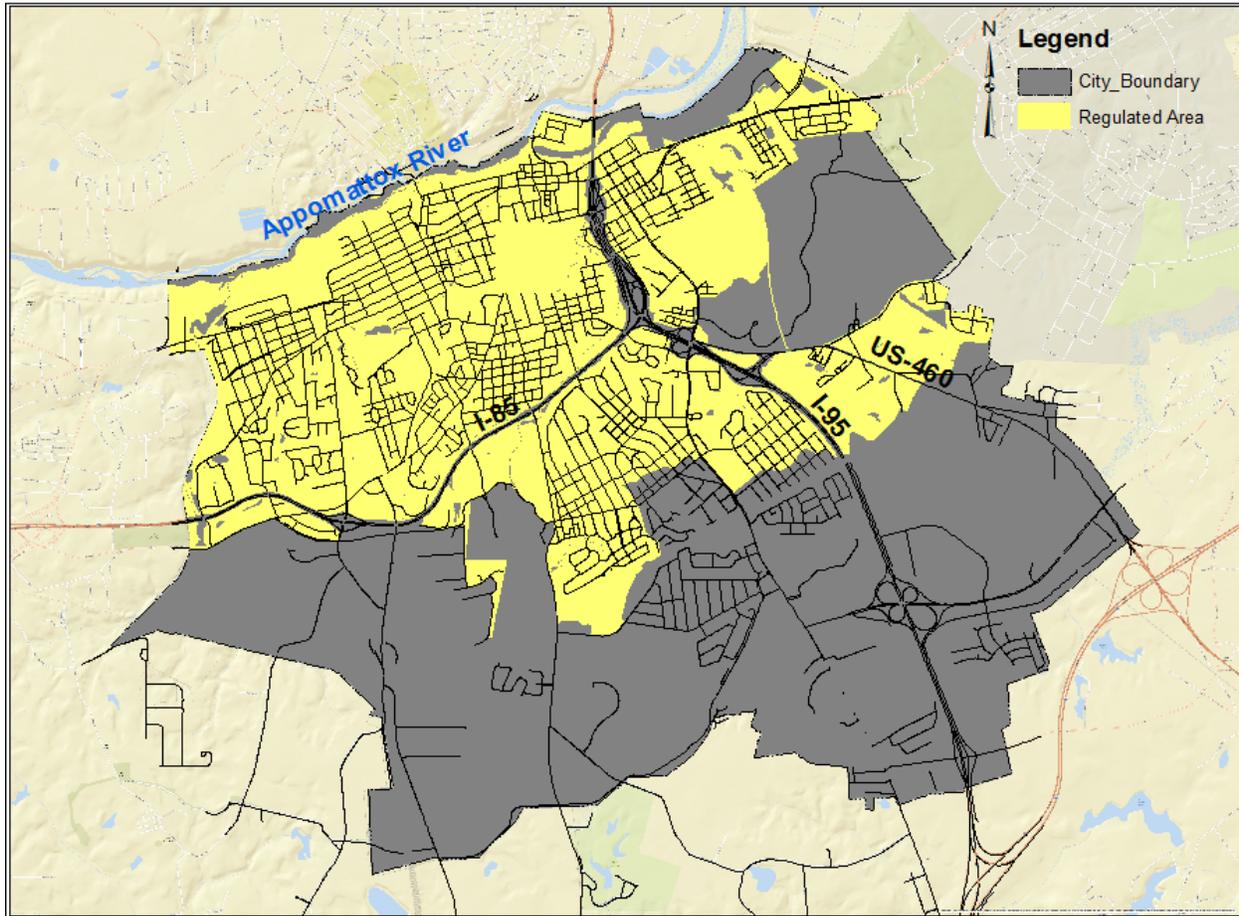


Figure 1. Map of the Regulated Area

1 **Excluded Lands**

2 Based on the TMDL Guidance Document, Petersburg is able to exclude from their regulated urban
3 impervious and regulated urban pervious cover calculations the following:

- 4 • Land regulated under any General VPDES permit that addresses industrial stormwater including
5 the General VPDES Permit for Stormwater Associated with Industrial Activity (VAR05), the
6 General Permit for Concrete Products Facilities (VAG11) and the Nonmetallic Mineral Processing
7 General Permit (VAR84).
- 8 • Lands regulated under an individual VPDES permit for industrial stormwater discharges
- 9 • Forested Lands
- 10 • Agricultural Lands
- 11 • Wetlands
- 12 • Open Waters



1 **VPDES Permit Holders**

2 VPDES permit holders were identified from a listing of permit holders that was downloaded from the
3 DEQ website. The parcels data was used to identify the property of these permit holders and exclude
4 this area from the regulated area. The following table lists each of the permit holders excluded from the
5 Petersburg Regulated Area.

6 **Table 1. VPDES Permit Holders within the City of Petersburg Excluded from Regulated Area**

Permit No	Facility Name	Address	Permit Type
VAR050686	Norfolk and Southern Petersburg Auto Ramp	999 Wagner Rd	VPDES General Permit for SW Associated w / Industrial Activity
VAR050693	UniTao Pharmaceuticals Limited Liability Company	2820 N Normandy Dr	VPDES General Permit for SW Associated w / Industrial Activity
VAR050698	Amsted Rail Company Incorporated	2580 Frontage Rd	VPDES General Permit for SW Associated w / Industrial Activity
VAR050702	Dominion Chemical Company - Puddledock Road	2050 Puddledock Rd	VPDES General Permit for SW Associated w / Industrial Activity
VAR051776	Boars Head Provisions Company Inc - Petersburg	1950 Industry Pl	VPDES General Permit for SW Associated w / Industrial Activity
VAR051793	Tri City Regional Disposal and Recycling Services	390 Industrial Dr	VPDES General Permit for SW Associated w / Industrial Activity
VAR051893	Atlantic Iron and Metal	30 Mill Rd	VPDES General Permit for SW Associated w / Industrial Activity
VAR051963	BleachTech LLC - Petersburg	2020 Bessemer Rd	VPDES General Permit for SW Associated w / Industrial Activity
VAR052160	Norfolk Southern Thoroughbred Bulk Terminal	1301 E Washington St	VPDES General Permit for SW Associated w / Industrial Activity
VAR052163	Valmont Virginia Galvanizing Incorporated	3535 Halifax Rd	VPDES General Permit for SW Associated w / Industrial Activity
VAR051101	Barksdale Oils Incorporated	1041 E Bank St	VPDES General Permit for SW Associated w / Industrial Activity
VAR051780	Progress Rail Services - QBS Bearing Plant	2745 Frontage Rd	VPDES General Permit for SW Associated w / Industrial Activity
VAR052097	D and M Auto Parts	1001 E Bank St	VPDES General Permit for SW Associated w / Industrial Activity
VAR052250	Barksdale Oils Incorporated	1041 E Bank St	VPDES General Permit for SW Associated w / Industrial Activity
7 VA0025437	South Central Wastewater Authority WWTF	900 Magazine Rd	VPDES Individual Permit

8 **Wetlands**

9 Wetland areas were excluded from the regulated area using the National Wetland Inventory data layer.

10 **Open Water**

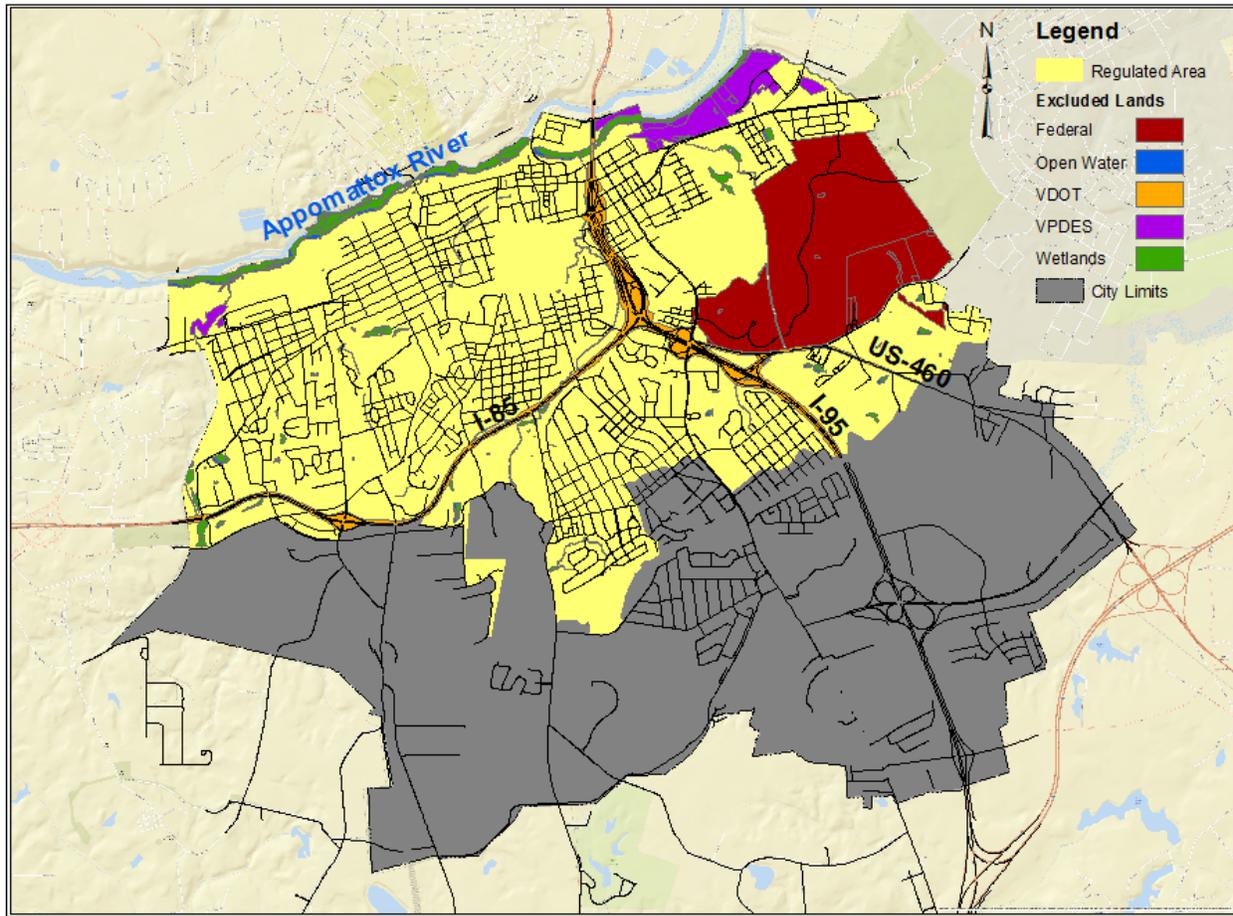
11 Petersburg maintains an open water GIS layer mapped as part of the land cover analysis performed in
12 2013. This layer was used to identify and exclude open waters from the regulated area.

13 **Agricultural Lands**

14 No agricultural lands are located within the urban area.

15 **Other Governmentally Owned & Operated Lands**

16 There are several sizeable properties located within the City of Petersburg that are owned and operated
17 by other governmental agencies. These properties have been identified using the parcels layer and
18 removed from the regulated area. The Petersburg National Battlefield is located within the City Limits
19 and within the 2010 US Census Urbanized Area. Fort Lee also owns and operates a parcel located near
20 the National Battlefield



1
2 **Figure 2. Map of Excluded Properties from the Regulated Urbanized Area**

3 **Land Cover Analysis**

4 Determining the land cover as of June 30, 2009 can be a difficult task. As part of Petersburg’s recent
5 adoption of a Stormwater Utility in 2013, significant effort was taken to provide an accurate depiction of
6 impervious and other land cover as of 2013 by which to base the billings. As such, GIS layers were
7 developed depicting the following land cover classifications (2013): pervious, impervious and forested.
8 According to recent MS4 Annual Reports, only approximately 190 acres of the City’s 14,668 acres have
9 been developed since June 30, 2009, most of
10 which was redevelopment. In recognizing this, it
11 was decided that the City of Petersburg’s
12 pollutant loads and subsequent load reductions
13 are based on the previously developed 2013 land
14 cover data. An analysis of the regulated area land
15 cover was performed using GIS. A summary of the land cover within the regulated area is presented in
16 Table 1.

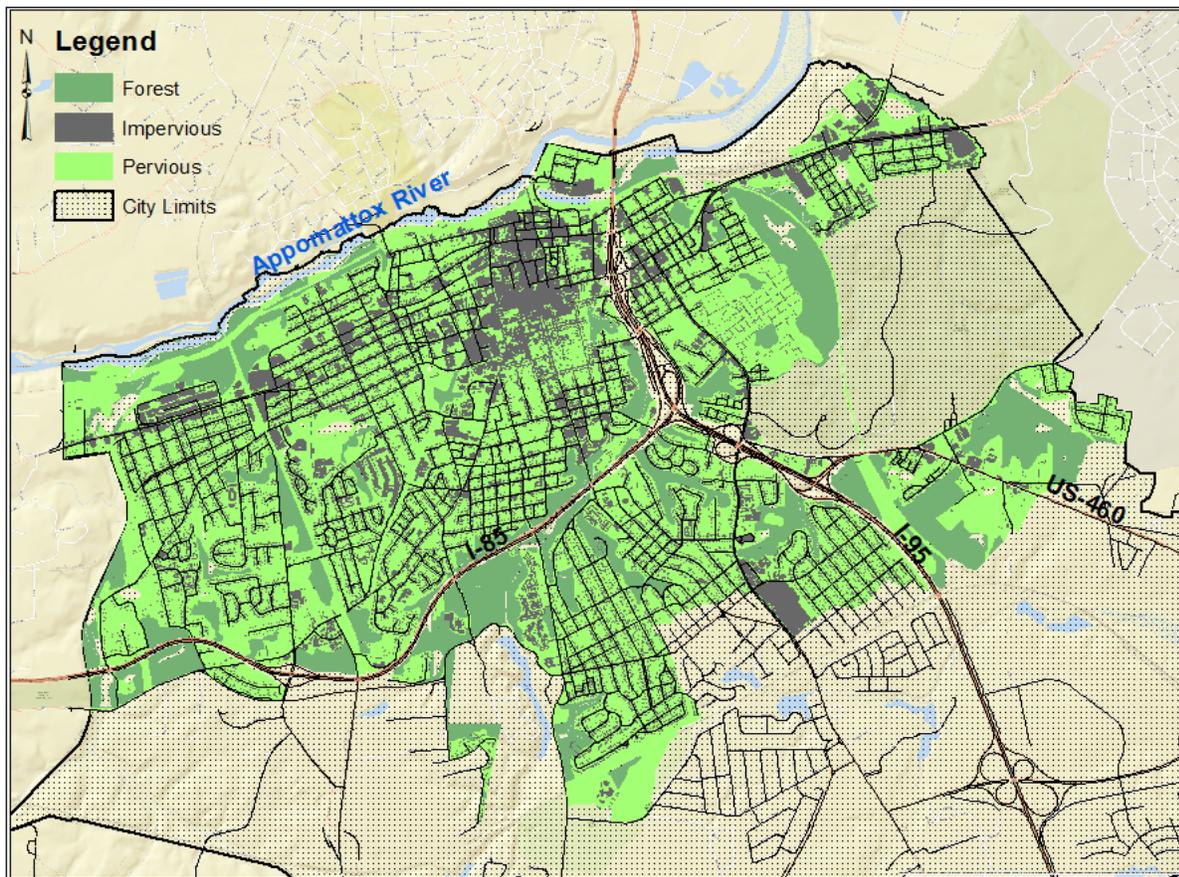
Table 2. Summary of Land Use Acreage in Regulated Area.

Forest	1,061	17%
Impervious	1,598	26%
Pervious	3,449	57%
Total	6,108	100%



1 **Forested Lands**

2 Forested lands remain within the regulated area and in the TMDL compliance calculations tables
3 presented in this Action Plan. The definition provided in the draft comments of the TMDL Guidance
4 Document provides a tree density criterion to determine forested lands. Petersburg does not have a
5 tree inventory of forested areas within the City and, as such, cannot demonstrate compliance with this
6 criterion. Due to the evolving definition of forested land and application of forested land in the
7 compliance calculations, it was decided that forested land would remain in the TMDL compliance
8 calculations as pervious cover. However, Petersburg reserves the right to revise calculations should the
9 definition and/or application of forested lands be revised in the future. Table 2 provides a breakdown of
10 the land cover analysis performed within the regulated area.



11
12 **Figure 3. Regulated Area Land-use Map**

13 **Determination of Estimated Existing Source Loads & Required Reductions**

14 Table 2a and Table 3a of the General Permit have been completed using the land cover breakdown
15 presented in Table 2. The pervious land use acreage used in Table 2a and Table 3a is the Pervious and
16 Forest land use acreage added together from Table 2. The estimated total Pollutant of Concern (POC)
17 loadings (Table 2a) and required reductions (Table 3a) for Nitrogen, Phosphorous, and Total Suspended
18 Solids (TSS) were calculated by multiplying the acreages for each land cover (Subsource), by the 2009
19 Edge of Stream (EOS) loading rate for the corresponding pollutant.



Table 2 a: Calculation Sheet for Estimating Existing Source Loads from 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)	2009 EOS Loading Rate (lbs/acres)	Estimated Total POC Load Based on 2009 Progress Run
Regulated Urban Impervious	Nitrogen	1,597.88	9.39	15,004.09
Regulated Urban Pervious		4,510.40	6.99	31,527.69
Regulated Urban Impervious	Phosphorus	1,597.88	1.76	2,812.27
Regulated Urban Pervious		4,510.40	0.5	2,255.20
Regulated Urban Impervious	Total Suspended solids	1,597.88	676.94	1,081,668.89
Regulated Urban Pervious		4,510.40	101.08	455,911.15

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)	2009 EOS Loading Rate (lbs/acres)	Estimated Total POC Load Based on 2009 Progress Run
Regulated Urban Impervious	Nitrogen	1,597.88	0.04	63.92
Regulated Urban Pervious		4,510.40	0.02	90.21
Regulated Urban Impervious	Phosphorus	1,597.88	0.01	15.98
Regulated Urban Pervious		4,510.40	0.002	9.02
Regulated Urban Impervious	Total Suspended solids	1,597.88	6.67	10,657.86
Regulated Urban Pervious		4,510.40	0.44	1,984.58



1 The calculations presented in Table 4 illustrate the required 5% reduction in pounds per year for
 2 Nitrogen, Phosphorous, and TSS are 274.21 lbs., 26.44 lbs., and 29,820.06 lbs. respectively. Along with
 3 the required 5% reductions, the total POC loads and the extrapolated values for the 35% and 60%
 4 reductions for the 2nd and 3rd permit cycles are shown in Table 3.

5 **Table 3. Summary of Extrapolated Reductions Anticipated for Future Permit Cycles**

Subsource	Pollutant	Estimated Total POC 2009	Total Reduction Required First Permit Cycle	Total Reduction Required Second Permit Cycle (40%)	Total Reduction Required Third Permit Cycle (100%)
Regulated Urban Impervious	Nitrogen	15,004.09	63.92	540.15	1,350.37
Regulated Urban Pervious		31,527.69	90.21	756.66	1,891.66
Regulated Urban Impervious	Phosphorus	2,812.27	15.98	179.99	449.96
Regulated Urban Pervious		2,255.20	9.02	65.40	163.50
Regulated Urban Impervious	TSS	1,081,668.89	10,657.86	86,533.51	216,333.78
Regulated Urban Pervious		455,911.15	1,984.58	15,956.89	39,892.23

	N	P	TSS
2018 Total Reduction	154.12	25.00	12,642.44
Anticipated 2023 Total Reduction	1,296.81	245.39	102,490.40
Anticipated 2028 Total Reduction	3,242.03	613.46	256,226.00

6 *Note: Loads are based on the 2013 land cover data. Refer to text for justification.

7 Means and Methods to Meet the Required Reductions and Schedule

8 Progress in achieving substantial pollutant load reductions requires a significant amount of planning,
 9 strategy development, and funding. The following section outlines the means (financial resources and
 10 planning) and methods (stormwater BMPs) to achieve the required reductions.

11 Financial Planning

12 As a small MS4 in the tidewater region of Virginia, regulatory mandates such as the General Permit for
 13 Discharges from Small Municipal Separate Storm Sewer Systems, the Virginia Stormwater Management
 14 Regulations, the Chesapeake Bay Preservation Act, and the Erosion and Sediment Control Law mandate
 15 Petersburg’s water quality control program. Each of these programs assign a variety of compliance tasks
 16 for the permit holders. Petersburg has developed a plan for funding the regulatory compliance tasks.

17 Petersburg has recently (2013) implemented a stormwater utility. The newly dedicated funding source
 18 has provided Petersburg with the ability to address long-overdue repairs and upgrades to existing
 19 drainage infrastructure, continue to meet existing regulatory requirements, and plan for new regulatory
 20 requirements including local water quality protection and Chesapeake Bay TMDL target load reductions.
 21 The revenues generated by the fee will be used to fund all stormwater-related services, which include
 22 enforcement of Petersburg’s stormwater ordinances, planning for future impacts, stormwater
 23 infrastructure maintenance and repairs, construction of necessary capital improvement projects and



1 associated property acquisitions. The fee will also pay for annual compliance requirements of
2 Petersburg’s General Permit.

3 Petersburg has been successfully pursuing grant opportunities that enable the City to align these
4 alternative funding sources with their initiative to comply with regulatory permit requirements. The City
5 of Petersburg received technical assistance support from the National Fish and Wildlife Foundation’s
6 (NFWF) Chesapeake Bay Stewardship Fund to develop and implement a Geographic Information System
7 (GIS) and Water Quality Master Plan to identify opportunities and implementation strategies to protect
8 local streams and the Chesapeake Bay. In addition, the City of Petersburg received an award from the
9 Virginia DEQ 2015 Historical Data Cleanup (funded by the EPA Chesapeake Bay Regulatory and
10 Accountability Program Grant) for the collection of historical developed/urban Best Management
11 Practice data (1985- present). It is anticipated that Petersburg will continue to seek grant opportunities
12 that align with their goal of regulatory compliance.

Compliance Planning

14 Petersburg has proactively developed a plan to achieve water quality compliance with the permit
15 requirements. The Water Quality Master Plan developed a finite list of strategically located
16 implementation projects throughout Petersburg’s watersheds resulting in the maximum positive
17 impacts to the water quality of receiving streams and to prioritize projects for implementation so that
18 funding can identified in subsequent fiscal years (FY) for design and construction. The Water Quality
19 Master Plan will guide Petersburg towards short-term and long-term compliance goals.

1st Permit Cycle Compliance Strategy

21 Petersburg has developed a plan for completing the POC reduction requirements for the 1st permit
22 schedule. Several projects have been identified as part of Petersburg’s Water Quality Master Plan and
23 are in various stages of implementation. Implementation of the identified projects will enable
24 Petersburg to significantly exceed the required POC reductions for the 1st permit cycle, see Table 4. The
25 projects listed in Table 4 are planned to be implemented by the end of the 1st permit cycle to achieve
26 the 5.0% reductions required for existing development.

Table 4. 1st Year POC Reduction Compliance Schedule

Project Description	Project Type	Stream Length (ft)	Pollutant of Concern Removal (lbs)			Budget
			TN	TP	TSS	
Lieutenant Run at Animal Shelter, Phase I	Stream Restoration	490	37	33	21991	\$ 138,500
Lieutenant Run at Cameron Field, Phase II	Stream Restoration	2300	173	156	103224	\$ 734,000
Brickhouse Run at Hinton Street	Stream Restoration	250	19	17	11220	\$ 118,315
Canal Street*	Bioretention	n/a	1.29	0.16	45.2	\$ 88,000
Totals			229	207	136,480	\$ 1,078,815
Required for 1st Permit Cycle			154	25	12,642	
% Achieved of 1st Permit Cycle Reductions			149%	828%	1080%	
Total Reduction Required (3 permit cycles)			3,242.03	613.46	256,226.00	
% Achieved of Total Required Reductions (3 permit cycles)			7%	34%	53%	
Stream Restoration removal rates use the revised "Urban Stream Restoration Interim Approved Removal Rates"						
*TSS Removal determined from Chesapeake Bay Program Retrofit Curves/Equations						



1 The stream restoration POC removal calculations shown in Table 4 were completed using the revised
2 Interim Rates provided as Appendix V. I of the Revised Draft TMDL Guidance Document. Removal rates
3 for TSS were calculated using the non-coastal plain removal rate. For the Canal Street bioretention,
4 pollutant reductions for TN and TP area were calculated using the Runoff Reduction Method
5 spreadsheet. Determination of TSS removal for the bioretention area was completed using the
6 Chesapeake Bay Program retrofit curves/equations as provided in Appendix V.B of the Revised Draft
7 TMDL Guidance Document.

8 A schedule for implementation has been developed for the projects identified in Table 4 that will be
9 used to meet the 1st permit cycle POC removal requirements. As demonstrated in Table 5 all projects
10 required to meet 1st permit cycle POC reduction will be completed by March 2018.

11 **Table 5. Implementation Schedule to Meet 1st Permit Cycle Reduction Requirements.**

Implementation Schedule and Budget				
Project Description	Engineering Design Complete	Construction Initiation	Construction Completion	Budget
Lieutenant Run at Animal Shelter, Phase I	Aug-15	Sep-15	Mar-18	\$ 138,500
Lieutenant Run, Phase II	Nov-16	Sep-17	Mar-18	\$ 734,000
Brickhouse Run at Hinton Street	Aug-15	Sep-15	Mar-18	\$ 118,315
Canal Street*	Aug-15	Sep-15	Sep-17	\$ 88,000

12 **Reductions Achieved thru Redevelopment**

13 Redevelopment projects have been a significant part of the recent development that has occurred in
14 Petersburg. According to recent MS4 Annual Reports, only approximately 190 acres of the City’s 14,668
15 acres have been developed since June 30, 2009, most of which was redevelopment. The Chesapeake
16 TMDL Guidance Document Appendix V.K indicates that permittees may receive credit for
17 redevelopment projects if the pre-development pollutant load is reduced regardless of the initial land
18 use condition. The guidance indicates that, for projects that have been developed under the VSMP
19 regulations using the Technical Criteria Part IIB, Petersburg can take credit for the required TP reduction
20 of 10% for land-disturbances greater than or equal to one acre; and for the required TP reduction of 20%
21 for land-disturbing activities greater than one acre. The guidance also indicates redevelopment projects
22 that were developed using the Technical Criteria IIC of the VSMP regulations that the permittee may use
23 either the 1) performance-based criteria or the 2) technology-based criteria. When performance-based
24 criteria is applied, as done in Petersburg, reductions may be credited to the permittee if the TP load is
25 reduced through development of prior developed lands when the redevelopment activity decreases, in
26 accordance with Situation 3.

27 The City of Petersburg is building and analyzing a database of redevelopment projects that will be used
28 to determine which, if any, of the redevelopment activities can be credited towards POC reductions.
29 Petersburg reserves the right to be able to account for any potential reductions associated with
30 redevelopment at a later date.



1 **Means and Methods to Offset Increased Loads from New Sources**
2 **Initiating Construction Between July 1, 2009 and June 30, 2014**

3 Special Condition Requirement 7 “New Sources of Construction” (Section I.C.2.a (7)) of the General
4 Permit applies to permittees that have:

- 5 i. Adopted an average impervious land cover condition greater than 16% for the design of post-
6 development stormwater management facilities under the Chesapeake Bay Preservation Act, or
- 7 ii. Have allowed projects to be built with an impervious land cover condition greater than 16% for
8 the design of post-development stormwater management facilities through a “fee-in-lieu of” or
9 similar program.

10 If a permittee has met either of the criteria listed in (i) or (ii) above, then the permittee has to address
11 the requirements set forth in the corresponding Special Condition. This would ultimately require further
12 POC reductions in addition to those required for existing conditions as of June 30, 2009 (GP Section
13 I.C.2.a (6)).

14 The City of Petersburg adhered to the technology-based criteria under 9VAC25-870-96.C. Under this
15 regulation it is stipulated that beyond the reduction requirements for existing conditions as of June 30,
16 2009, it is not required to compensate for any additional reductions required under Special Condition 7
17 of the General Permit because the technology-based criteria assumes an average land cover condition of
18 16% for the design of post-development stormwater management facilities. Therefore, no reduction
19 requirement for this Special Condition is applicable.

20 **Means and Methods to Offset Increased Loads from Grandfathered**
21 **Projects that Begin Construction after July 1, 2014**

22 Special Condition Requirement 8 “Grandfathered Projects” (Section I.C.2.a (8)) of the General Permit
23 apply to permittees that have:

- 24 i. Adopted an average impervious land cover condition greater than 16% for the design of post-
25 development stormwater management facilities under the Chesapeake Bay Preservation Act, or
- 26 ii. Have allowed projects to be built with an impervious land cover condition greater than 16% for
27 the design of post-development stormwater management facilities through a “fee-in-lieu of” or
28 similar program.

29 If a permittee has met either of the criteria listed in (i) or (ii) above, then the permittee has to address
30 the requirements set forth in the corresponding Special Condition. This would ultimately require further
31 POC reductions in addition to those required for existing conditions as of June 30, 2009 (GP Section
32 I.C.2.a (6)).

33 The City of Petersburg adhered to the technology-based criteria under 9VAC25-870-96.C. Under this
34 regulation it is stipulated that beyond the reduction requirements for existing conditions as of June 30,
35 2009, it is not required to compensate for any additional reductions required under Special Condition 8
36 of the General Permit because the technology-based criteria assumes an average land cover condition of



1 16% for the design of post-development stormwater management facilities. Therefore, no reduction
2 requirement for this Special Condition is applicable.

3 **List of Future Projects, and Associated Acreage that Qualify as**
4 **Grandfathered**

5 There are no future projects that are anticipated to qualify as grandfathered.

6 **Estimate of Expected Cost to Implement the Necessary Reductions**

7 Petersburg is well underway with implementing the projects listed in Table 4 required to meet the 1st
8 permit cycle POC reduction requirements. Budgetary requirements for each of these projects (including
9 design and estimated construction costs) are provided in Table 5. Design of three of the four projects is
10 currently already underway. Financial allocation of the remaining project is currently planned.

11 **Table 6. 1st Permit Cycle Budgetary Requirements.**

Project Description	Design Cost	Estimated Construction Cost	Total Budget (including contingency)
Lieutenant Run at Animal Shelter, Phase I	\$ 83,000.00	\$ 125,000.00	\$ 138,500
Lieutenant Run, Phase II	\$ 120,000.00	\$ 614,000.00	\$ 734,000
Brickhouse Run at Hinton Street	\$ 28,000.00	\$ 90,315.00	\$ 118,315
Canal Street*	\$ 13,000.00	\$ 75,000.00	\$ 88,000
Totals	\$ 244,000	\$ 904,315	\$ 1,078,815

12 As part of the Water Quality Master Plan, the City of Petersburg is proactively planning for meeting POC
13 reduction requirements for the end of three permit cycles. A total of 30 water quality projects were
14 identified during the Water Quality Master Plan study, totaling roughly \$8.9 million. The projects
15 include:

- 16 • 2 existing BMP retrofits;
- 17 • 9 stream restoration reaches (nearly 1.6 miles total) for which preliminary feasibility site visits
18 were constructed, 2 of which are dry channel regenerative stormwater conveyance;
- 19 • 2 new large scale BMPs – both constructed wetlands;
- 20 • 10 new small scale individual BMPs, which include permeable pavement, bioretention, a dry
21 swale, and some urban planters;
- 22 • 6 site retrofits – including the Petersburg Area Transit Center, the Old Street Farmer’s Market,
23 and several parking lots; and
- 24 • The Southside Depot, which is a LEED project for which Petersburg should document pollutant
25 removal efficiencies above redevelopment compliance.

26 It is anticipated that the Water Quality Master Plan (2013) will serve as a dynamic plan and will evolve
27 over time to account for changes in nutrient tracking and compliance strategies approved by the state.



1 A detailed list of the projects and associated budgetary planning numbers can be found in Appendix E of
2 this document. It should be noted that the POC reduction calculations for stream restoration were
3 determined using the now outdated interim rates.

4 **Public Comments on Draft Action Plan**

5 Petersburg encourages the public's involvement and participation in the development and
6 implementation of its MS4 Program. In keeping with this objective, Petersburg has posted a copy of its
7 Draft Chesapeake Bay TMDL Action Plan on its Stormwater Management website
8 (<http://www.petersburgva.gov/index.aspx?NID=295>) to solicit public comment on the draft plan. All
9 comments received from the public were taken into consideration when developing the final version of
10 the Action Plan that was submitted to DEQ with its MS4 Annual Report in October of 2015.