MARINE CORPS BASE QUANTICO STORMWATER MS4 SUPPORT CHESAPEAKE BAY TMDL ACTION PLAN

STORMWATER MS4 PROGRAM SUPPORT

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MARINE CORPS INSTALLATIONS NATIONAL CAPITAL REGION MARINE CORPS BASE QUANTICO (MCINCR-MCBQ) VIRGINIA

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Prepared for

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TABLE OF CONTENTS

Page

LIST OF TABLES

Page

LIST OF FIGURES

LIST OF APPENDICES

LIST OF ACRONYMS AND ABBREVIATIONS

BMP	Best Management Practice
CBAP	Chesapeake Bay Action Plan
CBP	Chesapeake Bay Program
CY	Calendar Year
DEA	Drug Enforcement Administration
DMR	Discharge Monitoring Report
DoD	Department of Defense
DOJ	Department of Justice
DON	Department of the Navy
E&SC	Erosion and Sediment Control
EISA	Energy Independence and Security Act
EOS	Edge of Stream
FBI	Federal Bureau of Investigation
FY	Fiscal Year
GIS	Geographic Information Systems
kg	Kilogram
lbs.	pounds
LID	Low Impact Development
MCINCR-MCBQ	Marine Corps Installations National Capital Region – Marine Corps Base Quantico
MCM	Minimum Control Measure
MEP	Maximum Extent Practicable
mg/L	milligrams per liter
MS4	Municipal Separate Storm Sewer System
MSG	Marine Security Guard
NMP	Nutrient Management Plan
NREA	Natural Resources and Environmental Affairs
POC	Pollutant(s) of Concern
TMDL	Total Maximum Daily Load
TN	Total Nitrogen
TP	Total Phosphorus
TSS	Total Suspended Solids

UFC	United Facilities Criteria
U.S.	United States
USMC	United State Marine Corps
VA	Virginia
VAC	Virginia Administrative Code
VDEQ	Virginia Department of Environmental Quality
VPDES	Virginia Pollutant Discharge Elimination System
WIP	Watershed Implementation Plan
WWTP	Wastewater Treatment Plant
yr.	year

EXECUTIVE SUMMARY

Marine Corps Installations National Capital Region - Marine Corps Base Quantico (MCINCR-MCBQ) is authorized to discharge under the Virginia General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4) (Permit No. VAR040069), hereinafter referred to as "MS4 Permit." In accordance with Section I.B of the MS4 Permit, MCINCR-MCBQ is required to develop a Chesapeake Bay Total Maximum Daily Load (TMDL) Action Plan (CBAP).

This document provides the CBAP for MCINCR-MCBQ and meets the CBAP requirements in the MS4 Permit. This document also meets the requirements contained within the Virginia Department of Environmental Quality (VDEQ) Water Division Guidance Memo No. 20-2003, dated 06 February 2021 (2021 VDEQ Guidance Memo), which provides guidance on procedures to meet the Chesapeake Bay TMDL Special Condition requirements in the 2023-2028 MS4 Permit. This CBAP is valid for the third permit cycle (01 November 2023 through 31 October 2028).

The draft General Permit, presented on the VDEQ website dated 8 February 2023, indicates VDEQ will be removing the reduction requirements for total suspended solids (TSS) for permit cycle 2023 to 2028. While the Guidance has not been updated to reflect the revision, this TMDL Action Plan meets the proposed requirements under 9 VAC 25-890, Part II A and only addresses phosphorus and nitrogen. References to TSS reductions have been removed from this document. Regardless, during the second permit cycle, MCINCR-MCBQ had already exceeded the pollutant reduction requirement for TSS. **Table ES-1** summarizes the remaining reductions required for total nitrogen (TN) and total phosphorus (TP), which the installation intends to meet through nutrient trading with MCINCR-MCBQ's Mainside Wastewater Treatment Plant (WWTP).

Table ES-1. Progress Toward MCINCR-MCBQ's Require Reductions for this Permit Cycle

Variable	Load Reductions for Existing Sources (lbs/yr)	
	TN	TP
Total Reductions Required for this Permit Cycle	**1,049.37**	**178.5**
Total Allowable Existing Source Reductions from Existing BMPs	286.22	27.48
Remaining Reductions Needed for this Permit Cycle (2018-2023)	**763.15**	**151.02**
Total Allowable Existing Source Reductions from Nutrient and Sediment Trading	13,169.00	1,051.80
Surplus Reductions to Apply Toward this Permit Cycle (2023-2028)	*12,405.85*	*900.78*

MCINCR-MCBQ will implement a nutrient trading agreement with the Mainside WWTP, issuing at a minimum, 763.15 lbs/yr of TN and 151.02 lbs/yr of TP to the MCINCR-MCBQ MS4. This agreement will go into effect no later than 31 October 2028 and include a completed MS4 Nutrient Credit Acquisition Form, available from VDEQ. After the CBAP is submitted to the VDEQ, unless specifically denied in writing by the VDEQ, this Plan becomes effective and enforceable 90 days after the date received.

1.0 INTRODUCTION

The Virginia Administrative Code (VAC) under 9VAC25-890 and Permit Number VAR040069 provide the General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4), hereinafter referred to as "MS4 Permit". Operators of Small MS4s in urbanized areas as defined by the decennial Census, such as Marine Corps Base Quantico (MCINCR-MCBQ), are subject to the requirements of this MS4 Permit. MCINCR-MCBQ's location within the Chesapeake Bay Watershed and Section I.C of the MS4 Permit require MCINCR-MCBQ to develop a Chesapeake Bay Total Maximum Daily Load (TMDL) Action Plan (CBAP).

This document provides the CBAP for MCINCR-MCBQ and meets the CBAP requirements in the MS4 Permit. This document also meets the requirements contained within the Virginia Department of Environmental Quality (VDEQ) Water Division Guidance Memo No. 20-2003, dated 06 February 2021 (2021 VDEQ Guidance Memo), which provides guidance on procedures to meet the Chesapeake Bay TMDL Special Condition requirements in the 2023-2028 MS4 Permit. This CBAP is valid for the third permit cycle (01 November 2023 through 31 October 2028).

This Plan documents the means and methods that MCINCR-MCBQ will use to meet the 100% pollutant reduction requirements (additional 60% from 2018 CBAP). After the CBAP is submitted to the VDEQ by MCINCR-MCBQ, unless specifically denied in writing by the VDEQ, this Plan becomes effective and enforceable 90 days after the date received by the VDEQ.

The organization and content of this document are consistent with the 2021 VDEQ Guidance Memo and include:

Section	Description
2	Any new or modified legal authorities, such as ordinances, permits, policy, contract language, orders, and inter-jurisdictional agreements, implemented or needing to be implemented to meet the requirements of MS4 Permit Part II A 3, A 4, and A 5.
3	The load and cumulative reduction calculations in accordance with MS4 Permit Part II A 3, A 4, and A 5.
4	The total reductions achieved as of 1 November 2023 for each pollutant of concern.
5	A list of Best Management Practices (BMPs) implemented prior to 1 November 2023, to achieve reductions associated with the Chesapeake Bay TMDL, including date of implementation and reductions observed.
6	The BMPs to be implemented by MCINCR-MCBQ within 60 months of the effective permit date to meet the cumulative reductions calculated in MS4 Permit Part II A 3, A 4, and A 5.

Section	Description
7	A summary of any comments received as a result of public participation required in MS4 Permit Part II A 13, MCINCR-MCBQ's response, identification of any public meetings to address public concerns, and any revisions made to Chesapeake Bay TMDL Action Plan as a result of public participation.
8	Miscellaneous information (i.e., submission, implementation, and Annual Reporting).
9	A list of references.

2.0 CURRENT PROGRAM AND EXISTING LEGAL AUTHORITIES

This section provides a review of MCINCR-MCBQ's current MS4 Program and the legal authorities that MCINCR-MCBQ uses to ensure compliance with Part II A 3, A 4, and A 5 of the MS4 Permit. This section also provides a summary of the other regulations and policies that require MCINCR-MCBQ to reduce pollutants in stormwater runoff, thereby facilitating compliance with the CBAP.

2.1 MS4 Program

MCINCR-MCBQ's MS4 Program Plan details its program to be implemented under the MS4 Permit to reduce pollutants in the stormwater discharged from the MS4. The MS4 Program Plan includes discussion of how MCINCR-MCBQ plans to meet each of the six Minimum Control Measures (MCMs) identified in the MS4 Permit.

According to Section I.B of the MS4 Permit, the implementation of the following MS4 Program components represents implementation of the CBAP to the maximum extent practicable (MEP) and demonstrates adequate progress.

- Implementation of Nutrient Management Plans (NMP) in accordance with the Permit related to pollution prevention/good housekeeping for municipal operations. NMPs for the golf course and Lincoln Housing Area have been completed; however, they do not provided credits toward 2023 pollutant reductions.
- Implementation of the MCM in MS4 Permit Section I related to construction site stormwater runoff to address discharges from Transitional Sources. MCINCR-MCBQ's plans for complying with this MCM are addressed in more detail in Section 7.0 of the MS4 Program Plan.
- Implementation of the means and methods to address discharges from New Sources in accordance with the MCM in MS4 Permit Section I related to post-construction stormwater management in new development and development of prior developed lands. MCINCR-MCBQ's plans for complying with this MCM are addressed in more detail in Section 3.0 of this CBAP.
- Implementation of the means and methods sufficient to meet the required reductions of POC loads from Existing Sources in accordance with the CBAP are further addressed in Section 4.0 of this Plan.

2.2 Existing Legal Authorities

MCINCR-MCBQ has the appropriate legal authorities and ability to ensure compliance with MS4 Permit Section I.B. MCINCR-MCBQ is a United States Marine Corps (USMC) installation and has direct legal authority over use and condition of the land and infrastructure it owns and operates within its legal boundaries, except for the following areas where the USMC does not have stormwater compliance responsibilities. Therefore, certain excepted land and infrastructure is not covered by this CBAP.

- The historic Town of Quantico, located within the MCINCR-MCBQ fence line, is neither owned nor operated by MCINCR-MCBQ.
- Parcels leased to and operated by the Department of Justice (DOJ) for use by the Federal Bureau of Investigation (FBI) and the Drug Enforcement Administration (DEA). These parcels are Federal facilities located outside urbanized areas and do not require coverage under the MS4 Permit; therefore, stormwater activities are managed and permitted independent of MCINCR-MCBQ.

MCINCR-MCBQ is responsible for managing stormwater and the MS4 on its property. MCINCR-MCBQ understands that it is responsible, through its contractors, to obtain the appropriate Construction General Permits and follow the prescribed requirements as they pertain to construction projects. MCINCR-MCBQ is required to comply with the Construction General Permit for construction projects disturbing 2,500 square feet or greater as described in Section 7.0 of the MS4 Program Plan.

Lastly, enforcement language is included in contract documents which require the contractor to take immediate corrective action in the event of noncompliance during land disturbing activities. In addition, MCINCR-MCBQ requires the contractor to ensure its employees are aware of how these requirements affect the work performed under the contract.

Other Pertinent Regulations and Policies

MCINCR-MCBQ ensures compliance with the following regulations and policies for all projects on the installation.

- The Department of Defense (DoD) has published a United Facilities Criteria (UFC) entitled “Design: Low Impact Development” (UFC 3-210-10, 01 July 2015, revised 01 March 2020). The DoD requires all facilities development projects use the UFC. The incorporation of Low Impact Development (LID) into the general construction requirements provides for increased stormwater management of both quantity and quality, thus protecting rivers, streams and water bodies of the country.

- On 16 November 2007, the Department of the Navy's (DON) policy for Storm Water Management, or LID policy letter, was issued. It sets a goal that major renovation and construction projects are to have no net increase in stormwater volume and sediment or nutrient loading, and to reduce reliance on traditional stormwater treatment options and collection systems. Major construction is defined by DON as any project exceeding $750,000.00. To meet this goal, the policy letter instructs the Navy and Marine Corps to incorporate LID practices in all major renovation and construction projects starting in fiscal year (FY) 2011.
- On 19 December 2007, the Energy Independence and Security Act of 2007 (EISA) was signed into law. A provision located in Title IV ("Energy Savings in Building and Industry"), Subtitle C ("High Performance Federal Buildings") requires projects involving a federal facility with a footprint that exceeds 5,000 square feet to "use site planning, design, construction, and maintenance strategies for the property to maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow."

2.3 New or Modified Legal Authorities

According to the MS4 Permit Section II.A.13.b.(1), MCINCR-MCBQ must identify any new or modified legal authorities such as ordinances, state and other permits, orders, specific contract language, and interjurisdictional agreements implemented or needing to be implemented to meet the requirements of MS4 Permit Section I.B. It has been determined that no new legal authorities are required for permit compliance.

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3.0 LOAD AND CUMULATIVE REDUCTION CALCULATIONS

3.1 Regulated MS4 Boundary

The MCINCR-MCBQ regulated MS4 boundary is defined as the areas of the installation defined as urbanized areas in the 2010 United States Census. Based on geospatial analysis, the urbanized area that intersects with the MCINCR-MCBQ property boundary includes only portions of MCINCR-MCBQ's Mainside parcel. The lands within this urbanized area are considered regulated by VDEQ. **Figure 1** depicts the MS4 boundary at MCINCR-MCBQ.

The following areas of MCINCR-MCBQ are excluded from the MCINCR-MCBQ's regulated MS4 area:

- Lands regulated under an individual VPDES permit for industrial stormwater discharges: MCINCR-MCBQ holds individual VPDES permit number VA0002151 for industrial stormwater discharges, which expires on 31 January 2023, but is being administratively extended until a new permit is issued. The areas that discharge to regulated outfalls listed in permit VA0002151, which are sampled regularly for permit compliance, were excluded from MCINCR-MCBQ's regulated MS4.
- Forested Lands, Wetlands, and Open Waters: For completeness, these areas on MCINCR-MCBQ were included within the boundary of the regulated MS4; however, their acreages were excluded from the regulated MS4 total acreage calculation as permitted per the 2021 VDEQ Guidance Memo and detailed further in Section 5.0 of this Plan.

Figure 2 depicts the MS4 boundary and identifies the industrial permitted areas excluded from the regulated MS4 acreage.

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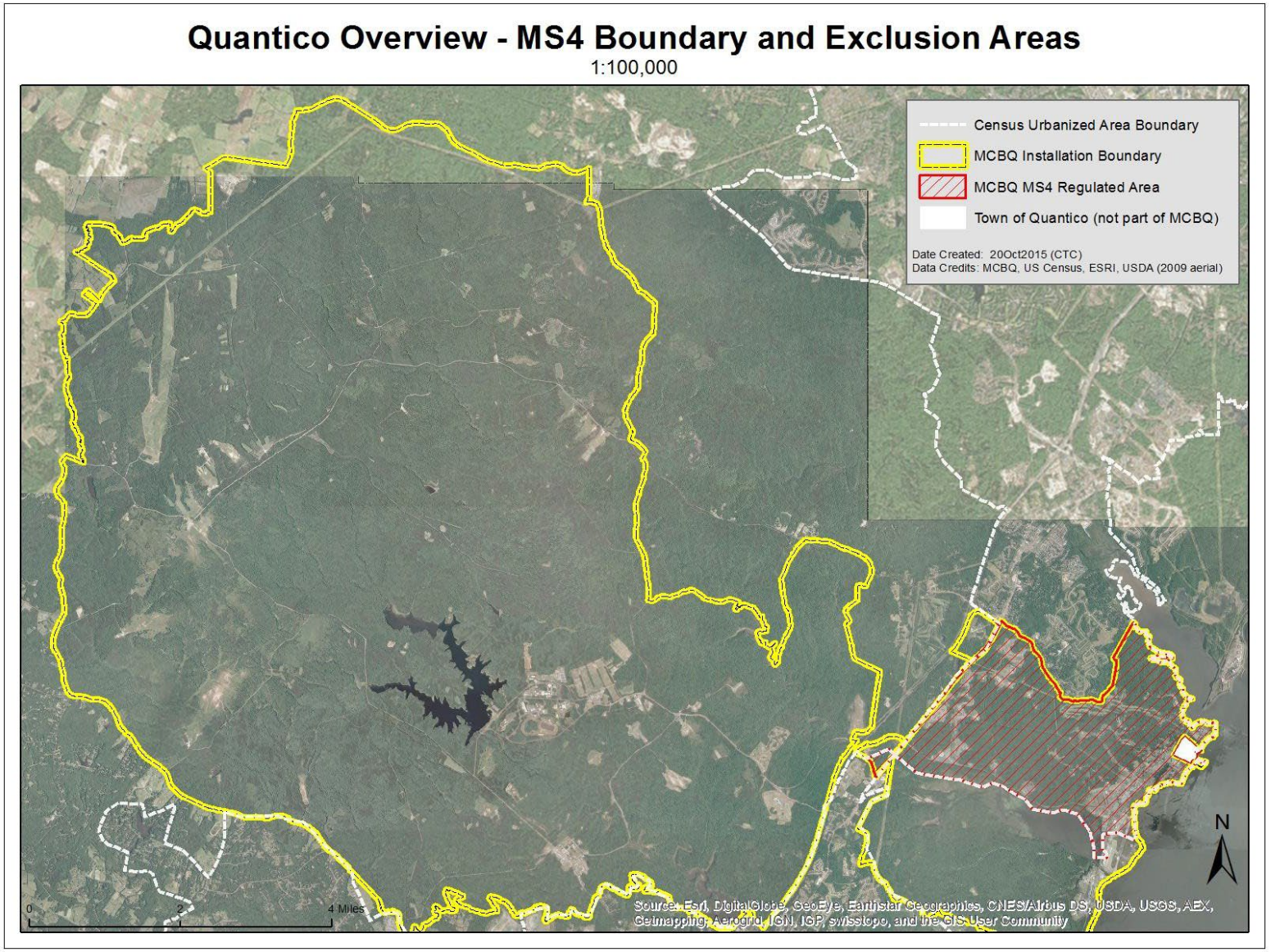

Figure 1. Overlap of MCINCR-MCBQ Property and 2010 United States Census Urbanized Area

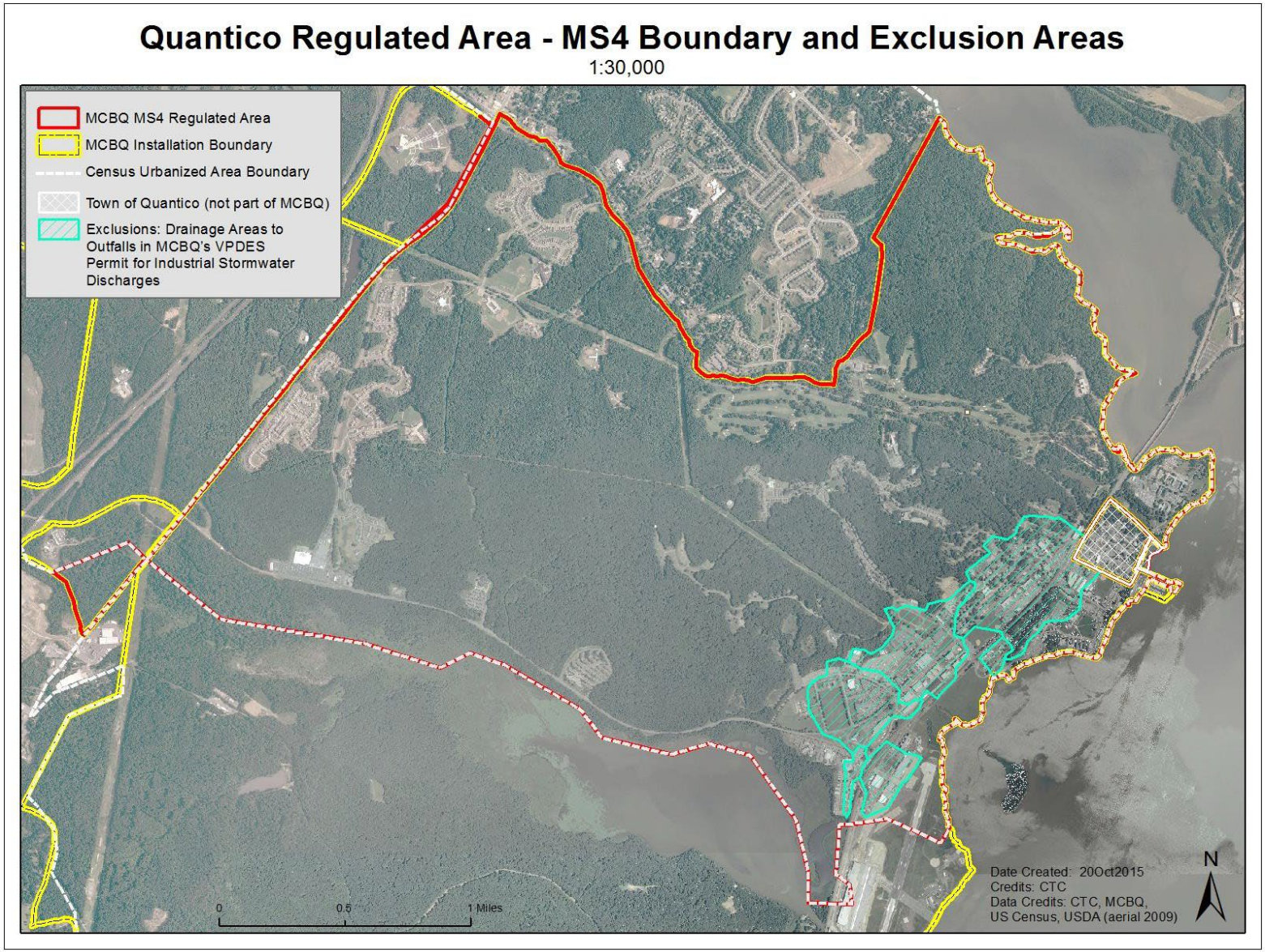

Figure 2. MCINCR-MCBQ's Regulated MS4 Boundary and Exclusion

3.2 Calculation of Existing Source Loads

MS4 Permit Section II.A.1 requires an estimate of the annual POC loads discharged from Existing Sources as of 30 June 2009, based on the 2009 Level 2 (L2) Progress Run. Using MCINCR-MCBQ's Geographic Information Systems (GIS) data and available aerial photography from June 2009, the land uses within MCINCR-MCBQ's regulated MS4 boundary were analyzed and quantified. As discussed in Section 3.1, the lands regulated under MCINCR-MCBQ's individual Virginia Pollution Discharge Elimination System (VPDES) permit for industrial stormwater discharges were excluded from this land use evaluation. **Table 1** summarizes the existing source acreage for the MCINCR-MCBQ MS4. Acres of forest, water, and wetlands have been included for reference; however, they do not affect the total source load calculation.

Table 1. 30 June 2009 Land Use Acreage Comprising Existing Sources at MCINCR-MCBQ

Land Use	Acreage	Urban Categorization	Total Acreage
Building	72	**Regulated Impervious Urban**	**324**
Pavement	232		
Gravel	20		
Dirt	30	**Regulated Pervious Urban**	**923**
Grass	893		
Forest	2,390	**Non-Urban Lands**	**2,642**
Water	166		
Wetlands	86		
Total	**3,889**		**3,889**

Note: The non-urban lands (forest, wetlands, and water) are not included for purposes of calculating Existing Source loads as well as land that is regulated by MCINCR-MCBQ's Individual industrial stormwater permits.

In accordance with MS4 Permit Section II.A.1 and due to MCINCR-MCBQ's location within the Potomac River Basin, the regulated impervious urban and regulated pervious urban acres and estimated total POC loads are shown in **Table 2**. The 2009 Edge of Stream (EOS) loading rates were provided in the Table 3b Calculation Sheet from MS4 Permit Section II.A.1 and are used to calculate the estimate baseline total POC load for MCINCR-MCBQ.

Table 2. Calculation of Estimated Existing Source Loads for MCINCR-MCBQ (2009 Baseline)

Subsource	Pollutant	Total Existing Acres Served by MCINCR-MCBQ (06/30/09)	2009 EOS Loading Rate (lbs./acre/yr)	Estimated Baseline Total POC Load for MCINCR-MCBQ Based on 2009 Progress Run (lbs./yr)
Regulated Urban Impervious	TN	324	16.86	5,463
Regulated Urban Pervious		923	10.07	9,295
			TN Total:	**14,758**
Regulated Urban Impervious	TP	324	1.62	525
Regulated Urban Pervious		923	0.41	378
			TP Total:	**903**

MCINCR-MCBQ is required to meet 100% of the L2 scoping run reductions for existing sources by the end of the third MS4 Permit cycle (31 October 2028). **Table 3** provides the calculation sheet to determine the 100% load reduction required during the third permit cycle.

Table 3. Calculation of Required Reductions for MCINCR-MCBQ (Permit Cycle 2023-2028)

Subsource	Pollutant	Total Existing Acres Served by MCINCR-MCBQ (06/30/2009)	2009 EOS Loading Rate (lbs./acre/yr)	Estimated Total POC Load for MCINCR-MCBQ/ Based on 2009 Progress Run (lbs./yr)	Percentage of MS4 Required Chesapeake Bay Total L2 Load Reduction	Percentage of L2 Required Reduction by 10/31/2028	100% Cumulative Reduction Required by 10/31/2028 (lbs./yr)	Sum of 100% Cumulative Reduction (lbs./yr)
Regulated Urban Impervious	TN	324	16.86	5,463	9%	100%	491.67	**1,049.37**
Regulated Urban Pervious		923	10.07	9,295	6%	100%	557.7	
TN Total:				**14,758**				
Regulated Urban Impervious	TP	324	1.62	525	16%	100%	84	**178.5**
Regulated Urban Pervious		923	0.41	378	25%	100%	94.5	
TP Total:				**903**				

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Sections 3.3 and 3.4 of this Plan discuss the means and methods available for implementation in order to meet the required reductions identified in **Table 3**.

3.3 Means and Methods to Address Discharges from New Sources

MS4 Permit Section II.A.4 requires a discussion on the means and methods that will be utilized to address discharges into the MS4 from new sources. New sources subject to Section II.A.4 include only construction initiated on or after 01 July 2009 that either disturbed one acre or less, or disturbed greater than one acre but has a land use condition of 16% or less impervious cover used in design of post-development stormwater management facilities. The following means and methods are used by MCINCR-MCBQ to address discharges from these new sources.

- For all construction projects disturbing greater than one acre, MCINCR-MCBQ adheres to the Virginia Stormwater Management Program regulations for the implementation of post-development stormwater management facilities. This includes acquiring the required General Construction Permit for projects disturbing greater than one acre, which must be designed to meet the phosphorus load that is equivalent to a land cover condition of 16% imperviousness; therefore, these projects would meet MS4 Permit Section I.C and not require additional offsets.
- In addition, MCINCR-MCBQ requires that all construction sites greater than or equal to 2,500 square feet and less than one acre must have an Erosion and Sediment Control (E&SC) Plan approved by MCINCR-MCBQ's Natural Resources and Environmental Affairs (NREA) Branch.
- MCINCR-MCBQ has a program where they proactively demolish unused buildings and pavement and return them to grass. The activities under this program serve to offset any new sources resulting from construction projects initiated on or after 01 July 2009 that disturb one acre or less. These offsets and other reduction credits are quantified in Section 5.0 of this Plan.

3.4 Construction Initiated 01 July 2009 through 30 June 2019

MS4 Permit Section II.A.4 requires the CBAP to include the means and methods to offset increased loads from new sources. This section provides a discussion of MCINCR-MCBQ's compliance status with this requirement.

MCINCR-MCBQ has not adopted an average land cover condition of greater than 16% impervious cover under the Chesapeake Bay Preservation Act. MCINCR-MCBQ obtained and complied with the appropriate Construction General Permits for all new sources initiating construction between 01 July 2009 and 30 June 2019 that disturb one acre or greater. The post-development stormwater runoff quality requirements for the Construction General Permits ensure that these new sources are treated by stormwater BMPs to achieve equivalent 16% impervious cover baseline loads for new sources (0.45 lb. TP/acre/yr), and therefore, no additional offsets are required under the CBAP.

Appendix A provides a list of BMPs treating new sources that have been constructed or are under construction at MCINCR-MCBQ since 01 July 2009, which fall under Permit Requirement 3 and obtained coverage under the appropriate Construction General Permits.

In addition, the following is a list of MCINCR-MCBQ construction projects and year of construction initiation. The following projects fall under Permit Requirement 3 and do not require additional offsets as a result.

- New Middle/High School, March 2018
- Additional Fuller Road Widening, 2019

3.5 Means and Methods to Offset Increased Loads from Grandfathered Projects that Began Construction after 01 July 2014

MS4 Permit Section II.A.5 requires a list of projects and associated acreages that qualify as grandfathered in accordance with 9VAC25-870-48. MCINCR-MCBQ projects funded prior to 01 July 2012 have received stormwater permit coverage prior to 01 July 2014. Consequently, MCINCR-MCBQ has no construction projects that meet the criteria of grandfathered projects.

4.0 TOTAL REDUCTIONS ACHIEVED FOR EACH POLLUTANT OF CONCERN

Permittees are required to describe the means and methods that will be implemented to meet the POC reductions consistent with a 100% reduction of the existing source loads, and provide a schedule to achieve these reductions, including annual benchmarks to demonstrate ongoing progress. However, as described in Part IV of the 2021 VDEQ Guidance Memo, to receive credit under the CBAP for BMPs installed on or after 01 January 2006 and prior to 01 July 2009 (historical BMPs), the historical data must have been submitted using the spreadsheet provided on VDEQ's MS4 website by 01 September 2015, so that these data can be included in the Phase 6 Chesapeake Bay Model. Through a collaborative effort with the USMC Headquarters, MCINCR-MCBQ has submitted this information for future modeling efforts. However, MCINCR-MCBQ did not receive approval from VDEQ to apply credit from historical BMPs toward its CBAP reduction requirements. Consequently, MCINCR-MCBQ can only claim credit for BMPs installed on or after 01 July 2009.

Based on the 2021 VDEQ Guidance Memo and additional discussions with VDEQ, the following MCINCR-MCBQ BMPs can provide reduction credits to Existing Sources:

- Existing BMPs installed on or after 01 July 2009 that treat only Existing Sources may have 100% of their reduction credits applied.
- Existing BMPs installed on or after 01 July 2009 that treat unregulated land, baseline reductions must first be determined for unregulated land, and then excess credits can be applied to the CBAP required reductions.
- Existing BMPs installed on or after 01 July 2009 that treat New Sources may have excess reductions applied to Existing Sources.

Table 4 summarizes the pollutant reductions from eligible existing BMPs, which are further discussed in Section 5.0 of this Plan.

Table 4. Progress Toward MCINCR-MCBQ's Required Reductions for this Permit Cycle

Variable	Load Reductions for Existing Sources (lbs/yr)	
	TN	TP
Total Reductions Required for this Permit Cycle	**1,049.37**	**178.5**
Total Allowable Existing Source Reductions from Existing BMPs	286.22	27.48
Remaining Reductions Needed for this Permit Cycle (2023-2028)	**763.15**	**151.02**

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5.0 LIST OF BMPS IMPLEMENTED TO ACHIEVE REDUCTIONS FOR THE CHESAPEAKE BAY TMDL

An inventory of the existing BMPs at MCINCR-MCBQ is provided in **Appendix A** and **Appendix B** of this plan. Part IV of the 2021 VDEQ Guidance Memo specifies the type of information permittees should report for all BMPs implemented to meet the CBAP requirements, which is included for each of the BMPs in the appendices. One data point included in the BMP inventories is the number of acres treated by the BMPs for Existing Sources only (land uses existing as of 30 June 2009). If the BMP treats only New Sources, then they are not eligible for credit and are given zero credit in the inventories. If the BMP treats both Existing and New Sources (construction initiated after 01 July 2009), then only the acreage of the Existing Sources treated are provided in the appendices.

The appendices are organized by BMP installation dates that reflect whether the BMP may be eligible to receive CBAP credit, as listed below.

- **Appendix A includes BMPs installed on 01 July 2009 and later**: Some of the BMPs are eligible for full or partial CBAP credit only if they provide treatment for Existing Sources. A number of these BMPs treat only New Sources and are therefore not eligible for credit, which is detailed in the appendix. Many of these BMPs treat both Existing and New Sources and are therefore, eligible for partial credit, which is calculated in the appendix.
- **Appendix B includes BMPs installed 1985 through 30 June 2009**: These 60 BMPs are not currently eligible for CBAP credit; therefore, they provide zero credits for inclusion into the CBAP.

Each existing BMP at MCINCR-MCBQ must be assigned reduction efficiencies to be applied to the stormwater runoff from the impervious urban, pervious, and forest acreage draining to the respective BMP in order to determine the TN and TP pollutant reductions. VDEQ requires definitions of forest acreage to be consistent with Virginia Department of Forestry guidance, which is based on tree size and density and to meet the Bay Program's minimum size requirement of 30m x 30m contiguous. MCINCR-MCBQ uses similar density requirements when defining their forest acreage.

The efficiencies assigned to a BMP depend on the type of design data available for that BMP. Construction plans and drawings were not available for many of the BMPs evaluated for this CBAP; therefore, this CBAP utilizes the most conservative reduction efficiencies from the established Chesapeake Bay Program (CBP) BMP reduction efficiencies, unless plans were available. TN and TP efficiencies are from the Virginia Stormwater Clearinghouse (Table V.A.1). For Manufactured Treatment Devices, TN is from the retrofit equations from Table V.B.2 and TP is from the Virginia Stormwater Clearinghouse (Table V.A.1) of the 2021 VDEQ Guidance Memo. For the purpose of these retrofit equations, due to construction plans and drawings not being available, a value of "1 inch" is assumed for the runoff depth treated.

MCINCR-MCBQ recently developed a NMP to address the MCINCR-MCBQ Golf Course and select lawn areas. It is understood that the NMP for the golf course (or on regulated lands) will not be eligible for credit under the CBAP, but NMPs on unregulated lands may be eligible for credit. If NMPs are developed for unregulated lands, then MCINCR-MCBQ will include that information in the Annual Report.

Part III of the 2021 VDEQ Guidance Memo specifies methods to estimate POC reductions that will be credited for various BMPs. These methods were used to calculate reduction credits and are quantified in the appendices. The appendices also include important data for calculating pollutant reductions, such as the:

- Applicable EOS loading rates for TN and TP for impervious urban, pervious urban, and forest land uses at MCINCR-MCBQ;
- EOS loads that the land uses treated by the BMP generate based on the treatment areas;
- Virginia BMP Clearinghouse and Chesapeake Bay Program Plan Reduction efficiencies for each BMP; and
- Calculated reductions applied to Existing Sources by land use for each of MCINCR-MCBQ's existing BMPs.

The BMP reduction credits were calculated for treatment of Existing Sources, in the form of load reductions from BMPs, for all existing structural BMPs at MCINCR-MCBQ. In order to do so, the treatment areas determined for Existing Sources were used. For urban land uses treated by the BMPs, the worksheets indicate whether the urban lands treated are regulated or unregulated impervious urban or pervious urban. In addition, forest lands that drain to BMPs are indicated. As previously described, regulated urban impervious land, regulated urban pervious land, and forest land are eligible for full reduction credit, although forest land use must utilize the correct loading rate for forest land. Unregulated urban impervious land and unregulated urban pervious land treated by the BMP is eligible for partial credit for reductions in excess of that required to meet baseline reductions that are equivalent to 16% impervious cover.

6.0 STRATEGY IMPLEMENTED BY THE PERMITTEE PRIOR TO THE EXPIRATION OF THIS PERMIT TO MEET CUMULATIVE REQUIREMENTS

MCINCR-MCBQ intends to enter into a no-cost trading agreement with the Mainside WWTP in order to acquire any additional TN and TP to meet its reduction requirements by 31 October 2028.

6.1 Nutrient and Sediment Trading Agreement

MCINCR-MCBQ operates the Mainside WWTP and participates in the Virginia Nutrient Trading Program. The VPDES permit for the WWTP includes effluent limits for TN and TP; however, the monitored end-of-year, cumulative TN and TP loads in the discharged effluent is well below the annual permit limits. Every year, the WWTP discharges TN and TP loads that are significantly less than the VPDES permit allocations. The difference between the permitted effluent TN and TP limits and actual effluent quality discharged are, therefore, eligible credits for MCINCR-MCBQ to apply to its CBAP. MCINCR-MCBQ's eligible TN and TP credits are summarized in **Table 5**.

Table 5. Total Nitrogen and Total Phosphorus Credits Available to MCINCR-MCBQ from Trading with Mainside WWTP in 2022 to 2023 Permit Year

Variable	TN (lbs/yr)	TP (lbs/yr)
VPDES Annual Permit Limit for Mainside WWTP[1]	20,101[2]	1,206[3]
Total Loads Discharged from Mainside WWTP in 2022 to 2023[4]	6,932	154
Credits Available	**13,169**	**1,052**

Notes:
[1] Discharge permit limits identified in Quantico Mainside Sewage Treatment Plant VPDES Permit No. VA0028363, effective 1 November 2019 to 31 October 2024.
[2] TN permit limit is calculated from the Mainside WWTP Permit using the 3.0 mg/L monthly average discharge limitation for TN – Calendar Year for a 2.2 MGD facility.
[3] TP permit limit calculated from the Mainside WWTP Permit using the 3.3 lb/day monthly average discharge limitation for TP.
[4] Summary of total loads discharged from Mainside WWTP in 2022 provided by the MCINCR-MCBQ points of contact at the Mainside WWTP based on discharge monitoring reports (DMRs).

Table 6 summarizes the remaining reductions required for TN and TP, which the installation intends to meet through nutrient trading with MCINCR-MCBQ's Mainside WWTP.

Table 6. WWTP Nutrient Trading Applied to MCINCR-MCBQ's Required Reductions for this Permit Cycle

Variable	Load Reductions for Existing Sources (lbs/yr)	
	TN	**TP**
Total Reductions Required for this Permit Cycle	**1,049.37**	**178.5**
Total Allowable Existing Source Reductions from Existing BMPs	286.22	27.48
Remaining Reductions Needed for this Permit Cycle (2023-2028)	**763.15**	**151.02**
Total Allowable Existing Source Reductions Available from Nutrient and Sediment Trading	13,169.00	1,051.80
Surplus Reductions to Apply Toward this Permit Cycle (2023-2028)	*12,405.85*	*900.78*

MCINCR-MCBQ intends to implement a nutrient trading agreement with the Mainside WWTP, exceeding 763.15 lbs/yr of TN and 151.02 lbs/yr of TP to the MCINCR-MCBQ MS4. This agreement will go into effect no later than 31 October 2028 and include a completed MS4 Nutrient Credit Acquisition Form using the most recent version available from VDEQ.

Once MCINCR-MCBQ acquires nutrient trading credits, the installation will include a statement in that year's MS4 Annual Report to VDEQ indicating that credits were acquired.

6.2 Implementation Schedule

The BMPs listed in **Appendix A** and **Appendix B** are already in place at MCINCR-MCBQ and treating Existing Sources. As discussed in Section 6.1, the nutrient trading agreement with the Mainside WWTP will go into effect no later than 31 October 2028.

The MCINCR-MCBQ MS4 and the Mainside WWTP have entered into discussions and concluded that there will be no cost to MCINCR-MCBQ associated with the nutrient trades, since these trades are occurring within the installation boundaries.

7.0 PUBLIC COMMENTS ON DRAFT CHESAPEAKE BAY TMDL ACTION PLAN

In accordance with MS4 Permit requirements, MCINCR-MCBQ must provide an opportunity for receipt and consideration of public comment on the CBAP. The "public" for MCINCR-MCBQ is defined as the employee and resident population. MCINCR-MCBQ will solicit feedback from the public on its CBAP. Feedback mechanisms may consist of feedback from employees via email to the appropriate MCINCR-MCBQ staff and from residents via a feedback form on the website and/or comments via social media. The opportunity to provide comments will be open for at least 15 days.

Public comments received on the draft will be included in **Appendix C.**

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8.0 DISCUSSION AND RECOMMENDATIONS

This section is not specifically required to be submitted as part of the CBAP according to the 2021 VDEQ Guidance Memo, but instead provides useful information regarding implementation of the CBAP, Annual Report development, and reapplication requirements for this permit cycle.

8.1 Chesapeake Bay TMDL Action Plan Implementation

Section I.B of the MS4 Permit describes implementation of the CBAP and requires implementation to be consistent with the schedule provided in the CBAP. Compliance with this requirement will represent adequate progress for this permit cycle towards achieving the TMDL wasteload allocations consistent with the assumptions and requirements of the TMDL. Implementation of the following represents implementation to the MEP and demonstrates adequate progress.

- Implementation of NMPs.
- Implementation of MCMs related to construction site stormwater runoff control.
- Implementation of the means and methods to address discharges from New Sources.
- Implementation of the means and methods sufficient to meet the required reductions of POC loads from Existing Sources.

8.2 Annual Reporting Requirements

After submittal of the CBAP, each subsequent Annual Report will include the following information related to the CBAP, where and when applicable.

- A list of BMPs implemented during the reporting period but not reported to the DEQ BMP Warehouse in accordance with Part I E 5 g of the MS4 Permit, and the estimated reduction of TN and TP achieved by each, reported in pounds per year;
- If the permittee acquired credits during the reporting period to meet all or a portion of the required reductions in Part II A 3, A 4, or A 5 of the MS4 Permit, a statement that credits were acquired;
- The progress, using the final design efficiency of the BMPs, toward meeting the required cumulative reductions for TN and TP; and
- A list of BMPs that are planned to be implemented during this reporting period.

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9.0 REFERENCES

9VAC25-890, *General VPDES Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems*, Virginia Legislative Information System. Available at https://law.lis.virginia.gov/admincode/title9/agency25/chapter890/

Energy Independence and Security Act of 2007 (EISA), Public Law 110-140, 19 Dec. 2007, available at http://www.gpo.gov/fdsys/pkg/PLAW-110publ140/pdf/PLAW-110publ140.pdf

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U.S. Department of Defense, 2015. Unified Facilities Criteria (UFC). *Low Impact Development*, UFC 3-210-10, Revised 1 March 2020, available at: https://www.wbdg.org/ffc/dod/unified-facilities-criteria-ufc/ufc-3-210-10

U.S. Department of the Navy, 2007. Memorandum for Deputy Chief of Naval Operations (Fleet Readiness and Logistics) Deputy Commandment of the Marine Corps (Installations and Logistics), Department of the Navy Low Impact Development (LID) Policy for Storm Water Management, 16 November 2007, available at: http://www.wbdg.org/pdfs/don_lid_policy_stormwater_memo_111607.pdf

Virginia Department of Environmental Quality, 2021. *Commonwealth of Virginia Department of Environmental Quality Water Division Guidance Memo No. 20-2003 (for Chesapeake Bay TMDL Special Condition Guidance),* Virginia Department of Environmental Quality, Water Division, Richmond, VA, 6 February 2021.

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APPENDIX A

Inventory of New BMPs (Installed 01 July 2009 and Later)

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Marine Corps Base Quantico, Virginia

Inventory for New BMPs (installed 1 July 2009 through 30 June 2020)

Location (Bldg. Name or Number)	Stormwater Management Facility Type	Date Brought Online or Most Recent Date Implemented (MM/YYYY)	Ownership	Corresponding Virginia BMP Clearinghouse Type	Corresponding Chesapeake Bay Program BMP Type	SubSource	Pollutant	Acres Served by BMP (Existing Sources dated 30 June 2009 only)	EOS Loading Rates (lbs/ac/yr)[1]	EOS Load (lbs/yr)	Reduction Efficiencies[2]	BMP Credits for inclusion into the CBAP (lbs)	Comments
Nonstructural BMPs Conducted Regularly Inside Regulated MS4													
Select Roads and Parking Areas	Street Sweeping	10/2015	Operator- owned	Street Sweeping	N/A	Regulated Urban Impervious	Nitrogen	76.20	15.4	1173.5	0.05	**58.7**	Regenerative vacuum-type sweepers used on all mainside roads, some parking lots, every two weeks. Contents dumped in solid waste dumpster. Reduction efficiencies in lbs/year/ac
						Regulated Urban Impervious	Phosphorus	76.20	2.0	152.4	0.06	**9.1**	
BMPs Installed with Construction Initiated 1 July 2009 - 30 June 2020 Inside Regulated MS4													
MCU: Bldg 3169 Parking	RP007 - Extended Dry Pond	01/2010	Operator- owned	Dry Extended Detention Ponds	N/A	N/A	N/A	N/A	N/A	N/A	N/A	**0.0**	The pond has returned to a forest-like condition and is no longer functional. No credit.
MCU: SNCO Academy (Bldg 3077)	RP010 - Bioretention Basin with underdrain	06/2010	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Regulated Urban Impervious	Nitrogen	0.20	16.86	3.4	64%	**2.2**	TP and TN efficiencies from VA BMP Clearinghouse. TSS efficiency determined from Chesapeake Bay Program Established Efficiency. This BMP treats both Existing and New Sources; therefore, it is eligible for partial credit. The Existing Sources acres treated is reflected in Column I.
						Regulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Regulated Urban Impervious	Phosphorus	0.20	1.62	0.3	55%	**0.2**	
						Regulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
MCU: SNCO Addition (Bldg 3077)	Bioretention Basin with underdrain	06/2013	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Regulated Urban Impervious	Nitrogen	0.20	16.86	3.4	64%	**2.2**	TP and TN efficiencies from VA BMP Clearinghouse. TSS efficiency determined from Chesapeake Bay Program Established Efficiency. This BMP treats both Existing and New Sources; therefore, it is eligible for partial credit. The Existing Sources acres treated is reflected in Column I.
						Regulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Regulated Urban Impervious	Phosphorus	0.20	1.62	0.3	55%	**0.2**	
						Regulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
MCU Addition	Bioretention Basin 1 with underdrain	06/2015	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Regulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Regulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Regulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Regulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
MCU Addition	Bioretention Basin 2 with underdrain	06/2015	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Regulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Regulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Regulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Regulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
MCU Addition	Bioretention Basin 3 with underdrain	06/2015	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Regulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Regulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Regulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Regulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
MCU Addition	Bioretention Basin 4 with underdrain	06/2015	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Regulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Regulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Regulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Regulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	

Marine Corps Base Quantico, Virginia

Inventory for New BMPs (installed 1 July 2009 through 30 June 2020)

Location (Bldg. Name or Number)	Stormwater Management Facility Type	Date Brought Online or Most Recent Date Implemented (MM/YYYY)	Ownership	Corresponding Virginia BMP Clearinghouse Type	Corresponding Chesapeake Bay Program BMP Type	SubSource	Pollutant	Acres Served by BMP (Existing Sources dated 30 June 2009 only)	EOS Loading Rates (lbs/ac/yr)[1]	EOS Load (lbs/yr)	Reduction Efficiencies[2]	BMP Credits for inclusion into the CBAP (lbs)	Comments
MCU Addition	Bioretention Basin 5 with underdrain	06/2015	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Regulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Regulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Regulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Regulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
MCU Addition	Bioretention Basin 6 with underdrain	06/2015	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Regulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Regulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Regulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Regulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
MCU Addition	Bioretention Basin 7 with underdrain	06/2015	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Regulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Regulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Regulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Regulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
MCU Addition	Bioretention Basin 8 with underdrain	06/2015	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Regulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Regulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Regulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Regulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
MCU Addition	Land Use Change: Demolition of Parking Lot and Conversion to Grass	Jun-15	Operator- owned	Land Use Change: Impervious to Grass	N/A	Regulated Urban Impervious	Nitrogen	1.60	16.86	27.0	4.27	**6.8**	Reduction efficiencies are EOS reduction in lbs/year/ac from Table V.H.1 of 2021 Guidance Memo.
						Regulated Urban Impervious	Phosphorus	1.60	1.62	2.6	0.00	**0.0**	
MCU Garage	Grass swale, no underdrain	12/2014	Operator- owned	Grass Channels Level 1	Vegetated Open Channel - Urban	Regulated Urban Impervious	Nitrogen	0.00	16.86	0.0	15%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Regulated Urban Pervious	Nitrogen	0.00	10.07	0.0	15%	**0.0**	
						Regulated Urban Impervious	Phosphorus	0.00	1.62	0.0	23%	**0.0**	
						Regulated Urban Pervious	Phosphorus	0.00	0.41	0.0	23%	**0.0**	
MCU Garage	Bioretention without underdrain	12/2014	Operator- owned	Bioretention Practices Level 2	Bioretention/ Raingardens	Regulated Urban Impervious	Nitrogen	0.00	16.86	0.0	90%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Regulated Urban Pervious	Nitrogen	0.00	10.07	0.0	90%	**0.0**	
						Regulated Urban Impervious	Phosphorus	0.00	1.62	0.0	90%	**0.0**	
						Regulated Urban Pervious	Phosphorus	0.00	0.41	0.0	90%	**0.0**	

Marine Corps Base Quantico, Virginia

Inventory for New BMPs (installed 1 July 2009 through 30 June 2020)

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Wounded Warriors (Bldg 1128)	RP011 - Extended Dry Pond	01/2010	Operator- owned	Ext. Det. Pond Level 1	Dry Extended Detention Pond	Regulated Urban Impervious	Nitrogen	0.00	16.86	0.0	10%	**0.0**	TP and TN efficiencies from VA BMP Clearinghouse. TSS efficiency determined from Chesapeake Bay Program Established Efficiency. This BMP treats both Existing and New Sources; therefore, it is eligible for partial credit. The Existing Sources acres treated is reflected in Column I.
						Regulated Urban Pervious	Nitrogen	1.40	10.07	14.1	10%	**1.4**	
						Regulated Urban Impervious	Phosphorus	0.00	1.62	0.0	15%	**0.0**	
						Regulated Urban Pervious	Phosphorus	1.40	0.41	0.6	15%	**0.1**	
Old Heat Plant	Land Use Change: Demolition of Buildings and Pavement and Conversion to Grass	01/2011	Operator- owned	Land Use Change: Impervious to Grass	N/A	Regulated Urban Impervious	Nitrogen	0.40	16.86	6.7	4.27	**1.7**	Reduction efficiencies are EOS reduction in lbs/year/ac from Table V.H.1 of 2021 Guidance Memo.
						Regulated Urban Impervious	Phosphorus	0.40	1.62	0.6	0.00	**0.0**	
Marine Corps Intelligence Activity (MCIA) Parking Garage	Bioretention basin with underdrain	01/2012	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Regulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Regulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Regulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Regulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
Greenside Apron Hangar	Grass swale 1	01/2011	Operator- owned	Grass Channels Level 1	Vegetated Open Channel - Urban	Regulated Urban Impervious	Nitrogen	2.40	16.86	40.5	15%	**6.1**	TP and TN efficiencies from VA BMP Clearinghouse. TSS efficiency determined from Chesapeake Bay Program Established Efficiency.
						Regulated Urban Pervious	Nitrogen	2.40	10.07	24.2	15%	**3.6**	
						Regulated Urban Impervious	Phosphorus	2.40	1.62	3.9	23%	**0.9**	
						Regulated Urban Pervious	Phosphorus	2.40	0.41	1.0	23%	**0.2**	
Old MCAF Dining Hall	Land Use Change: Demolition of Buildings and Pavement and Conversion to Grass	01/2015	Operator- owned	Land Use Change: Impervious to Grass	N/A	Regulated Urban Impervious	Nitrogen	0.30	16.86	5.1	4.27	**1.3**	Reduction efficiencies are EOS reduction in lbs/year/ac from Table V.H.1 of 2021 Guidance Memo.
						Regulated Urban Impervious	Phosphorus	0.30	1.62	0.5	0.00	**0.0**	
New MCAF BEQ and Dining Hall	Bioretention 1 with underdrain	01/2015	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Regulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Regulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Regulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Regulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
New MCAF BEQ and Dining Hall	Bioretention 2 with underdrain	01/2015	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Regulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Regulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Regulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Regulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	

Marine Corps Base Quantico, Virginia

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New MCAF BEQ and Dining Hall	Land Use Change: Demolition of Pavement and Conversion to Grass	01/2015	Operator- owned	Land Use Change: Impervious to Grass	N/A	Regulated Urban Impervious	Nitrogen	1.20	16.86	20.2	4.27	**5.1**	Reduction efficiencies are EOS reduction in lbs/year/ac from Table V.H.1 of 2021 Guidance Memo.
						Regulated Urban Impervious	Phosphorus	1.20	1.62	1.9	0.00	**0.0**	
Davis Center (Bldg 3300)	Bioretention 1 with underdrain	01/2012	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Regulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Regulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Regulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Regulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
Davis Center (Bldg 3300)	Bioretention 2 with underdrain	01/2012	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Regulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Regulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Regulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Regulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
Davis Center (Bldg 3300)	Bioretention 3 with underdrain	01/2012	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Regulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Regulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Regulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Regulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
Davis Center (Bldg 3300)	Filterra tree box 1	01/2012	Operator- owned	Bioretention Practices Level 2	Bioretention/ Raingardens	Regulated Urban Impervious	Nitrogen	0.00	16.86	0.0	90%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Regulated Urban Pervious	Nitrogen	0.00	10.07	0.0	90%	**0.0**	
						Regulated Urban Impervious	Phosphorus	0.00	1.62	0.0	90%	**0.0**	
						Regulated Urban Pervious	Phosphorus	0.00	0.41	0.0	90%	**0.0**	
Davis Center (Bldg 3300)	Filterra tree box 2	01/2012	Operator- owned	Bioretention Practices Level 2	Bioretention/ Raingardens	Regulated Urban Impervious	Nitrogen	0.00	16.86	0.0	90%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Regulated Urban Pervious	Nitrogen	0.00	10.07	0.0	90%	**0.0**	
						Regulated Urban Impervious	Phosphorus	0.00	1.62	0.0	90%	**0.0**	
						Regulated Urban Pervious	Phosphorus	0.00	0.41	0.0	90%	**0.0**	
Russell Road Widening Project (Davis Center to Credit Union)	Grass Swale	06/2015	Operator- owned	Grass Channels Level 1	Vegetated Open Channel - Urban	Regulated Urban Impervious	Nitrogen	0.00	16.86	0.0	15%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Regulated Urban Pervious	Nitrogen	0.00	10.07	0.0	15%	**0.0**	
						Regulated Urban Impervious	Phosphorus	0.00	1.62	0.0	23%	**0.0**	
						Regulated Urban Pervious	Phosphorus	0.00	0.41	0.0	23%	**0.0**	

Marine Corps Base Quantico, Virginia

Inventory for New BMPs (installed 1 July 2009 through 30 June 2020)

Location (Bldg. Name or Number)	Stormwater Management Facility Type	Date Brought Online or Most Recent Date Implemented (MM/YYYY)	Ownership	Corresponding Virginia BMP Clearinghouse Type	Corresponding Chesapeake Bay Program BMP Type	SubSource	Pollutant	Acres Served by BMP (Existing Sources dated 30 June 2009 only)	EOS Loading Rates (lbs/ac/yr)[1]	EOS Load (lbs/yr)	Reduction Efficiencies[2]	BMP Credits for inclusion into the CBAP (lbs)	Comments
Child Development Center	Bioretention Basin 1, with underdrain	01/2012	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Regulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Regulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Regulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Regulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
Child Development Center	Bioretention Basin 2, with underdrain	01/2012	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Regulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Regulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Regulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Regulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
Child Development Center	Bioretention Basin 3, with underdrain	01/2012	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Regulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Regulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Regulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Regulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
Child Development Center	Bioretention Basin 4, with underdrain	01/2012	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Regulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Regulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Regulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Regulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
Child Development Center	Bioretention Basin 5, with underdrain	01/2012	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Regulated Urban Impervious	Nitrogen	0.10	16.86	1.7	64%	**1.1**	TP and TN efficiencies from VA BMP Clearinghouse. TSS efficiency determined from Chesapeake Bay Program Established Efficiency. This BMP treats both Existing and New Sources; therefore, it is eligible for partial credit. The Existing Sources acres treated is reflected in Column I.
						Regulated Urban Pervious	Nitrogen	0.60	10.07	6.0	64%	**3.9**	
						Regulated Urban Impervious	Phosphorus	0.10	1.62	0.2	55%	**0.1**	
						Regulated Urban Pervious	Phosphorus	0.60	0.41	0.2	55%	**0.1**	
Child Development Center	Extended Dry Pond	01/2012	Operator- owned	Ext. Det. Pond Level 1	Dry Extended Detention Pond	Regulated Urban Impervious	Nitrogen	0.40	16.86	6.7	10%	**0.7**	TP and TN efficiencies from VA BMP Clearinghouse. TSS efficiency determined from Chesapeake Bay Program Established Efficiency. This BMP treats both Existing and New Sources; therefore, it is eligible for partial credit. The Existing Sources acres treated is reflected in Column I.
						Regulated Urban Pervious	Nitrogen	2.30	10.07	23.2	10%	**2.3**	
						Regulated Urban Impervious	Phosphorus	0.40	1.62	0.6	15%	**0.1**	
						Regulated Urban Pervious	Phosphorus	2.30	0.41	0.9	15%	**0.1**	
Child Development Center	Grass Swale	01/2012	Operator- owned	Grass Channels Level 1	Vegetated Open Channel - Urban	Regulated Urban Impervious	Nitrogen	0.90	16.86	15.2	15%	**2.3**	TP and TN efficiencies from VA BMP Clearinghouse. TSS efficiency determined from Chesapeake Bay Program Established Efficiency. This BMP treats both Existing and New Sources; therefore, it is eligible for partial credit. The Existing Sources acres treated is reflected in Column I.
						Regulated Urban Pervious	Nitrogen	3.00	10.07	30.2	15%	**4.5**	
						Regulated Urban Impervious	Phosphorus	0.90	1.62	1.5	23%	**0.3**	
						Regulated Urban Pervious	Phosphorus	3.00	0.41	1.2	23%	**0.3**	

Marine Corps Base Quantico, Virginia

Inventory for New BMPs (installed 1 July 2009 through 30 June 2020)

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Child Development Center	Pervious Pavers Grass/Sand with underdrain	01/2012	Operator- owned	Permeable Pavement Level 1	Permeable Pavement - with Sandveg with Underdrain with AB soils	Regulated Urban Impervious	Nitrogen	0.00	16.86	0.0	59%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Regulated Urban Pervious	Nitrogen	0.00	10.07	0.0	59%	**0.0**	
						Regulated Urban Impervious	Phosphorus	0.00	1.62	0.0	59%	**0.0**	
						Regulated Urban Pervious	Phosphorus	0.00	0.41	0.0	59%	**0.0**	
Child Development Center	Wet Pond	01/2012	Operator- owned	Wet Ponds Level 1	Wet Ponds and Wetlands	Regulated Urban Impervious	Nitrogen	1.50	16.86	25.3	30%	**7.6**	TP and TN efficiencies from VA BMP Clearinghouse. TSS efficiency determined from Chesapeake Bay Program Established Efficiency. This BMP treats both Existing and New Sources; therefore, it is eligible for partial credit. The Existing Sources acres treated is reflected in Column I.
						Regulated Urban Pervious	Nitrogen	3.50	10.07	35.2	30%	**10.6**	
						Regulated Urban Impervious	Phosphorus	1.50	1.62	2.4	50%	**1.2**	
						Regulated Urban Pervious	Phosphorus	3.50	0.41	1.4	50%	**0.7**	
Commissary	Bioretention with underdrain	01/2010	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Regulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Regulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Regulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Regulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
Commissary	Extended Dry Pond	01/2010	Operator- owned	Ext. Det. Pond Level 1	Dry Extended Detention Pond	Regulated Urban Impervious	Nitrogen	2.30	16.86	38.8	10%	**3.9**	TP and TN efficiencies from VA BMP Clearinghouse. TSS efficiency determined from Chesapeake Bay Program Established Efficiency. This BMP treats both Existing and New Sources; therefore, it is eligible for partial credit. The Existing Sources acres treated is reflected in Column I.
						Regulated Urban Pervious	Nitrogen	2.10	10.07	21.1	10%	**2.1**	
						Regulated Urban Impervious	Phosphorus	2.30	1.62	3.7	15%	**0.6**	
						Regulated Urban Pervious	Phosphorus	2.10	0.41	0.9	15%	**0.1**	
Commissary	Dry Pond	01/2010	Operator- owned	Ext. Det. Pond Level 1	Dry Extended Detention Pond	Regulated Urban Impervious	Nitrogen	0.20	16.86	3.4	10%	**0.3**	TP and TN efficiencies from VA BMP Clearinghouse. TSS efficiency determined from Chesapeake Bay Program Established Efficiency.
						Regulated Urban Pervious	Nitrogen	0.10	10.07	1.0	10%	**0.1**	
						Regulated Urban Impervious	Phosphorus	0.20	1.62	0.3	15%	**0.0**	
						Regulated Urban Pervious	Phosphorus	0.10	0.41	0.0	15%	**0.0**	
Fuller Road Substation	Extended Dry Pond	01/2014	Operator- owned	Ext. Det. Pond Level 1	Dry Extended Detention Pond	Regulated Urban Impervious	Nitrogen	0.00	16.86	0.0	10%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Regulated Urban Pervious	Nitrogen	0.00	10.07	0.0	10%	**0.0**	
						Regulated Urban Impervious	Phosphorus	0.00	1.62	0.0	15%	**0.0**	
						Regulated Urban Pervious	Phosphorus	0.00	0.41	0.0	15%	**0.0**	
Old Stables on Fuller Road	Land Use Change: Demolition of Buildings and Conversion to Grass	01/2014	Operator- owned	Land Use Change: Impervious to Grass	N/A	Regulated Urban Impervious	Nitrogen	0.30	16.86	5.1	4.27	**1.3**	Reduction efficiencies are EOS reduction in lbs/year/ac from Table V.H.1 of 2021 Guidance Memo.
						Regulated Urban Impervious	Phosphorus	0.30	1.62	0.5	0.00	**0.0**	

Marine Corps Base Quantico, Virginia

Inventory for New BMPs (installed 1 July 2009 through 30 June 2020)

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Consolidated Elementary School	Bioretention 1 with underdrain	01/2015	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Regulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Regulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Regulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Regulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
Consolidated Elementary School	Bioretention 2 with underdrain	01/2015	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Regulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Regulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Regulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Regulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
Consolidated Elementary School	Bioretention 3 with underdrain	01/2015	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Regulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Regulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Regulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Regulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
Consolidated Elementary School	Bioretention 4 with underdrain	01/2015	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Regulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Regulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Regulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Regulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
Consolidated Elementary School	Bioretention 5 with underdrain	01/2015	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Regulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Regulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Regulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Regulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
Consolidated Elementary School	Bioretention 6 with underdrain	01/2015	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Regulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Regulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Regulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Regulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
Consolidated Elementary School	Grass swale, no underdrain	01/2015	Operator- owned	Grass Channels	Vegetated Open Channel - Urban	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	15%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	15%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	23%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	23%	**0.0**	

Marine Corps Base Quantico, Virginia

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Consolidated Elementary School	Sheetflow to Conserved Open Space	01/2015	Operator- owned	Sheetflow to Vegetated Filter or Conserved Open Space	N/A	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	50%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	50%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	50%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	50%	**0.0**	
Quantico Clubs - Extended Detention Pond	Dry Pond	Unknown	Operator- owned	Dry Detention Ponds Level 1	Dry Extended Detention Pond	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	10%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	10%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	15%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	15%	**0.0**	
TECOM	Bioretention A with underdrain	01/2019	Operator- owned	Bioretention Practices Level 2	Bioretention/ Raingardens	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	90%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	90%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	90%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	90%	**0.0**	
TECOM	Bioretention B with underdrain	01/2019	Operator- owned	Bioretention Practices Level 2	Bioretention/ Raingardens	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	90%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	90%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	90%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	90%	**0.0**	
TECOM	Bioretention C with underdrain	01/2019	Operator- owned	Bioretention Practices Level 2	Bioretention/ Raingardens	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	90%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	90%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	90%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	90%	**0.0**	
TECOM	Bioretention D with underdrain	01/2019	Operator- owned	Bioretention Practices Level 2	Bioretention/ Raingardens	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	90%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	90%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	90%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	90%	**0.0**	
Russel Road	Grass swale 1	01/2019	Operator- owned	Dry Swale Level 1	Vegetated Open Channel –Urban – C/D soils, no underdrain	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	55%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	55%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	52%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	52%	**0.0**	

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Russel Road	Grass swale 2	01/2019	Operator- owned	Dry Swale Level 1	Vegetated Open Channel –Urban – C/D soils, no underdrain	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	55%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	55%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	52%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	52%	**0.0**	
Russel Road	Grass swale 3	01/2019	Operator- owned	Dry Swale Level 1	Vegetated Open Channel –Urban – C/D soils, no underdrain	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	55%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	55%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	52%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	52%	**0.0**	
Russel Road	Grass swale 4	01/2019	Operator- owned	Dry Swale Level 1	Vegetated Open Channel –Urban – C/D soils, no underdrain	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	55%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	55%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	52%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	52%	**0.0**	
Russel Road	Grass swale 5	01/2019	Operator- owned	Dry Swale Level 1	Vegetated Open Channel –Urban – C/D soils, no underdrain	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	55%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	55%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	52%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	52%	**0.0**	
Russel Road	Grass swale 6	01/2019	Operator- owned	Dry Swale Level 1	Vegetated Open Channel –Urban – C/D soils, no underdrain	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	55%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	55%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	52%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	52%	**0.0**	
Russel Road	Grass swale 7	01/2019	Operator- owned	Dry Swale Level 1	Vegetated Open Channel –Urban – C/D soils, no underdrain	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	55%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	55%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	52%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	52%	**0.0**	
Russel Road	Grass swale 6A	01/2019	Operator- owned	Dry Swale Level 1	Vegetated Open Channel –Urban – C/D soils, no underdrain	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	55%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	55%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	52%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	52%	**0.0**	

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Inventory for New BMPs (installed 1 July 2009 through 30 June 2020)

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Russel Road	Grass swale 6B	01/2019	Operator- owned	Dry Swale Level 1	Vegetated Open Channel –Urban – C/D soils, no underdrain	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	55%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	55%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	52%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	52%	**0.0**	
McDonalds	Bioretention with underdrain	12/2015	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
BMPs Installed with Construction Initiated 1 July 2009 - 30 June 2020 Outside Regulated MS4													
Heritage Center Parkway	Grass swale 1	01/2015	Operator- owned	Grass Channels Level 1	Vegetated Open Channel –Urban – C/D soils, no underdrain	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	15%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	15%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	23%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	23%	**0.0**	
Heritage Center Parkway	Grass swale 2	01/2015	Operator- owned	Grass Channels Level 1	Vegetated Open Channel –Urban – C/D soils, no underdrain	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	15%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	15%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	23%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	23%	**0.0**	
Greenside Apron Hangar	Grass swale 2	01/2011	Operator- owned	Grass Channels Level 1	Vegetated Open Channel –Urban – C/D soils, no underdrain	Unregulated Urban Impervious	Nitrogen	3.50	16.86	59.0	15%	**8.9**	TP and TN efficiencies from VA BMP Clearinghouse. TSS efficiency determined from Chesapeake Bay Program Established Efficiency.
						Unregulated Urban Pervious	Nitrogen	3.30	10.07	33.2	15%	**5.0**	
						Unregulated Urban Impervious	Phosphorus	3.50	1.62	5.7	23%	**1.3**	
						Unregulated Urban Pervious	Phosphorus	3.30	0.41	1.4	23%	**0.3**	
Flight Simulator	Grass Swale	01/2011	Operator- owned	Grass Channels Level 1	Vegetated Open Channel –Urban – C/D soils, no underdrain	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	15%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	15%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	23%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	23%	**0.0**	
OCS Headquarters	Bioretention 1 with underdrain	01/2012	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	

Marine Corps Base Quantico, Virginia

Inventory for New BMPs (installed 1 July 2009 through 30 June 2020)

Location (Bldg. Name or Number)	Stormwater Management Facility Type	Date Brought Online or Most Recent Date Implemented (MM/YYYY)	Ownership	Corresponding Virginia BMP Clearinghouse Type	Corresponding Chesapeake Bay Program BMP Type	SubSource	Pollutant	Acres Served by BMP (Existing Sources dated 30 June 2009 only)	EOS Loading Rates (lbs/ac/yr)[1]	EOS Load (lbs/yr)	Reduction Efficiencies[2]	BMP Credits for inclusion into the CBAP (lbs)	Comments
OCS Headquarters	Bioretention 2 with underdrain	01/2012	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
OCS Mess Hall	Grass Swale	01/2012	Operator- owned	Grass Channels Level 1	Vegetated Open Channel - Urban	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	15%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	15%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	23%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	23%	**0.0**	
OCS Mess Hall	Wet Pond	01/2012	Operator- owned	Wet Ponds Level 1	Wet Ponds and Wetlands	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	30%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	30%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	50%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	50%	**0.0**	
Old OCS Building	Land Use Change: Demolition of Building and Conversion to Grass	01/2012	Operator- owned	Land Use Change: Impervious to Grass	N/A	Regulated Urban Impervious	Nitrogen	0.20	16.86	3.4	4.27	**0.9**	Reduction efficiencies are EOS reduction in lbs/year/ac from Table V.H.1 of 2021 Guidance Memo.
						Regulated Urban Impervious	Phosphorus	0.20	1.62	0.3	0.00	**0.0**	
Old Brig	Land Use Change: Demolition of Building and Conversion to Grass	01/2013	Operator- owned	Land Use Change: Impervious to Grass	N/A	Regulated Urban Impervious	Nitrogen	0.90	16.86	15.2	4.27	**3.8**	Reduction efficiencies are EOS reduction in lbs/year/ac from Table V.H.1 of 2021 Guidance Memo.
						Regulated Urban Impervious	Phosphorus	0.90	1.62	1.5	0.00	**0.0**	
Russell Road Landfill	Grass Swale 2	09/2014	Operator- owned	Grass Channels Level 1	Vegetated Open Channel - Urban	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	55%	**0.0**	TP and TN efficiencies from VA BMP Clearinghouse. TSS efficiency determined from Chesapeake Bay Program Established Efficiency.
						Unregulated Urban Pervious	Nitrogen	5.90	10.07	59.4	55%	**32.7**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	52%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	5.90	0.41	2.4	52%	**1.3**	
Russell Road Infrastructure Project	Grass Swale 1	01/2011	Operator- owned	Grass Channels Level 1	Vegetated Open Channel - Urban	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	55%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	55%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	52%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	52%	**0.0**	

Marine Corps Base Quantico, Virginia

Inventory for New BMPs (installed 1 July 2009 through 30 June 2020)

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Russell Road Infrastructure Project	Grass Swale 2	01/2011	Operator- owned	Grass Channels Level 1	Vegetated Open Channel - Urban	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	55%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	55%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	52%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	52%	**0.0**	
Russell Road Infrastructure Project	Grass Swale 3	01/2011	Operator- owned	Grass Channels Level 1	Vegetated Open Channel - Urban	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	55%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	55%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	52%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	52%	**0.0**	
Russell Road Infrastructure Project	Wet Pond 1	01/2011	Operator- owned	Wet Ponds Level 1	Wet Ponds and Wetlands	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	30%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	30%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	50%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	50%	**0.0**	
Russell Road Infrastructure Project	Wet Pond 2	01/2011	Operator- owned	Wet Ponds Level 1	Wet Ponds and Wetlands	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	30%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	30%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	50%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	50%	**0.0**	
Russell Road Infrastructure Project	Wet Pond 3	01/2011	Operator- owned	Wet Ponds Level 1	Wet Ponds and Wetlands	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	30%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	30%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	50%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	50%	**0.0**	
Military Department Investigation Agencies (MDIA)	RP038 - Wet Pond	01/2010	Operator- owned	Wet Ponds Level 1	Wet Ponds and Wetlands	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	30%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	30%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	50%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	50%	**0.0**	
MDIA Addition	Grass Swale	12/2014	Operator- owned	Grass Channels Level 1	Vegetated Open Channel - Urban	Unregulated Urban Impervious	Nitrogen	0.62	16.86	10.5	15%	**1.6**	TP and TN efficiencies from VA BMP Clearinghouse. TSS efficiency determined from Chesapeake Bay Program Established Efficiency.
						Unregulated Urban Pervious	Nitrogen	1.60	10.07	16.1	15%	**2.4**	
						Unregulated Urban Impervious	Phosphorus	0.62	1.62	1.0	23%	**0.2**	
						Unregulated Urban Pervious	Phosphorus	1.60	0.41	0.7	23%	**0.2**	

Marine Corps Base Quantico, Virginia

Inventory for New BMPs (installed 1 July 2009 through 30 June 2020)

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FBI Bypass	Extended Dry Pond 1	01/2012	Operator- owned	Ext. Det. Pond Level 1	Dry Extended Detention Pond	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	10%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	10%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	15%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	15%	**0.0**	
FBI Bypass	Extended Dry Pond 2	01/2012	Operator- owned	Ext. Det. Pond Level 1	Dry Extended Detention Pond	Unregulated Urban Impervious	Nitrogen	0.90	16.86	15.2	10%	**1.5**	TP and TN efficiencies from VA BMP Clearinghouse. TSS efficiency determined from Chesapeake Bay Program Established Efficiency. This BMP treats both Existing and New Sources; therefore, it is eligible for partial credit. The Existing Sources acres treated is reflected in Column I.
						Unregulated Urban Pervious	Nitrogen	2.50	10.07	25.2	10%	**2.5**	
						Unregulated Urban Impervious	Phosphorus	0.90	1.62	1.5	15%	**0.2**	
						Unregulated Urban Pervious	Phosphorus	2.50	0.41	1.0	15%	**0.2**	
FBI Bypass	Grass Swale 1	01/2012	Operator- owned	Grass Channels Level 1	Vegetated Open Channel - Urban	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	15%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	15%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	23%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	23%	**0.0**	
FBI Bypass	Grass Swale 2	01/2012	Operator- owned	Grass Channels Level 1	Vegetated Open Channel - Urban	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	15%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	15%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	23%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	23%	**0.0**	
FBI Bypass	Wet Pond 1	01/2012	Operator- owned	Wet Ponds Level 1	Wet Ponds and Wetlands	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	30%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	30%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	50%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	50%	**0.0**	
FBI Bypass	Wet Pond 2	01/2012	Operator- owned	Wet Ponds Level 1	Wet Ponds and Wetlands	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	30%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	30%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	50%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	50%	**0.0**	
MCB-2 Landfill	Wet pond 1	01/2012	Operator- owned	Wet Ponds Level 1	Wet Ponds and Wetlands	Unregulated Urban Impervious	Nitrogen	0.50	16.86	8.4	30%	**2.5**	TP and TN efficiencies from VA BMP Clearinghouse. TSS efficiency determined from Chesapeake Bay Program Established Efficiency.
						Unregulated Urban Pervious	Nitrogen	6.90	10.07	69.5	30%	**20.8**	
						Unregulated Urban Impervious	Phosphorus	0.50	1.62	0.8	50%	**0.4**	
						Unregulated Urban Pervious	Phosphorus	6.90	0.41	2.8	50%	**1.4**	

Marine Corps Base Quantico, Virginia

Inventory for New BMPs (installed 1 July 2009 through 30 June 2020)

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MCB-2 Landfill	Wet pond 2	01/2012	Operator- owned	Wet Ponds Level 1	Wet Ponds and Wetlands	Unregulated Urban Impervious	Nitrogen	1.00	16.86	16.9	30%	**5.1**	TP and TN efficiencies from VA BMP Clearinghouse. TSS efficiency determined from Chesapeake Bay Program Established Efficiency.
						Unregulated Urban Pervious	Nitrogen	5.60	10.07	56.4	30%	**16.9**	
						Unregulated Urban Impervious	Phosphorus	1.00	1.62	1.6	50%	**0.8**	
						Unregulated Urban Pervious	Phosphorus	5.60	0.41	2.3	50%	**1.1**	
Marine Corps Information Operations Center (MCIOC)/Mari ne Corps Network Operations Security Center (MCNOSC) (Bldg 27410)	Grass Swale 1	01/2012	Operator- owned	Grass Channels Level 1	Vegetated Open Channel - Urban	Unregulated Urban Impervious	Nitrogen	1.50	16.86	25.3	15%	**3.8**	TP and TN efficiencies from VA BMP Clearinghouse. TSS efficiency determined from Chesapeake Bay Program Established Efficiency. This BMP treats both Existing and New Sources; therefore, it is eligible for partial credit. The Existing Sources acres treated is reflected in Column I.
						Unregulated Urban Pervious	Nitrogen	1.30	10.07	13.1	15%	**2.0**	
						Unregulated Urban Impervious	Phosphorus	1.50	1.62	2.4	23%	**0.6**	
						Unregulated Urban Pervious	Phosphorus	1.30	0.41	0.5	23%	**0.1**	
MCIOC/ MCNOSC (Bldg 27410)	Grasse Swale 2	01/2012	Operator- owned	Grass Channels Level 1	Vegetated Open Channel - Urban	Unregulated Urban Impervious	Nitrogen	0.60	16.86	10.1	15%	**1.5**	TP and TN efficiencies from VA BMP Clearinghouse. TSS efficiency determined from Chesapeake Bay Program Established Efficiency. This BMP treats both Existing and New Sources; therefore, it is eligible for partial credit. The Existing Sources acres treated is reflected in Column I.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	15%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.60	1.62	1.0	23%	**0.2**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	23%	**0.0**	
MCIOC/ MCNOSC (Bldg 27410)	RP039 - Extended Dry Pond	Installed 01/2007, Retrofit 01/2012	Operator- owned	Ext. Det. Pond Level 1	Dry Extended Detention Pond	Unregulated Urban Impervious	Nitrogen	0.70	16.9	11.8	10%	**1.2**	TP and TN efficiencies from VA BMP Clearinghouse. TSS efficiency determined from Chesapeake Bay Program Established Efficiency. This BMP treats both Existing and New Sources; therefore, it is eligible for partial credit. The Existing Sources acres treated is reflected in Column I.
						Unregulated Urban Pervious	Nitrogen	0.90	10.1	9.1	10%	**0.9**	
						Unregulated Urban Impervious	Phosphorus	0.70	1.6	1.1	15%	**0.2**	
						Unregulated Urban Pervious	Phosphorus	0.90	0.4	0.4	15%	**0.1**	
MCIOC/ MCNOSC (Bldg 27410)	Wet Pond 1	01/2012	Operator- owned	Wet Ponds Level 1	Wet Ponds and Wetlands	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	30%	**0.0**	TP and TN efficiencies from VA BMP Clearinghouse. TSS efficiency determined from Chesapeake Bay Program Established Efficiency.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	30%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	50%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	50%	**0.0**	
MCIOC/ MCNOSC (Bldg 27410)	Wet Pond 2	01/2012	Operator- owned	Wet Ponds Level 1	Wet Ponds and Wetlands	Unregulated Urban Impervious	Nitrogen	1.10	16.86	18.5	30%	**5.6**	TP and TN efficiencies from VA BMP Clearinghouse. TSS efficiency determined from Chesapeake Bay Program Established Efficiency. This BMP treats both Existing and New Sources; therefore, it is eligible for partial credit. The Existing Sources acres treated is reflected in Column I.
						Unregulated Urban Pervious	Nitrogen	1.50	10.07	15.1	30%	**4.5**	
						Unregulated Urban Impervious	Phosphorus	1.10	1.62	1.8	50%	**0.9**	
						Unregulated Urban Pervious	Phosphorus	1.50	0.41	0.6	50%	**0.3**	
MCIOC/ MCNOSC (Bldg 27410)	Wet Pond 3	01/2012	Operator- owned	Wet Ponds Level 1	Wet Ponds and Wetlands	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	30%	**0.0**	TP and TN efficiencies from VA BMP Clearinghouse. TSS efficiency determined from Chesapeake Bay Program Established Efficiency. This BMP treats both Existing and New Sources; therefore, it is eligible for partial credit. The Existing Sources acres treated is reflected in Column I.
						Unregulated Urban Pervious	Nitrogen	0.50	10.07	5.0	30%	**1.5**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	50%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.50	0.41	0.2	50%	**0.1**	

Marine Corps Base Quantico, Virginia

Inventory for New BMPs (installed 1 July 2009 through 30 June 2020)

Location (Bldg. Name or Number)	Stormwater Management Facility Type	Date Brought Online or Most Recent Date Implemented (MM/YYYY)	Ownership	Corresponding Virginia BMP Clearinghouse Type	Corresponding Chesapeake Bay Program BMP Type	SubSource	Pollutant	Acres Served by BMP (Existing Sources dated 30 June 2009 only)	EOS Loading Rates (lbs/ac/yr)[1]	EOS Load (lbs/yr)	Reduction Efficiencies[2]	BMP Credits for inclusion into the CBAP (lbs)	Comments
MCIOC/ MCNOSC (near Fuel Farm)	Grasse Swale 4	01/2013	Operator- owned	Grass Channels Level 1	Vegetated Open Channel - Urban	Unregulated Urban Impervious	Nitrogen	0.70	16.86	11.8	15%	**1.8**	TP and TN efficiencies from VA BMP Clearinghouse. TSS efficiency determined from Chesapeake Bay Program Established Efficiency.
						Unregulated Urban Impervious	Phosphorus	0.70	1.62	1.1	23%	**0.3**	
MSG Training Facility	Extended Dry Pond	01/2011	Operator- owned	Ext. Det. Pond Level 1	Dry Extended Detention Pond	Unregulated Urban Impervious	Nitrogen	0.50	16.86	8.4	10%	**0.8**	TP and TN efficiencies from VA BMP Clearinghouse. TSS efficiency determined from Chesapeake Bay Program Established Efficiency. This BMP treats both Existing and New Sources; therefore, it is eligible for partial credit. The Existing Sources acres treated is reflected in Column I.
						Unregulated Urban Pervious	Nitrogen	0.20	10.07	2.0	10%	**0.2**	
						Unregulated Urban Impervious	Phosphorus	0.50	1.62	0.8	15%	**0.1**	
						Unregulated Urban Pervious	Phosphorus	0.20	0.41	0.1	15%	**0.0**	
MSG Training Facility	Grass Swale	01/2012	Operator- owned	Grass Channels Level 1	Vegetated Open Channel - Urban	Unregulated Urban Impervious	Nitrogen	0.30	16.86	5.1	15%	**0.8**	TP and TN efficiencies from VA BMP Clearinghouse. TSS efficiency determined from Chesapeake Bay Program Established Efficiency. This BMP treats both Existing and New Sources; therefore, it is eligible for partial credit. The Existing Sources acres treated is reflected in Column I.
						Unregulated Urban Pervious	Nitrogen	0.20	10.07	2.0	15%	**0.3**	
						Unregulated Urban Impervious	Phosphorus	0.30	1.62	0.5	23%	**0.1**	
						Unregulated Urban Pervious	Phosphorus	0.20	0.41	0.1	23%	**0.0**	
MSG Battalion	Bioretention 1 with underdrain	01/2010	Operator- owned	Bioretention Practices Level 2	Bioretention/ Raingardens	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	90%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	90%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	90%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	90%	**0.0**	
MSG Battalion	Bioretention 2 with underdrain	01/2010	Operator- owned	Bioretention Practices Level 2	Bioretention/ Raingardens	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	90%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	90%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	90%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	90%	**0.0**	
MSG Battalion	Bioretention 3 with underdrain	01/2010	Operator- owned	Bioretention Practices Level 2	Bioretention/ Raingardens	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	90%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	90%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	90%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	90%	**0.0**	
MSG Battalion	Pervious Pavers Grass/Sand	01/2010	Operator- owned	Permeable Pavement Level 1	Permeable Pavement - with sandveg with under drain with C/D soils	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	59%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	59%	**0.0**	
WTBn BEQ	Grass Swale 1	12/2013	Operator- owned	Grass Channels Level 1	Vegetated Open Channel - Urban	Unregulated Urban Impervious	Nitrogen	0.08	16.86	1.3	15%	**0.2**	TP and TN efficiencies from VA BMP Clearinghouse. TSS efficiency determined from Chesapeake Bay Program Established Efficiency.
						Unregulated Urban Pervious	Nitrogen	0.16	10.07	1.6	15%	**0.2**	
						Unregulated Urban Impervious	Phosphorus	0.08	1.62	0.1	23%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.16	0.41	0.1	23%	**0.0**	

Marine Corps Base Quantico, Virginia

Inventory for New BMPs (installed 1 July 2009 through 30 June 2020)

Location (Bldg. Name or Number)	Stormwater Management Facility Type	Date Brought Online or Most Recent Date Implemented (MM/YYYY)	Ownership	Corresponding Virginia BMP Clearinghouse Type	Corresponding Chesapeake Bay Program BMP Type	SubSource	Pollutant	Acres Served by BMP (Existing Sources dated 30 June 2009 only)	EOS Loading Rates (lbs/ac/yr)[1]	EOS Load (lbs/yr)	Reduction Efficiencies[2]	BMP Credits for inclusion into the CBAP (lbs)	Comments
WTBn BEQ	Grass Swale 2	12/2013	Operator- owned	Grass Channels Level 1	Vegetated Open Channel - Urban	Unregulated Urban Impervious	Nitrogen	0.64	16.86	10.8	15%	**1.6**	TP and TN efficiencies from VA BMP Clearinghouse. TSS efficiency determined from Chesapeake Bay Program Established Efficiency.
						Unregulated Urban Pervious	Nitrogen	1.24	10.07	12.5	15%	**1.9**	
						Unregulated Urban Impervious	Phosphorus	0.64	1.62	1.0	23%	**0.2**	
						Unregulated Urban Pervious	Phosphorus	1.24	0.41	0.5	23%	**0.1**	
WTBn BEQ	Bioswale	12/2013	Operator- owned	Dry Swale Level 2	Bioswale	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	74%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	74%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	76%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	76%	**0.0**	
WTBn BEQ	Bioretention Basin 1 with underdrain	12/2013	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
WTBn BEQ	Bioretention Basin 2 with underdrain	12/2013	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
WTBn BEQ	Bioretention Basin 3 with underdrain	12/2013	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
WTBn BEQ	Bioretention Basin 4 with underdrain	12/2013	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
WTBn BEQ	Bioretention Basin 5 with underdrain	12/2013	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	

Marine Corps Base Quantico, Virginia

Inventory for New BMPs (installed 1 July 2009 through 30 June 2020)

Location (Bldg. Name or Number)	Stormwater Management Facility Type	Date Brought Online or Most Recent Date Implemented (MM/YYYY)	Ownership	Corresponding Virginia BMP Clearinghouse Type	Corresponding Chesapeake Bay Program BMP Type	SubSource	Pollutant	Acres Served by BMP (Existing Sources dated 30 June 2009 only)	EOS Loading Rates (lbs/ac/yr)[1]	EOS Load (lbs/yr)	Reduction Efficiencies[2]	BMP Credits for inclusion into the CBAP (lbs)	Comments
WTBn BEQ	Bioretention Basin 6 with underdrain	12/2013	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
WTBn BEQ	Bioretention Basin 7 with underdrain	12/2013	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
WTBn BEQ	Bioretention Basin 8 with underdrain	12/2013	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
WTBn BEQ	Bioretention Basin 9 with underdrain	12/2013	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
WTBn BEQ	Bioretention Basin 10 with underdrain	12/2013	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
TBS (Bldg 24195)	RP045 - Wet Pond	01/2010	Operator- owned	Wet Ponds Level 1	Wet Ponds and Wetlands	Unregulated Urban Impervious	Nitrogen	2.20	16.86	37.1	30%	**11.1**	TP and TN efficiencies from VA BMP Clearinghouse. TSS efficiency determined from Chesapeake Bay Program Established Efficiency. This BMP treats both Existing and New Sources; therefore, it is eligible for partial credit. The Existing Sources acres treated is reflected in Column I.
						Unregulated Urban Pervious	Nitrogen	2.30	10.07	23.2	30%	**6.9**	
						Unregulated Urban Impervious	Phosphorus	2.20	1.62	3.6	50%	**1.8**	
						Unregulated Urban Pervious	Phosphorus	2.30	0.41	0.9	50%	**0.5**	
New Parking Lot and Buildings at TBS	Bay Saver 1	01/2014	Operator- owned	BaySaver (Filter) MTD	N/A	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	0.3495	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits. Runoff depth treated is assumed at 1 inch.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	0.3495	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	50%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	50%	**0.0**	

Marine Corps Base Quantico, Virginia

Inventory for New BMPs (installed 1 July 2009 through 30 June 2020)

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New Covered Parking Lot at TBS	Bay Saver 2	01/2014	Operator- owned	BaySaver (Filter) MTD	N/A	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	0.3495	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits. Runoff depth treated is assumed at 1 inch.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	0.3495	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	50%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	50%	**0.0**	
New Camp Upshur WWTP	Grass Swale 1, no underdrain	12/2014	Operator- owned	Grass Channels Level 1	Vegetated Open Channel - Urban	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	15%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	15%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	23%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	23%	**0.0**	
New Camp Upshur WWTP	Grass Swale 2, no underdrain	12/2014	Operator- owned	Grass Channels Level 1	Vegetated Open Channel - Urban	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	15%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	15%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	23%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	23%	**0.0**	
New Camp Upshur WWTP	Grass Swale 3, no underdrain	12/2014	Operator- owned	Grass Channels Level 1	Vegetated Open Channel - Urban	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	15%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	15%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	23%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	23%	**0.0**	
New Camp Upshur WWTP	Bioretention Basin 1 with underdrain	12/2014	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
New Camp Upshur WWTP	Bioretention Basin 2 with underdrain	12/2014	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
New Camp Upshur WWTP	Bioretention Basin 3 with underdrain	12/2014	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	

Marine Corps Base Quantico, Virginia

Inventory for New BMPs (installed 1 July 2009 through 30 June 2020)

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New Camp Upshur WWTP	Bioretention Basin 4 with underdrain	12/2014	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
TBS Parking Lot	BaySaver/ Filter	10/2018	Operator- owned	BaySaver (Filter) MTD	N/A	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	0.3495	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits. Runoff depth treated is assumed at 1 inch.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	0.3495	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	50%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	50%	**0.0**	
Ammo Supply Point	Bioretention Basin 1 with underdrain	01/2019	Operator- owned	Bioretention Practices Level 2	Bioretention/ Raingardens	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	90%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	90%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	90%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	90%	**0.0**	
Ammo Supply Point	Bioretention Basin 2 with underdrain	01/2019	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
Ammo Supply Point	Bioretention Basin 3 with underdrain	01/2019	Operator- owned	Bioretention Practices Level 2	Bioretention/ Raingardens	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	90%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	90%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	90%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	90%	**0.0**	
Ammo Supply Point	Bioretention Basin 4 with underdrain	01/2019	Operator- owned	Bioretention Practices Level 2	Bioretention/ Raingardens	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	90%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	90%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	90%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	90%	**0.0**	
Ammo Supply Point	Bioretention Basin 5 with underdrain	01/2019	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	

Marine Corps Base Quantico, Virginia

Inventory for New BMPs (installed 1 July 2009 through 30 June 2020)

Location (Bldg. Name or Number)	Stormwater Management Facility Type	Date Brought Online or Most Recent Date Implemented (MM/YYYY)	Ownership	Corresponding Virginia BMP Clearinghouse Type	Corresponding Chesapeake Bay Program BMP Type	SubSource	Pollutant	Acres Served by BMP (Existing Sources dated 30 June 2009 only)	EOS Loading Rates (lbs/ac/yr)[1]	EOS Load (lbs/yr)	Reduction Efficiencies[2]	BMP Credits for inclusion into the CBAP (lbs)	Comments
Ammo Supply Point	Bioretention Basin 6 with underdrain	01/2019	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
Ammo Supply Point	Bioretention Basin 7 with underdrain	01/2019	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
Ammo Supply Point	Bioretention Basin 8 with underdrain	01/2019	Operator- owned	Bioretention Practices Level 2	Bioretention/ Raingardens	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	90%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	90%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	90%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	90%	**0.0**	
Marine Corps Embassy	Bioretention 1 with underdrain	01/2019	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
Marine Corps Embassy	Bioretention 2 with underdrain	01/2019	Operator- owned	Bioretention Practices Level 1	Bioretention/ Raingardens	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	64%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	64%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	55%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	55%	**0.0**	
Marine Corps Embassy	Constructed Wetlands	01/2019	Operator- owned	Constructed Wetlands Level 1	Wet Ponds and Wetlands	Unregulated Urban Impervious	Nitrogen	0.00	16.86	0.0	25%	**0.0**	This BMP treats only new development or redevelopment. For this reason, it is not eligible for BMP credits.
						Unregulated Urban Pervious	Nitrogen	0.00	10.07	0.0	25%	**0.0**	
						Unregulated Urban Impervious	Phosphorus	0.00	1.62	0.0	50%	**0.0**	
						Unregulated Urban Pervious	Phosphorus	0.00	0.41	0.0	50%	**0.0**	
Old Camp Upshur WWTP	Land Use Change: Demolition of Building and Parking Lot and Conversion to Grass	12/2016	Operator- owned	N/A	Land Use Change: Impervious to Grass	Regulated Urban Impervious	Nitrogen	1.20	16.86	20.2	4.27	**5.1**	Reduction efficiencies are EOS reduction in lbs/year/ac from Table V.H.1 of 2021 Guidance Memo.
						Regulated Urban Impervious	Phosphorus	1.20	1.62	1.9	0.00	**0.0**	
							Total TN (lbs)					**286.22**	
							Total TP (lbs)					**27.48**	
							Total TSS (lbs)					**N/A**	

Notes:
1. Edge of Stream (EOS) Loading Rates (lbs/ac/yr) for Potomac River Basin from Phase II MS4 Permit. N/A - Not Applicable
2. Reduction efficiencies are depicted as percentages, unless otherwise noted in the Comment column.

APPENDIX B

Inventory of Historical BMPs (Installed 1985 – 30 June 2009)

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Marine Corps Base Quantico, Virginia
Inventory for Historical BMPs (installed 1985 - 30 June 2009)

Location (Bldg. Name or Number)	Stormwater Management Facility Type	Date Brought Online or Most Recent Date Implemented (MM/YYYY)	Owner- ship	Corresponding DEQ/CBP BMP Name	SubSource	Pollutant	Acres Served by BMP (Existing Sources dated 30 June 2009 only)	EOS Loading Rates (lbs/ac/yr)	EOS Load (lbs/yr)	Reduction Efficiencies	Unregulated Land Correction Factor	Total BMP Credits for DEQ Consideration (lbs)	BMP Credits for inclusion into the CBAP (lbs)	Comments
BMPs Installed 1985-June 30, 2009 Inside Regulated MS4														
Hospital Point: Bldg 2202 Parking	RP001 - Extended Dry Pond 1	01/2005	Operator-owned	Dry Extended Detention Ponds	Regulated Urban Impervious	Nitrogen	0.20	16.86	3.20	20%	N/A	**0.60**	0.00	
					Regulated Urban Pervious	Nitrogen	0.02	10.07	0.20	20%	N/A	**0.04**	0.00	
					Regulated Urban Impervious	Phosphorus	0.20	1.62	0.30	20%	N/A	**0.10**	0.00	
					Regulated Urban Pervious	Phosphorus	0.02	0.41	0.00	20%	N/A	**0.00**	0.00	
Hospital Point: Bldg 2202 Parking	RP002 - Extended Dry Pond 2	01/2005	Operator-owned	Dry Extended Detention Ponds	Regulated Urban	Nitrogen	0.20	16.86	3.70	20%	N/A	**0.70**	0.00	
					Regulated Urban Pervious	Nitrogen	0.03	10.07	0.30	20%	N/A	**0.10**	0.00	
					Regulated Urban Impervious	Phosphorus	0.20	1.62	0.40	20%	N/A	**0.10**	0.00	
					Regulated Urban Pervious	Phosphorus	0.03	0.41	0.00	20%	N/A	**0.00**	0.00	
Hospital Point: Bldg 2200 Parking Lot Annex	RP003 - Extended Dry Pond 1	01/2005	Operator-owned	Dry Extended Detention Ponds	Regulated Urban	Nitrogen	0.10	16.86	2.00	20%	N/A	**0.40**	0.00	
					Regulated Urban Pervious	Nitrogen	0.03	10.07	0.30	20%	N/A	**0.10**	0.00	
					Regulated Urban Impervious	Phosphorus	0.10	1.62	0.20	20%	N/A	**0.04**	0.00	
					Regulated Urban Pervious	Phosphorus	0.03	0.41	0.01	20%	N/A	**0.00**	0.00	
Hospital Point: Bldg 2200 Parking Lot Annex	RP004 - Extended Dry Pond 2	01/2005	Operator-owned	Dry Extended Detention Ponds	Regulated Urban	Nitrogen	0.20	16.86	3.70	20%	N/A	**0.70**	0.00	
					Regulated Urban Pervious	Nitrogen	0.10	10.07	0.80	20%	N/A	**0.20**	0.00	
					Regulated Urban Impervious	Phosphorus	0.20	1.62	0.40	20%	N/A	**0.10**	0.00	
					Regulated Urban Pervious	Phosphorus	0.10	0.41	0.03	20%	N/A	**0.01**	0.00	
Hospital Point: Bldg 2200 Parking Lot Annex	Two Filterra Tree boxes	01/2005	Operator-owned	Bioretention/ raingardens - A/B soils, underdrain	Regulated Urban	Nitrogen	0.50	16.86	8.80	70%	N/A	**6.10**	0.00	
					Regulated Urban Pervious	Nitrogen	0.00	10.07	0.00	70%	N/A	**0.00**	0.00	
					Regulated Urban Impervious	Phosphorus	0.50	1.62	0.80	75%	N/A	**0.60**	0.00	
					Regulated Urban Pervious	Phosphorus	0.00	0.41	0.00	75%	N/A	**0.00**	0.00	
Hospital Point: Across Sherwood Street From Training and Education Command (TECOM)	RP005 - Extended Dry Pond	01/2000	Operator-owned	Dry Extended Detention Ponds	Regulated Urban	Nitrogen	1.90	16.86	31.20	20%	N/A	**6.20**	0.00	
					Regulated Urban Pervious	Nitrogen	0.40	10.07	4.10	20%	N/A	**0.80**	0.00	
					Regulated Urban Impervious	Phosphorus	1.90	1.62	3.00	20%	N/A	**0.60**	0.00	
					Regulated Urban Pervious	Phosphorus	0.40	0.41	0.20	20%	N/A	**0.03**	0.00	
Hospital Point: Across Sherwood Street From Training and Education Command (TECOM)	RP006 - Dry Extended Detention Pond	06/2009	Operator-owned	Dry Extended Detention Ponds	Regulated Urban	Nitrogen	2.50	16.86	42.30	20%	N/A	**8.50**	0.00	
					Regulated Urban Pervious	Nitrogen	5.80	10.07	58.00	20%	N/A	**11.60**	0.00	
					Regulated Urban Impervious	Phosphorus	2.50	1.62	4.10	20%	N/A	**0.80**	0.00	
					Regulated Urban Pervious	Phosphorus	5.80	0.41	2.40	20%	N/A	**0.50**	0.00	
MCU:	TB001 -	01/2007	Operator-	Bioretention/	Regulated Urban	Nitrogen	0.30	16.86	5.70	70%	N/A	**4.00**	0.00	

Marine Corps Base Quantico, Virginia
Inventory for Historical BMPs (installed 1985 - 30 June 2009)

Location (Bldg. Name or Number)	Stormwater Management Facility Type	Date Brought Online or Most Recent Date Implemented (MM/YYYY)	Owner- ship	Corresponding DEQ/CBP BMP Name	SubSource	Pollutant	Acres Served by BMP (Existing Sources dated 30 June 2009 only)	EOS Loading Rates (lbs/ac/yr)	EOS Load (lbs/yr)	Reduction Efficiencies	Unregulated Land Correction Factor	Total BMP Credits for DEQ Consideration (lbs)	BMP Credits for inclusion into the CBAP (lbs)	Comments
Jordan Hall Parking	Filterra tree box		owned	raingardens - A/B soils, underdrain	Regulated Urban Pervious	Nitrogen	0.04	10.07	0.40	70%	N/A	**0.30**	0.00	
					Regulated Urban Impervious	Phosphorus	0.30	1.62	0.60	75%	N/A	**0.40**	0.00	
					Regulated Urban Pervious	Phosphorus	0.04	0.41	0.02	75%	N/A	**0.01**	0.00	
MCU: Jordan Hall Parking	TB002 - Filterra tree box	01/2007	Operator-owned	Bioretention/ raingardens - A/B soils, underdrain	Regulated Urban	Nitrogen	0.20	16.86	3.50	70%	N/A	**2.50**	0.00	
					Regulated Urban Pervious	Nitrogen	0.01	10.07	0.10	70%	N/A	**0.10**	0.00	
					Regulated Urban Impervious	Phosphorus	0.20	1.62	0.30	75%	N/A	**0.30**	0.00	
					Regulated Urban Pervious	Phosphorus	0.01	0.41	0.00	75%	N/A	**0.00**	0.00	
MCU: Jordan Hall Parking	TB003 - Filterra tree box	01/2007	Operator-owned	Bioretention/ raingardens - A/B soils, underdrain	Regulated Urban Impervious	Nitrogen	0.10	16.86	0.80	70%	N/A	**0.60**	0.00	
					Regulated Urban Impervious	Phosphorus	0.10	1.62	0.10	75%	N/A	**0.10**	0.00	
MCU: Jordan Hall Parking	TB004 - Filterra tree box	01/2007	Operator-owned	Bioretention/ raingardens - A/B soils, underdrain	Regulated Urban	Nitrogen	0.40	16.86	6.10	70%	N/A	**4.20**	0.00	
					Regulated Urban Pervious	Nitrogen	0.02	10.07	0.20	70%	N/A	**0.10**	0.00	
					Regulated Urban Impervious	Phosphorus	0.40	1.62	0.60	75%	N/A	**0.40**	0.00	
					Regulated Urban Pervious	Phosphorus	0.02	0.41	0.01	75%	N/A	**0.01**	0.00	
MCU: Jordan Hall Parking	TB005 - Filterra tree box	01/2007	Operator-owned	Bioretention/ raingardens - A/B soils, underdrain	Regulated Urban	Nitrogen	0.50	16.86	7.90	70%	N/A	**5.50**	0.00	
					Regulated Urban Pervious	Nitrogen	0.10	10.07	0.80	70%	N/A	**0.60**	0.00	
					Regulated Urban Impervious	Phosphorus	0.50	1.62	0.80	75%	N/A	**0.60**	0.00	
					Regulated Urban Pervious	Phosphorus	0.10	0.41	0.03	75%	N/A	**0.02**	0.00	
MCU: Bldg 2084 Parking	RP008 - Extended Dry Pond	01/1998	Operator-owned	Dry Extended Detention Ponds	N/A	N/A	N/A	N/A	N/A	N/A	N/A	**0.00**	0.00	The pond has returned to a forest-like condition and is no longer functional. No credit.
MCU Garage	RP009 - Wet Pond	01/2007	Operator-owned	Wet Ponds and Wetlands	Regulated Urban	Nitrogen	0.00	16.86	0.00	20%	N/A	**0.00**	0.00	No credit because the BMP no longer treats existing land uses (pre July 2009) following construction of MCU Garage
					Regulated Urban Pervious	Nitrogen	0.00	10.07	0.00	20%	N/A	**0.00**	0.00	
					Regulated Urban Impervious	Phosphorus	0.00	1.62	0.00	45%	N/A	**0.00**	0.00	
					Regulated Urban Pervious	Phosphorus	0.00	0.41	0.00	45%	N/A	**0.00**	0.00	
Gymnasium (Bldg 2073)	RP012 - Dry Pond	01/2007	Operator-owned	Dry Detention Ponds and Hydrodynamic Structures	Regulated Urban	Nitrogen	1.60	16.86	26.80	5%	N/A	**1.30**	0.00	
					Regulated Urban Pervious	Nitrogen	0.30	10.07	3.10	5%	N/A	**0.20**	0.00	
					Regulated Urban Impervious	Phosphorus	1.60	1.62	2.60	10%	N/A	**0.30**	0.00	
					Regulated Urban Pervious	Phosphorus	0.30	0.41	0.10	10%	N/A	**0.01**	0.00	
Auto Hobby Shop (Bldg 2074)	RP013 - Extended Dry Pond	01/2007	Operator-owned	Dry Extended Detention Ponds	Regulated Urban	Nitrogen	0.40	16.86	6.70	20%	N/A	**1.30**	0.00	
					Regulated Urban Pervious	Nitrogen	0.30	10.07	3.30	20%	N/A	**0.70**	0.00	

Marine Corps Base Quantico, Virginia
Inventory for Historical BMPs (installed 1985 - 30 June 2009)

Location (Bldg. Name or Number)	Stormwater Management Facility Type	Date Brought Online or Most Recent Date Implemented (MM/YYYY)	Owner- ship	Corresponding DEQ/CBP BMP Name	SubSource	Pollutant	Acres Served by BMP (Existing Sources dated 30 June 2009 only)	EOS Loading Rates (lbs/ac/yr)	EOS Load (lbs/yr)	Reduction Efficiencies	Unregulated Land Correction Factor	Total BMP Credits for DEQ Consideration (lbs)	BMP Credits for inclusion into the CBAP (lbs)	Comments
					Regulated Urban Impervious	Phosphorus	0.40	1.62	0.60	20%	N/A	**0.10**	0.00	
					Regulated Urban Pervious	Phosphorus	0.30	0.41	0.10	20%	N/A	**0.00**	0.00	
Naval Medical Clinic (Bldg 3259)	RP014 - Extended Dry Pond 1	01/2000	Operator-owned	Dry Extended Detention Ponds	Regulated Urban	Nitrogen	3.60	16.86	60.90	20%	N/A	**12.20**	0.00	
					Regulated Urban Pervious	Nitrogen	1.50	10.07	15.00	20%	N/A	**3.00**	0.00	
					Regulated Urban Impervious	Phosphorus	3.60	1.62	5.80	20%	N/A	**1.20**	0.00	
					Regulated Urban Pervious	Phosphorus	1.50	0.41	0.60	20%	N/A	**0.10**	0.00	
Naval Medical Clinic (Bldg 3259)	RP015 - Extended Dry Pond 2	01/2000	Operator-owned	Dry Extended Detention Ponds	Regulated Urban	Nitrogen	2.30	16.86	38.40	20%	N/A	**7.70**	0.00	
					Regulated Urban Pervious	Nitrogen	2.00	10.07	20.20	20%	N/A	**4.00**	0.00	
					Regulated Urban Impervious	Phosphorus	2.30	1.62	3.70	20%	N/A	**0.70**	0.00	
					Regulated Urban Pervious	Phosphorus	2.00	0.41	0.80	20%	N/A	**0.20**	0.00	
Chapel	Extended Dry Pond	01/2009	Operator-owned	Dry Extended Detention Ponds	Regulated Urban	Nitrogen	3.60	16.86	60.00	20%	N/A	**12.00**	0.00	
					Regulated Urban Pervious	Nitrogen	5.30	10.07	53.50	20%	N/A	**10.70**	0.00	
					Regulated Urban Impervious	Phosphorus	3.60	1.62	5.80	20%	N/A	**1.20**	0.00	
					Regulated Urban Pervious	Phosphorus	5.30	0.41	2.20	20%	N/A	**0.40**	0.00	
Chapel Parking Lot	Extended Dry Pond	01/2009	Operator-owned	Dry Extended Detention Ponds	Regulated Urban	Nitrogen	0.20	16.86	3.70	20%	N/A	**0.70**	0.00	
					Regulated Urban Pervious	Nitrogen	0.20	10.07	2.40	20%	N/A	**0.50**	0.00	
					Regulated Urban Impervious	Phosphorus	0.20	1.62	0.40	20%	N/A	**0.07**	0.00	
					Regulated Urban Pervious	Phosphorus	0.20	0.41	0.10	20%	N/A	**0.02**	0.00	
Crossroads Inn	RP016 - Extended Dry Pond	01/1997	Operator-owned	Dry Extended Detention Ponds	N/A	N/A	N/A	N/A	N/A	N/A	N/A	**0.00**	0.00	The pond has returned to a forest-like condition and is no longer functional. No credit.
Marsh Center (Bldg. 3280)	RP024 - Wet Pond	01/1998	Operator-owned	Wet Ponds and Wetlands	Regulated Urban	Nitrogen	7.90	16.86	133.90	20%	N/A	**26.80**	0.00	
					Regulated Urban Pervious	Nitrogen	8.40	10.07	85.00	20%	N/A	**17.00**	0.00	
					Regulated Urban Impervious	Phosphorus	7.90	1.62	12.90	45%	N/A	**5.80**	0.00	
					Regulated Urban Pervious	Phosphorus	8.40	0.41	3.50	45%	N/A	**1.60**	0.00	
Davis Center (Bldg 3300)	RP025 - Wet Pond	01/1996	Operator-owned	Wet Ponds and Wetlands	Regulated Urban	Nitrogen	4.40	16.86	73.80	20%	N/A	**14.80**	0.00	
					Regulated Urban Pervious	Nitrogen	2.50	10.07	25.50	20%	N/A	**5.10**	0.00	
					Regulated Urban Impervious	Phosphorus	4.40	1.62	7.10	45%	N/A	**3.20**	0.00	
					Regulated Urban Pervious	Phosphorus	2.50	0.41	1.00	45%	N/A	**0.50**	0.00	
PPV Fuller Road at Courtney Drive	RP026 - Wet Pond 1	01/2005	Operator-owned	Wet Ponds and Wetlands	Regulated Urban	Nitrogen	10.90	16.86	183.60	20%	N/A	**36.70**	0.00	
					Regulated Urban Pervious	Nitrogen	19.30	10.07	193.80	20%	N/A	**38.80**	0.00	

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					Regulated Urban Impervious	Phosphorus	10.90	1.62	17.60	45%	N/A	**7.90**	0.00	
					Regulated Urban Pervious	Phosphorus	19.30	0.41	7.90	45%	N/A	**3.60**	0.00	
PPV Fuller Rd at Courtney Drive	RP027 - Wet Pond 2	01/2004	Operator-owned	Wet Ponds and Wetlands	Regulated Urban	Nitrogen	6.90	16.86	115.80	20%	N/A	**23.20**	0.00	
					Regulated Urban Pervious	Nitrogen	15.90	10.07	160.10	20%	N/A	**32.00**	0.00	
					Regulated Urban Impervious	Phosphorus	6.90	1.62	11.10	45%	N/A	**5.00**	0.00	
					Regulated Urban Pervious	Phosphorus	15.90	0.41	6.50	45%	N/A	**2.90**	0.00	
Marine Federal Credit Union	RP028 - Wet Pond	01/2000	Operator-owned	Wet Ponds and Wetlands	Regulated Urban	Nitrogen	1.10	16.86	18.00	20%	N/A	**3.60**	0.00	
					Regulated Urban Pervious	Nitrogen	0.40	10.07	3.60	20%	N/A	**0.70**	0.00	
					Regulated Urban Impervious	Phosphorus	1.10	1.62	1.70	45%	N/A	**0.80**	0.00	
					Regulated Urban Pervious	Phosphorus	0.40	0.41	0.10	45%	N/A	**0.10**	0.00	
PPV - Purvis Road at Berkeley Street	RP029 - Extended Dry Pond	01/2007	Operator-owned	Dry Extended Detention Ponds	Regulated Urban	Nitrogen	2.20	16.86	37.10	20%	N/A	**7.40**	0.00	
					Regulated Urban Pervious	Nitrogen	3.50	10.07	34.80	20%	N/A	**7.00**	0.00	
					Regulated Urban Impervious	Phosphorus	2.20	1.62	3.60	20%	N/A	**0.70**	0.00	
					Regulated Urban Pervious	Phosphorus	3.50	0.41	1.40	20%	N/A	**0.30**	0.00	
PPV - Adams Street	RP030 - Wet Pond	01/2007	Operator-owned	Wet Ponds and Wetlands	Regulated Urban	Nitrogen	2.60	16.86	43.50	20%	N/A	**8.70**	0.00	
					Regulated Urban Pervious	Nitrogen	4.80	10.07	48.30	20%	N/A	**9.70**	0.00	
					Regulated Urban Impervious	Phosphorus	2.60	1.62	4.20	45%	N/A	**1.90**	0.00	
					Regulated Urban Pervious	Phosphorus	4.80	0.41	2.00	45%	N/A	**0.90**	0.00	
PPV - Purvis Road at Cukela Street	RP031 - Dry Pond	01/2007	Operator-owned	Dry Detention Ponds and Hydrodynamic Structures	Regulated Urban	Nitrogen	4.40	16.86	73.70	5%	N/A	**3.70**	0.00	
					Regulated Urban Pervious	Nitrogen	7.60	10.07	76.50	5%	N/A	**3.80**	0.00	
					Regulated Urban Impervious	Phosphorus	4.40	1.62	7.10	10%	N/A	**0.70**	0.00	
					Regulated Urban Pervious	Phosphorus	7.60	0.41	3.10	10%	N/A	**0.30**	0.00	
PPV Poynter Street	RP032 - Dry Pond	01/2007	Operator-owned	Dry Detention Ponds and Hydrodynamic Structures	Regulated Urban	Nitrogen	7.50	16.86	126.30	5%	N/A	**6.30**	0.00	
					Regulated Urban Pervious	Nitrogen	10.10	10.07	101.70	5%	N/A	**5.10**	0.00	
					Regulated Urban Impervious	Phosphorus	7.50	1.62	12.10	10%	N/A	**1.20**	0.00	
					Regulated Urban Pervious	Phosphorus	10.10	0.41	4.10	10%	N/A	**0.40**	0.00	
PPV - Purvis Road at Dulaney Street	SD004 - Vegetated swale with check dam	01/2007	Operator-owned	Vegetated Open Channel –Urban – C/D soils, no underdrain	Regulated Urban	Nitrogen	0.10	16.86	1.20	10%	N/A	**0.10**	0.00	
					Regulated Urban Pervious	Nitrogen	0.20	10.07	1.80	10%	N/A	**0.20**	0.00	
					Regulated Urban Impervious	Phosphorus	0.10	1.62	0.10	10%	N/A	**0.01**	0.00	

Marine Corps Base Quantico, Virginia
Inventory for Historical BMPs (installed 1985 - 30 June 2009)

Location (Bldg. Name or Number)	Stormwater Management Facility Type	Date Brought Online or Most Recent Date Implemented (MM/YYYY)	Owner- ship	Corresponding DEQ/CBP BMP Name	SubSource	Pollutant	Acres Served by BMP (Existing Sources dated 30 June 2009 only)	EOS Loading Rates (lbs/ac/yr)	EOS Load (lbs/yr)	Reduction Efficiencies	Unregulated Land Correction Factor	Total BMP Credits for DEQ Consideration (lbs)	BMP Credits for inclusion into the CBAP (lbs)	Comments
					Regulated Urban Pervious	Phosphorus	0.20	0.41	0.10	10%	N/A	**0.01**	0.00	
Marathon Center (Bldg 3399)	RP034 - Extended Dry Pond	01/2005	Operator-owned	Dry Extended Detention Ponds	Regulated Urban	Nitrogen	0.50	16.86	7.90	20%	N/A	**1.60**	0.00	
					Regulated Urban Pervious	Nitrogen	0.10	10.07	1.30	20%	N/A	**0.30**	0.00	
					Regulated Urban Impervious	Phosphorus	0.50	1.62	0.80	20%	N/A	**0.20**	0.00	
					Regulated Urban Pervious	Phosphorus	0.10	0.41	0.10	20%	N/A	**0.01**	0.00	
BMPs installed 1985-June 30, 2009 Outside Regulated MS4														
Aircraft Fire Rescue (Bldg 5172)	Extended Dry Pond	01/2004	Operator-owned	Dry Extended Detention Ponds	Unregulated Urban	Nitrogen	1.50	16.86	26.00	20%	2.30	**2.90**	0.00	
					Unregulated Urban Pervious	Nitrogen	0.70	10.07	7.00	20%	0.40	**1.00**	0.00	
					Unregulated Urban Impervious	Phosphorus	1.50	1.62	2.50	20%	0.40	**0.10**	0.00	
					Unregulated Urban Pervious	Phosphorus	0.70	0.41	0.30	20%	0.02	**0.04**	0.00	
Bldg 3230	RP017 - Wet Pond	01/2005	Operator-owned	Wet Ponds and Wetlands	Unregulated Urban	Nitrogen	1.10	16.86	19.20	20%	1.70	**2.10**	0.00	
					Unregulated Urban Pervious	Nitrogen	1.70	10.07	17.10	20%	1.00	**2.40**	0.00	
					Unregulated Urban Impervious	Phosphorus	1.10	1.62	1.80	45%	0.30	**0.50**	0.00	
					Unregulated Urban Pervious	Phosphorus	1.70	0.41	0.70	45%	0.10	**0.30**	0.00	
OCS: Taylor Hall (Bldg 3065)	RP018 - Wet Pond	01/2006	Operator-owned	Wet Ponds and Wetlands	Unregulated Urban	Nitrogen	4.10	16.86	68.80	20%	6.20	**7.60**	0.00	
					Unregulated Urban Pervious	Nitrogen	3.60	10.07	35.80	20%	2.20	**5.00**	0.00	
					Unregulated Urban Impervious	Phosphorus	4.10	1.62	6.60	45%	1.10	**1.90**	0.00	
					Unregulated Urban Pervious	Phosphorus	3.60	0.41	1.50	45%	0.10	**0.60**	0.00	
OCS: Taylor Hall (Bldg 3065)	RP019 - Extended Dry Pond	01/2005	Operator-owned	Dry Extended Detention Ponds	Unregulated Urban	Nitrogen	0.20	16.86	3.70	20%	0.30	**0.40**	0.00	
					Unregulated Urban Pervious	Nitrogen	0.10	10.07	1.30	20%	0.10	**0.20**	0.00	
					Unregulated Urban Impervious	Phosphorus	0.20	1.62	0.40	20%	0.10	**0.01**	0.00	
					Unregulated Urban Pervious	Phosphorus	0.10	0.41	0.10	20%	0.00	**0.01**	0.00	
OCS: Taylor Hall (Bldg 3065)	RP020 - Extended Dry Pond	01/2005	Operator-owned	Dry Extended Detention Ponds	Unregulated Urban	Nitrogen	0.40	16.86	6.70	20%	0.60	**0.70**	0.00	
					Unregulated Urban Pervious	Nitrogen	0.10	10.07	1.20	20%	0.10	**0.20**	0.00	
					Unregulated Urban Impervious	Phosphorus	0.40	1.62	0.60	20%	0.10	**0.03**	0.00	
					Unregulated Urban Pervious	Phosphorus	0.10	0.41	0.05	20%	0.00	**0.01**	0.00	
OCS: Taylor Hall	RP021 -	01/2005	Operator-	Dry Extended	Unregulated Urban	Nitrogen	0.30	16.86	5.20	20%	0.50	**0.60**	0.00	

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(Bldg 3065)	Extended Dry Pond		owned	Detention Ponds	Unregulated Urban Pervious	Nitrogen	0.30	10.07	3.20	20%	0.20	**0.50**	0.00	
					Unregulated Urban Impervious	Phosphorus	0.30	1.62	0.50	20%	0.10	**0.02**	0.00	
					Unregulated Urban Pervious	Phosphorus	0.30	0.41	0.10	20%	0.01	**0.02**	0.00	
OCS: Taylor Hall (Bldg 3065)	RP022- Extended Dry Pond	01/2005	Operator-owned	Dry Extended Detention Ponds	Unregulated Urban	Nitrogen	0.20	16.86	3.70	20%	0.30	**0.40**	0.00	
					Unregulated Urban Pervious	Nitrogen	0.10	10.07	1.10	20%	0.10	**0.20**	0.00	
					Unregulated Urban Impervious	Phosphorus	0.20	1.62	0.40	20%	0.10	**0.01**	0.00	
					Unregulated Urban Pervious	Phosphorus	0.10	0.41	0.05	20%	0.00	**0.01**	0.00	
OCS 202K	RP023 - Extended Dry Pond	01/2009	Operator-owned	Dry Extended Detention Ponds	Unregulated Urban	Nitrogen	2.20	16.86	37.30	20%	3.40	**4.10**	0.00	
					Unregulated Urban Pervious	Nitrogen	0.70	10.07	6.90	20%	0.40	**1.00**	0.00	
					Unregulated Urban Impervious	Phosphorus	2.20	1.62	3.60	20%	0.60	**0.10**	0.00	
					Unregulated Urban Pervious	Phosphorus	0.70	0.41	0.30	20%	0.02	**0.04**	0.00	
National Museum of the Marine Corps	RP035 - Bioretention with underdrain	06/2009	Operator-owned	Bioretention/ raingardens - C/D soils, underdrain	Unregulated Urban	Nitrogen	1.60	16.86	27.30	25%	2.50	**4.40**	0.00	
					Unregulated Urban Pervious	Nitrogen	0.90	10.07	8.70	25%	0.50	**1.60**	0.00	
					Unregulated Urban Impervious	Phosphorus	1.60	1.62	2.60	45%	0.40	**0.80**	0.00	
					Unregulated Urban Pervious	Phosphorus	0.90	0.41	0.40	45%	0.03	**0.10**	0.00	
National Museum of the Marine Corps	RP036 - Bioretention with underdrain	06/2009	Operator-owned	Bioretention/ raingardens - C/D soils, underdrain	Unregulated Urban	Nitrogen	1.60	16.86	27.70	25%	2.50	**4.40**	0.00	
					Unregulated Urban Pervious	Nitrogen	0.90	10.07	8.70	25%	0.50	**1.60**	0.00	
					Unregulated Urban Impervious	Phosphorus	1.60	1.62	2.70	45%	0.40	**0.80**	0.00	
					Unregulated Urban Pervious	Phosphorus	0.90	0.41	0.40	45%	0.03	**0.10**	0.00	
National Museum of the Marine Corps	Extended Dry Pond	06/2009	Operator-owned	Dry Extended Detention Ponds	Unregulated Urban	Nitrogen	7.50	16.86	125.80	20%	11.30	**13.80**	0.00	
					Unregulated Urban Pervious	Nitrogen	7.30	10.07	73.20	20%	4.40	**10.20**	0.00	
					Unregulated Urban Impervious	Phosphorus	7.50	1.62	12.10	20%	1.90	**0.50**	0.00	
					Unregulated Urban Pervious	Phosphorus	7.30	0.41	3.00	20%	0.20	**0.40**	0.00	
National Museum of the Marine Corps	Grass Swale	06/2009	Operator-owned	Vegetated Open Channel –Urban – C/D soils, no	Unregulated Urban	Nitrogen	0.40	16.86	6.40	10%	0.60	**0.10**	0.00	Total Load Reductions for DEQ Consideration were negative for this calculation. Therefore, zero load
					Unregulated Urban Pervious	Nitrogen	0.40	10.07	3.50	10%	0.20	**0.10**	0.00	

Marine Corps Base Quantico, Virginia
Inventory for Historical BMPs (installed 1985 - 30 June 2009)

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				underdrain	Unregulated Urban Impervious	Phosphorus	0.40	1.62	0.60	10%	0.10	**0.00**	0.00	reductions should be considered.
					Unregulated Urban Pervious	Phosphorus	0.40	0.41	0.10	10%	0.01	**0.00**	0.00	
National Museum of the Marine Corps	Wet Pond	06/2009	Operator-owned	Wet Ponds and Wetlands	Unregulated Urban	Nitrogen	1.40	16.86	23.10	20%	2.10	**2.50**	0.00	
					Forest	Nitrogen	13.90	5.29	73.50	20%	0.00	**14.70**	0.00	
					Unregulated Urban Impervious	Phosphorus	1.40	1.62	2.20	45%	0.40	**0.60**	0.00	
					Forest	Phosphorus	13.90	0.13	1.80	45%	0.00	**0.80**	0.00	
MCIOC/ MCNOSC (Bldg 27410)	RP040 - Extended Dry Pond 2	01/2007	Operator-owned	Dry Extended Detention Ponds	Unregulated Urban	Nitrogen	1.50	16.86	25.50	20%	2.30	**2.80**	0.00	
					Unregulated Urban Pervious	Nitrogen	0.90	10.07	8.60	20%	0.50	**1.20**	0.00	
					Unregulated Urban Impervious	Phosphorus	1.50	1.62	2.40	20%	0.40	**0.10**	0.00	
					Unregulated Urban Pervious	Phosphorus	0.90	0.41	0.30	20%	0.03	**0.04**	0.00	
MCIOC/ MCNOSC (near Fuel Farm)	RP041 - Grass Swale 3	01/2009	Operator-owned	Vegetated Open Channel –Urban – C/D soils, no underdrain	Unregulated Urban	Nitrogen	1.80	16.86	29.50	10%	2.70	**0.30**	0.00	Total Load Reductions for DEQ Consideration were negative for this calculation. Therefore, zero load reductions should be considered.
					Unregulated Urban Pervious	Nitrogen	1.20	10.07	12.10	10%	0.70	**0.50**	0.00	
					Unregulated Urban Impervious	Phosphorus	1.80	1.62	2.80	10%	0.50	**0.00**	0.00	
					Unregulated Urban Pervious	Phosphorus	1.20	0.41	0.50	10%	0.04	**0.00**	0.00	
Fuel Farm	Oil/Water Separator connected to storm sewer system	01/1997	Operator-owned	Dry Detention Ponds and Hydrodynamic Structures	Unregulated Urban	Nitrogen	0.90	16.86	15.70	5%	1.40	**0.00**	0.00	Total Load Reductions for DEQ Consideration were negative for this calculation. Therefore, zero load reductions should be considered.
					Unregulated Urban Pervious	Nitrogen	0.90	10.07	8.80	5%	0.50	**0.00**	0.00	
					Unregulated Urban Impervious	Phosphorus	0.90	1.62	1.50	10%	0.20	**0.00**	0.00	
					Unregulated Urban Pervious	Phosphorus	0.90	0.41	0.40	10%	0.03	**0.00**	0.00	
TBS (Bldg 24018)	RP042 - Extended Dry Pond	01/2007	Operator-owned	Dry Extended Detention Ponds	Unregulated Urban	Nitrogen	1.10	16.86	18.00	20%	1.60	**2.00**	0.00	
					Unregulated Urban Pervious	Nitrogen	1.10	10.07	11.10	20%	0.70	**1.60**	0.00	
					Unregulated Urban Impervious	Phosphorus	1.10	1.62	1.70	20%	0.30	**0.10**	0.00	
					Unregulated Urban Pervious	Phosphorus	1.10	0.41	0.50	20%	0.03	**0.06**	0.00	
TBS (Bldg 24192)	RP043 - Dry Pond	01/2009	Operator-owned	Dry Detention Ponds and Hydrodynamic Structures	Unregulated Urban	Nitrogen	1.80	16.86	29.80	5%	2.70	**0.00**	0.00	Total Load Reductions for DEQ Consideration were negative for this calculation. Therefore, zero load reductions should be considered.
					Unregulated Urban Pervious	Nitrogen	0.80	10.07	8.10	5%	0.50	**0.00**	0.00	
					Unregulated Urban Impervious	Phosphorus	1.80	1.62	2.90	10%	0.50	**0.00**	0.00	
					Unregulated Urban Pervious	Phosphorus	0.80	0.41	0.30	10%	0.02	**0.00**	0.00	
TBS	RP044 -	Jan-09	Operator-	Dry Extended	Unregulated Urban	Nitrogen	1.00	16.86	16.90	20%	1.50	**1.90**	0.00	

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(Bldg 24192)	Extended Dry Pond		owned	Detention Ponds	Unregulated Urban Pervious	Nitrogen	1.10	10.07	11.50	20%	0.70	**1.60**	0.00	
					Unregulated Urban Impervious	Phosphorus	1.00	1.62	1.60	20%	0.30	**0.10**	0.00	
					Unregulated Urban Pervious	Phosphorus	1.10	0.41	0.50	20%	0.03	**0.10**	0.00	
WTBn Fleet Armory (Bldg 27251)	RP046 - Extended Dry Pond 1	01/2006	Operator-owned	Dry Extended Detention Ponds	Unregulated Urban	Nitrogen	0.90	16.86	14.80	20%	1.30	**1.60**	0.00	
					Unregulated Urban Pervious	Nitrogen	1.30	10.07	13.20	20%	0.80	**1.80**	0.00	
					Unregulated Urban Impervious	Phosphorus	0.90	1.62	1.40	20%	0.20	**0.10**	0.00	
					Unregulated Urban Pervious	Phosphorus	1.30	0.41	0.50	20%	0.04	**0.10**	0.00	
WTBn Fleet Armory (Bldg 27250) Parking	RP047 - Extended Dry Pond 2	01/2006	Operator-owned	Dry Extended Detention Ponds	Unregulated Urban	Nitrogen	1.10	16.86	17.70	20%	1.60	**1.90**	0.00	
					Unregulated Urban Pervious	Nitrogen	1.00	10.07	9.70	20%	0.60	**1.40**	0.00	
					Unregulated Urban Impervious	Phosphorus	1.10	1.62	1.70	20%	0.30	**0.10**	0.00	
					Unregulated Urban Pervious	Phosphorus	1.00	0.41	0.40	20%	0.03	**0.10**	0.00	
WTBn Fleet Armory	RP048 - Extended Dry Pond 3	01/2007	Operator-owned	Dry Extended Detention Ponds	Unregulated Urban	Nitrogen	0.70	16.86	11.80	20%	1.10	**1.30**	0.00	
					Unregulated Urban Pervious	Nitrogen	0.40	10.07	4.30	20%	0.30	**0.60**	0.00	
					Unregulated Urban Impervious	Phosphorus	0.70	1.62	1.10	20%	0.20	**0.05**	0.00	
					Unregulated Urban Pervious	Phosphorus	0.40	0.41	0.20	20%	0.00	**0.00**	0.00	
Camp Upshur	RP051 - Extended Dry Pond	01/2007	Operator-owned	Dry Extended Detention Ponds	Unregulated Urban	Nitrogen	2.50	16.86	42.80	20%	3.90	**4.70**	0.00	
					Unregulated Urban Pervious	Nitrogen	1.90	10.07	18.60	20%	1.10	**2.60**	0.00	
					Unregulated Urban Impervious	Phosphorus	2.50	1.62	4.10	20%	0.70	**0.20**	0.00	
					Unregulated Urban Pervious	Phosphorus	1.90	0.41	0.80	20%	0.10	**0.10**	0.00	
Camp Upshur	Grass Swale	01/2007	Operator-owned	Vegetated Open Channel –Urban – C/D soils, no underdrain	Unregulated Urban	Nitrogen	0.80	16.86	13.80	10%	1.20	**0.10**	0.00	Total Load Reductions for DEQ Consideration were negative for this calculation. Therefore, zero load reductions should be considered.
					Unregulated Urban	Nitrogen	0.30	10.07	3.20	10%	0.20	**0.10**	0.00	
					Unregulated Urban	Phosphorus	0.80	1.62	1.30	10%	0.20	**0.00**	0.00	
					Unregulated Urban	Phosphorus	0.30	0.41	0.10	10%	0.01	**0.00**	0.00	
Russell Road Landfill	Dry pond	01/1996	Operator-owned	Dry Detention Ponds and Hydrodynamic Structures	Unregulated Urban	Nitrogen	0.80	16.86	13.80	5%	1.20	**0.00**	0.00	Total Load Reductions for DEQ Consideration were negative for this calculation. Therefore, zero load reductions should be considered.
					Unregulated Urban	Nitrogen	29.40	10.07	295.90	5%	17.80	**0.00**	0.00	
					Unregulated Urban	Phosphorus	0.80	1.62	1.30	10%	0.20	**0.00**	0.00	
					Unregulated Urban	Phosphorus	29.40	0.41	12.00	10%	0.90	**0.20**	0.00	
Russell Road Landfill	Grass Swale 1	01/1996	Operator-owned	Vegetated Open Channel –Urban – A/B soils, no	Unregulated Urban	Nitrogen	0.80	16.86	13.80	45%	1.20	**5.00**	0.00	
					Unregulated Urban Pervious	Nitrogen	29.40	10.07	295.90	45%	17.80	**115.40**	0.00	

Marine Corps Base Quantico, Virginia
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				underdrain	Unregulated Urban Impervious	Phosphorus	0.80	1.62	1.30	45%	0.20	**0.40**	0.00	
					Unregulated Urban Pervious	Phosphorus	29.40	0.41	12.00	45%	0.90	**4.50**	0.00	
Middle Branch Pond - Westside	Wet Pond	01/1998	Operator-owned	Wet Ponds and Wetlands	Unregulated Urban Impervious	Nitrogen	0.40	16.86	6.20	20%	0.60	**0.70**	0.00	
					Unregulated Urban Impervious	Phosphorus	0.40	1.62	0.60	45%	0.10	**0.20**	0.00	
South Branch Pond - Westside	Wet Pond	01/1998	Operator-owned	Wet Ponds and Wetlands	Unregulated Urban Impervious	Nitrogen	1.60	16.86	27.00	20%	2.40	**3.00**	0.00	
					Unregulated Urban Pervious	Nitrogen	3.50	10.07	35.20	20%	2.10	**4.90**	0.00	
					Forest	Nitrogen	123.50	5.29	653.30	20%	0.00	**130.70**	0.00	
					Unregulated Urban Impervious	Phosphorus	1.60	1.62	2.60	45%	0.40	**0.80**	0.00	
					Unregulated Urban Pervious	Phosphorus	3.50	0.41	1.40	45%	0.10	**0.50**	0.00	
					Forest	Phosphorus	123.50	0.13	16.10	45%	0.00	**7.20**	0.00	

Notes:
Edge of Stream (EOS) Loading Rates (lbs/ac/yr) for Potomac River Basin from Phase II MS4 Permit.
N/A - Not Applicable

Total TN (lbs)	**0.00**
Total TP (lbs):	**0.00**
Total TSS (lbs)	**N/A**

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APPENDIX C

Public Comments on Draft Chesapeake Bay TMDL Action Plan

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