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FINAL MS4 PROGRAM PLAN

STORMWATER MS4 PROGRAM SUPPORT

MARINE CORPS BASE QUANTICO
VIRGINIA

Prepared for

NAVFAC Washington
Naval Facilities Engineering Command Atlantic
1314 Harwood St, SE, Bldg 212
Washington Navy Yard, DC 20374

January 2019

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FINAL
MS4 Program Plan

For 2018 –2023
[Revised January 2019 for New Permit Cycle]

PREPARED FOR:

Marine Corps Base Quantico (MCBQ)
Quantico, VA

Naval Facilities Engineering Command Atlantic
1314 Harwood St, SE, Bldg 212
Washington Navy Yard, DC 20374

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LIST OF ACRONYMS AND ABBREVIATIONS

AE	Architect-Engineering
AST	Aboveground Storage Tank
BMP	Best Management Practice
BX	Base Exchange
CBPA	Chesapeake Bay Preservation Act
CFR	Code of Federal Regulations
CNMP	Certified Nutrient Management Planner
CSCE	Comprehensive Site Compliance Evaluation
CSWMP	Comprehensive Storm Water Management Action Plan
CVP	Conservation Volunteer Program
DCR	Virginia Department of Conservation and Recreation
DoD	Department of Defense (United States)
DOJ	Department of Justice (United States)
DON	Department of Navy
E&SC	Erosion and Sediment Control
EC	Environmental Coordinator
ECPSOP	Environmental Compliance & Protection Standard Operating Procedure
EISA	Energy Independence and Security Act
EML	Electronic Metrology Laboratory
EPA	Environmental Protection Agency (United States)
FEAD	Facilities Engineering Acquisitions Division
FMS	Facilities Maintenance Section
FY	Fiscal Year
GIS	Geographic Information Systems
HMMP	Hazardous Material Management Program
HMX-1	Marine Helicopter One Squadron
HUC	Hydrologic Unit Code
I-95	Interstate 95
IDA	Intensely Developed Acres
IDDE	Illicit Discharge Detection and Elimination
IPMC	Integrated Pest Management Coordinator
IPMP	Integrated Pest Management Plan
LID	Low Impact Development
MCAF	Marine Corps Air Facility
MCBO	Marine Corps Base Order
MCBQ	Marine Corps Base Quantico
MCCDC	Marine Corps Combat Development Command
MCCS	Marine Corps Community Service
MCIOC	Marine Corps Information Operations Center
MCM	Minimum Control Measure
MCNOSC	Marine Corps Network Operations and Security Center
MCO	Marine Corps Order
MCSC	Marine Corps Systems Command

LIST OF ACRONYMS AND ABBREVIATIONS (continued)

MFCU	Marine Federal Credit Union
MS4	Municipal Separate Storm Sewer System
NEPA	National Environmental Policy Act
NMP	Nutrient Management Plan
NOT	Notice of Termination
NOV	Notice of Violation
NREAB	Natural Resources and Environmental Affairs Branch
PEOP	Public Education Outreach Plan
POL	Petroleum, Oil, Lubricant
PSTMP	*Petroleum Storage Tank Management Plan*
PWB	Public Works Branch
RLD	Responsible Land Disturber
RMA	Resource Management Areas
ROICC	Resident Officer in Charge of Construction
RPA	Resource Protection Areas
Small MS4 Permit	General Permit for Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems
SOP	Standard Operating Procedure
SPCC	Spill Prevention, Control, and Countermeasure
SPR	Spill Prevention and Response
SWMP	Stormwater Management Plan
SWPP	Stormwater Pollution Prevention
SWPPP	Stormwater Pollution Prevention Plan
SWPPT	Stormwater Pollution Prevention Team
TBS	The Basic School
TMDL	Total Maximum Daily Load
UFC	Unified Facilities Criteria
UST	Underground Storage Tank
VAC	Virginia Administrative Code
VDEQ	Virginia Department of Environmental Quality
VESCH	Virginia Erosion and Sediment Control Handbook
VESCL	Virginia Erosion and Sediment Control Law
VESCP	Virginia Erosion and Sediment Control Program
VPDES	Virginia Pollution Discharge Elimination System
VSMP	Virginia Stormwater Management Program
WPM	Water Program Manager
WTB	Weapons Training Battalion

FACILITY INFORMATION

Name of Facility _____

Street Address _____

City _____ **State** _____ **Zip Code** _____

County _____

SIGNATURE AND CERTIFICATION

Certification, as required by Virginia Administrative Code (9VAC25-890-40):
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Printed Name	Title
Signature	Date

This report and all reports required by state permits requires signature by either (9VAC25-890-40):

- For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official, which includes the chief executive officer of the agency or a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.
- A duly authorized representative. A person is a duly authorized representative only if:
  - The authorization is made in writing by a principal executive officer or ranking elected official;
  - The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the operator. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.); and
  - The written authorization is submitted to the department.

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1.0 INTRODUCTION

The Virginia Administrative Code (VAC) under 9VAC25-890[1] provides the General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4s) (Small MS4 Permit). Small MS4 permittees in urbanized areas as defined by the Decennial Census, such as Marine Corps Base Quantico (MCBQ), are subject to the requirements of the Small MS4 Permit. Due to MCBQ's location within an urbanized area, MCBQ is regulated by the Small MS4 Permit under Permit Number VAR040069.[2,3]

According to Section I B of the Small MS4 Permit, "the permittee shall develop, implement, and enforce a MS4 program designed to reduce the discharge of pollutants from the small MS4 to the maximum extent practicable, to protect water quality, to ensure compliance by the permittee with water quality standards, and to satisfy the appropriate water quality requirements of the State Water Control Law and its attendant regulations. The permittee shall utilize the legal authority provided by the laws and regulations of the Commonwealth of Virginia to control discharges to and from the MS4. This legal authority may be a combination of statute, ordinance, permit, policy, specific contract language, order or interjurisdictional agreements. The MS4 program shall include the minimum control measures described in the [Small MS4 Permit]."

The MS4 program plan addresses all six (6) minimum control measures (MCMs) and the Special Conditions regarding approved Total Maximum Daily Loads (TMDLs) outlined in Sections I and II of the Small MS4 Permit. In addition to detailing the best management practices (BMPs) for each MCM, MCBQ has incorporated an additional Administration/Special Conditions section with associated BMPs crafted to facilitate program updates and TMDL implementation.

To arrive at appropriate and cost-effective BMPs, MCBQ reviewed existing stormwater management operations, procedures, and programming as they relate to the compliance requirements of the MS4 General Permit. For each selected BMP, MCQB has identified measurable goals, responsible parties, timelines, and evaluation methods. This MS4 program plan has eight (8) sections, covering each of the six (6) MCMs, Administration/Special Conditions related to TMDLs, and annual reporting requirements set forth in the Small MS4 Permit.

An older version of MCBQ's MS4 program plan is included in MCBQ's 2011 Comprehensive Storm Water Management Action Plan (CSWMP), and an update was developed in 2016. Updates to the MS4 program plan in 2018 (this update) serve as a

[1] 9VAC25-890, *General Virginia Pollutant Discharge Elimination System (VPDES) Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems*. Effective November 1, 2018.
[2] General Permit No. VAR040069, *General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems; Authorization to Discharge under the Virginia Stormwater Management Program and the Virginia Stormwater Management Act*. Effective Date: November 1, 2018. Expiration Date: October 31, 2023.
[3] General Permit No. VAR040069 was reissued on November 1, 2018 and refers to the Small MS4 Permit under 9VAC25-890.

revised version of the MS4 program plan, which is to be updated annually, as needed, as required by the Small MS4 Permit.

This document provides a MS4 program plan update for MCBQ. More specifically, this document provides an update to the sections associated with the six (6) MCMs and TMDL Special Conditons in MCBQ's 2016 *MS4 Program Plan*, and adds a section summarizing annual reporting requirements. The new and updated content provides new information, changes, latest inspection dates, and additions to the stormwater program.

2.0 FACILITY DESCRIPTION

This section provides a general description of MCBQ. MCBQ is located in northern Virginia, roughly 35 miles south of the District of Columbia. MCBQ encompasses approximately 59,000 acres, extending from the west bank of the Potomac River through portions of Fauquier, Prince William, and Stafford Counties. All stormwater runoff from MCBQ eventually discharges into the Potomac River, which drains into the Chesapeake Bay.

The installation consists of two (2) major areas divided by Interstate 95 (I-95): Mainside and Westside. Mainside, located east of I-95, provides numerous administrative services and support functions and includes the majority of the developed areas at MCBQ. Mainside is the home of the Marine Corps Combat Development Command (MCCDC) and several tenant commands, including the Marine Corps University, Marine Corps Systems Command (MCSC), Marine Helicopter One Squadron (HMX-1), and the Marine Corps Air Facility (MCAF).

Westside, west of I-95, is used primarily for military training and includes four (4) concentrated areas of development: the United States Department of Justice (DOJ) campus, consisting of the Federal Bureau of Investigation Academy and Drug Enforcement Agency functions; Camp Barrett (also known as The Basic School or TBS); Weapons Training Battalion (WTB); and Camp Upshur. The remainder of Westside has been divided into training areas. Activities within training areas have specific functions, which are centrally regulated by the Range Management Branch and/or WTB.

Although situated within MCBQ property, the DOJ campus holds its own coverage under the Small MS4 Permit (Permit Number VAR040105) and is therefore considered a separate MS4. As a result, all MS4 Program and compliance activities at the DOJ campus are neither managed by nor the responsibility of MCBQ. Therefore, this MS4 program plan update does not apply to the DOJ campus.

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3.0 MINIMUM CONTROL MEASURES

This section introduces the six (6) MCMs required by the Small MS4 Permit. This section also describes how the MCM descriptions and evaluations contained within this MS4 program plan update were developed. Lastly, this section provides an overview of the detailed best management practice (BMP) descriptions implemented for each MCM provided in Sections 4-9 of this document.

The six (6) MCMs required by the Small MS4 Permit, Section I E, are as follows:

- MCM 1: Public Education and Outreach
- MCM 2: Public Involvement and Participation
- MCM 3: Illicit Discharge Detection and Elimination
- MCM 4: Construction Site Stormwater Runoff Control
- MCM 5: Post-Construction Stormwater Management for New Development and Development on Prior Developed Lands
- MCM 6: Pollution Prevention and Good Housekeeping for Facilities Owned or Operated by the Permittee

To develop this MS4 program plan update, the MCM requirements in MCBQ's Small MS4 Permit (Permit Number VAR040069) were reviewed. In addition, descriptions of BMPs implemented at MCBQ in MCBQ's 2011 MS4 program plan and 2016-2017 (Permit Year 4) Annual Report were also reviewed. Data gaps, outstanding data needs, and discrepancies were identified. A questionnaire was completed by the Water Program Manager (WPM) at MCBQ's Natural Resources and Environmental Affairs Branch (NREAB) in December 2017 to resolve data needs, data gaps, and discrepancies and to capture the details of the BMPs currently implemented by MCBQ to meet the required MCMs.

Sections 4-9 describe the BMPs that MCBQ is implementing to meet the six (6) MCMs required by the Small MS4 Permit based on the information received from MCBQ. Included in each section is:

- Each requirement as listed in Section I E for each MCM.
- A brief description of each BMP.
- The objective and measurable goals by which the BMP will be evaluated.
- Standard operating procedures or policies used to implement the BMPs.
- The BMP implementation schedule, including any interim goals where appropriate or necessary.
- The parties and/or divisions responsible for implementing the BMPs.
- The implementation procedures for each BMP, including a discussion of the documents MCBQ uses during BMP implementation, if applicable.

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4.0 MCM 1: PUBLIC EDUCATION AND OUTREACH

The first MCM in the Small MS4 Permit (Section I E 1) requires MCBQ to provide public education and outreach on stormwater impacts.

Table 1. Summary of MCM 1 Requirements and BMPs

#	MCM 1 Requirement	Permit Section	Fulfilled by BMPs
1	Implement a public education and outreach program.	Section I E 1 a	Develop a Public Education Outreach Plan (PEOP)
2	Identify high-priority stormwater issues with rationale for selection and an explanation of positive impact on stormwater discharges.	Section I E 1 b Section I E 1 f (2)	Develop a Public Education Outreach Plan (PEOP)
3	The high-priority public education and outreach program, as a whole, shall: (1) Clearly identify the high-priority stormwater issues; (2) Explain the importance of the high-priority stormwater issues; (3) Include measures or actions the public can take to minimize the impact of the high-priority stormwater issues; and (4) Provide a contact and telephone number, website or location where the public can find out more information.	Section I E 1 c	Develop a Public Education Outreach Plan (PEOP)
4	Identify the public audience to receive each high-priority stormwater message.	Section I E 1 f (3)	Develop a Public Education Outreach Plan (PEOP)
5	Develop strategies to communicate each high-priority stormwater message and when communicated to public.	Section I E 1 d Section I E 1 f (4) Section I E 1 f (5)	Develop a Public Education Outreach Plan (PEOP)

Sections 4.1-4.3 present the BMPs that MCBQ currently implements to address MCM 1, Public Education and Outreach.

4.1 BMP 1.a: Develop a Public Education Outreach Plan (PEOP)

BMP Description: Develop and implement a Public Education Outreach Plan (PEOP).

Objective/ Measurable Goals/ Expected Results: PEOP to be designed to include a list of the high-priority stormwater issues the permittee addresses in the public education and outreach program and a list of the strategies used to communicate each high-priority stormwater issue.

Method to Determine BMP Effectiveness: Annually evaluate and update the PEOP per the high-priority stormwater issues and rationale for selection of each issue; an explanation of how each education or outreach strategy is intended to have a positive impact on stormwater discharges; identification of the public audience to receive each high-priority stormwater message; the effectiveness of the strategies used to communicate to the public; and the anticipated time periods the messages will be communicated or made available to the public.

Implementation Schedule: Produce updated PEOP and perform outreach activities.

Responsible Party: NREAB

Implementation Procedures:

- Increase public's knowledge of how to reduce stormwater pollution, placing priority on reducing impacts to impaired waters and other local water pollution concerns.
- Increase public's knowledge of hazards associated with illegal discharges and improper disposal of waste, including pertinent legal implication.
- Implement a diverse program with strategies that are targeted toward individuals or groups most likely to have significant stormwater impacts.
- Clearly identify and explain the importance of no less than three (3) high-priority stormwater issues to meet the goal of educating the public.
- Include measures or actions the public can take to minimize the impact of the high-priority stormwater issues.
- Provide a contact name and telephone number or location where the public can find out more information.

4.2 BMP 1.b: Charity Car Wash Handouts

BMP Description: Distribute car wash brochures and guidelines at charity car wash events.

Objective / Measurable Goals / Expected Results: Increase public's knowledge of the hazards associated with illegal discharges and improper disposal of wastes as well as reducing stormwater pollution during car washing activities.

Method to Determine BMP Effectiveness: To ensure a sufficient number of car wash events are conducted annually, the NREAB WPM intends to make regular contact with car wash sponsors and the Marine Federal Credit Union (MFCU). In addition, MCBQ intends to document the number of car wash brochures distributed.

Implementation Schedule: Annually. Provide updates in the annual report.

Responsible Party: NREAB and MFCU

Implementation Procedures:
Charity car wash events are conducted at the MFCU during the summer months with an average of nine (9) charity car wash events conducted per year. Car wash events are scheduled by various car wash sponsors in coordination with the MFCU. The car wash sponsors are also required to contact the NREAB WPM prior to each car wash, which provides them with car washing guidelines and car wash brochures. The car washing guidelines detail the proper procedures the car wash sponsors should follow to prohibit runoff from car washing activities. Each car wash patron receives a brochure distributed by the sponsor. The brochure summarizes the steps taken during car washing to prohibit runoff into MCBQ's waterways. The car washing guidelines and car wash brochures are also posted on the NREAB website for the public.

Following completion of each car wash event, the car wash sponsors or MFCU personnel contact the NREAB WPM to provide the number of brochures distributed. The NREAB WPM may need to regularly coordinate with the MFCU and/or car wash sponsors to ensure that the NREAB is contacted before and after every car wash.

4.3 BMP 1.c: Earth Day Information Booth

BMP Description: Distribute stormwater handouts and educate the public on the effects of runoff using the EnviroScape® model during Earth Day activities.

Objective / Measurable Goals / Expected Results: Increase public awareness of stormwater issues. Stormwater-related information is distributed and discussed at the Earth Day Information Booth in an effort to educate the public.

Method to Determine BMP Effectiveness: MCBQ intends to document the number of stormwater handouts distributed at the Earth Day Information Booth.

Implementation Schedule: Annually. Provide updates in the annual report.

Responsible Party: NREAB

Implementation Procedures:
During annual Earth Day activities, an information booth is set-up at the Base Exchange (BX). Stormwater education is provided at the booth using an EnviroScape® model, which is a visual tool that demonstrates the effects of precipitation and runoff on erosion and stormwater management. Additionally, handouts are provided to visitors that provide stormwater, solid waste, and recycling information. The information booth is operated by civilian employees, and booth visitors typically consist of residents on base and other BX shoppers who may live or work on the installation. Earth Day activities are typically advertised in the base newspaper (*The Sentry*), on the NREAB website, the NREAB Facebook page, and via e-mail.

5.0 MCM 2: PUBLIC INVOLVEMENT AND PARTICIPATION

The second MCM in the Small MS4 Permit focuses on providing public involvement and participation opportunities related to MS4 Program implementation. The Small MS4 Permit provides additional detail of this MCM in Section I E 2. Sections 5.1-5.6 present the BMPs that MCBQ currently implements to address MCM 2, Public Involvement/ Participation. The MCBQ *SOP Tier 3: Public Involvement/Participation*[4] documents the responsibilities of the NREAB WPM and NREAB Fish, Wildlife, and Agronomy Section in ensuring these BMPs are implemented.

Table 2. Summary of MCM 2 Requirements and BMPs

#	MCM 2 Requirement	Permit Section	Fulfilled by BMPs
1	Maintain an updated Small MS4 Program Plan and post copies of the plan on permittee's webpage.	Section I E 2 b	MS4 and Stormwater Pollution Prevention Webpage Development; Online Access to MS4 Program Plan
2	Maintain a webpage where mechanisms for the public to report potential illicit discharges, complaints, or other stormwater pollution concerns.	Section I E 2 e 1	MS4 and Stormwater Pollution Prevention Webpage Development; Online Access to MS4 Program Plan; Online Access to Annual Report; Public Development and Implementation
3	The following additional information shall be posted on the webpage: (1) MS4 permit and coverage letter (2) Annual report for each year of the term (3) Mechanism for the public to report potential illicit discharges, complaints, and other stormwater pollution concerns (4) Methods for how the public can provide input on the MS4 program plan	Section I E 2 b	

[4] Marine Corps Base Quantico, *Standard Operating Procedure Tier 3: Public Involvement and Participation*, *Comprehensive Storm Water Management Action Plan.* April 2011.

Table 2. Summary of MCM 2 Requirements and BMPs (continued)

#	MCM 2 Requirement	Permit Section	Fulfilled by BMPs
4	Implement no less than four activities per year to provide an opportunity for public involvement to improve water quality and support local restoration and clean-up projects	Section I E 2 c	Earth Day Activities; Roadside Clean Up

5.1 BMP 2.a: Facilitate Public Reporting of Stormwater Concerns

BMP Description: Develop and implement procedures for the public to report stormwater pollution concerns.

Objective / Measurable Goals / Expected Results: On the stormwater webpage, provide a means for the public to report potential illicit discharges, improper disposal, or spills to the MS4, complaints regarding land disturbing activities, or other potential stormwater pollution concerns.

Method to Determine BMP Effectiveness: Evaluate the public's input regarding the permittee's MS4 program from the maintained documentation.

Implementation Schedule: Provide s mechanism for the public to report concerns to the webpage no later than February 1, 2019. Provide updates in the annual report.

Responsible Party: NREAB

Implementation Procedures:
Develop a Quantico stormwater program webpage, or add to the NREA Documents webpage, to direct members of the public to where they can provide input on the MS4 and/or report:

- potential illicit discharges, improper disposal, or spills to the MS4, and
- complaints regarding land disturbing activities, and other potential stormwater pollution concerns.

Quantico will maintain documentation of public input received and the response.

5.2 BMP 2.b: MS4 and Stormwater Pollution Prevention Webpage Development

BMP Description: Develop and maintain a webpage dedicated to the MS4 program and stormwater pollution prevention.

Objective/Measurable Goals/Expected Results: Post the documents specified in permit for the public's knowledge of the MS4 program and stormwater pollution prevention plan.

Method to Determine BMP Effectiveness: Ensure that all updated documents are posted to the webpage.

Implementation Schedule: No later than February 1, 2019.

Responsible Party: NREAB

Implementation Procedures:
The webpage must include the effective MS4 permit and coverage letter; the most current MS4 program plan or location where the MS4 program plan can be obtained; the annual report for each year of the term covered by this permit; a mechanism for the public to report potential stormwater pollution concerns listed in Section 5.1; and a method for how the public can provide input on the MS4 program.

The webpage should also include a description of the public involvement activities to be implemented by MCBQ for compliance with this MCM, the anticipated time period the activities will occur, and a metric for each activity to determine if the activity is beneficial to water quality.

5.3 BMP 2.c: Update MS4 Program Plan and Post to Webpage

BMP Description: Maintain an updated Small MS4 Program Plan and post copies of the plan on permittee's webpage.

Objective/Measurable Goals/Expected Results: Update MS4 program plan after issuance of the MS4 permit, and post a copy of the MS4 program plan to the stormwater webpage after it has been updated.

Method to Determine BMP Effectiveness: Ensure that the MS4 program plan is updated and that the most recent version of the MS4 program plan is posted to the stormwater webpage.

Implementation Schedule: Update MS4 Program Plan no later than May 2019. Post revised MS4 program plan to the stormwater webpage within thirty (30) days of updating the plan.

Responsible Party: NREAB

Implementation Procedures:

This MS4 program plan has been updated based on the MS4 permit effective November 1, 2018 through October 31, 2023. Quantico will post a copy of this plan to the stormwater webpage within the required timeframe. Any additional updates to the MS4 program plan will be posted to the stormwater webpage within thirty (30) days of update.

5.4 BMP 2.d: Online Access to Annual Report

BMP Description: Develop an annual report and submit to Virginia Department of Environmental Quality (VDEQ) every year.
Objective / Measurable Goals / Expected Results: MCBQ reviews their implementation of MCMs in the MS4 program plan and develops an annual report to represent the reporting period of 1 July through 30 June for every year of permit coverage. MCBQ submits the annual report to DEQ by 1 October following each reporting period, posts copies to its webpage within thirty (30) days of submittal and retains copies of annual reports online for the duration of the permit.

Method to Determine BMP Effectiveness: Ensure that the annual report is developed every year in support of the Small MS4 Permit and is posted to the webpage.

Implementation Schedule: Submit the annual report to DEQ by 1 October for the previous reporting period and post a copy to the webpage within thirty (30) days of submittal to DEQ.

Responsible Party: NREAB

Implementation Procedures:
The NREAB WPM reviews the MCMs in the MS4 program plan annually to develop the annual report, which summarizes the year's progress in implementing BMPs documented in the MS4 program plan and as well as the BMPs to be implemented next reporting year.

The annual report shall include the following information:

(1) A summary of any public input on the MS4 program received and how NREAB responded;
(2) A webpage link to the MS4 program and stormwater website;
(3) A description of the public involvement activities implemented for this MCM;
(4) A report of the metric as defined for each activity and an evaluation as to whether or not the activity is beneficial to improving water quality; and
(5) The name of other MS4 permittees who participated in the public involvement opportunities.

Copies of each annual report are posted to the NREA Documents webpage at the following location: http://www.quantico.marines.mil/Offices-Staff/G-F-Installation-and-Environment/Natural-Resources-Environmental-Affairs/NREA-Documents/.

5.5 BMP 2.e: Earth Day Activities

BMP Description: Earth Day public outreach activities.

Objective / Measurable Goals / Expected Results: Conduct annual Earth Day activities that assist in reducing stormwater pollution and that allow for public involvement to improve water quality and support local restoration and clean-up projects.

Method to Determine BMP Effectiveness: MCBQ intends to document the number of annual Earth Day activities to ensure that sufficient outreach is conducted on stormwater pollution minimization.

Implementation Schedule: Annually. Provide updates in the annual report and on the webpage.
Responsible Party: NREAB

Implementation Procedures:
Annual Earth Day activities consist of roadside clean-ups, shoreline clean-ups, and area beautification activities organized by the NREAB. These activities are advertised to the public in *The Sentry*, on the NREAB website, and via e-mail to installation personnel. Roadside clean-ups consist of trash pick-up by active duty personnel, which are organized through their units. Area beautification activities include shoreline cleanups and clean-up of Whiskey Gulch by NREAB employees and active duty personnel.

5.6 BMP 2.f: Roadside Clean-ups

BMP Description: Roadside clean-ups

Objective / Measurable Goals / Expected Results: Conduct at least one (1) roadside clean-up in addition to Earth Day activities.

Method to Determine BMP Effectiveness: MCBQ intends to document the number of roadside clean-ups conducted annually in addition to those conducted on Earth Day to ensure that discharges of roadside debris into stormwater is minimized.

Implementation Schedule: At least once annually in addition to Earth Day activities. Provide updates in the annual report and on the webpage.

Responsible Party: NREAB

Implementation Procedures:
In addition to Earth Day and CVP activities, roadside clean-ups are conducted by active duty personnel year-round as part of area beautification. These clean-ups are typically organized by their units. Roadside clean-ups minimize debris discharged into MCBQ's waterways and offer an opportunity for public awareness of roadside debris prevention.

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6.0 MCM 3: ILLICIT DISCHARGE DETECTION AND ELIMINATION

The third MCM in the Small MS4 Permit focuses on illicit discharge[5] detection and elimination. The Small MS4 Permit provides additional detail of this MCM in Section I E 3. Sections 6.1-6.7 present the BMPs that MCBQ is currently implementing to address MCM 3, Illicit Discharge Detection and Elimination.

Table 3. Summary of MCM 3 Requirements and BMPS

#	MCM 3 Requirement	Permit Section	Fulfilled by BMPs
1	Maintain an accurate storm sewer system map and information table.	Section I E 3 a	MS4 Map and Information Table
2	Provide written notification to downstream MS4 of known physical interconnection.	Section I E 3 a 5	Notification of Downstream MS4 Permittees of any Physical Interconnections
3	Prohibit nonstormwater discharges into the storm sewer.	Section I E 3 b	Prohibit Nonstormwater Discharges
4	Maintain, implement, and enforce IDDE written procedures designed to detect, identify, and address unauthorized nonstormwater discharges, including illegal dumping, to the small MS4 to effectively eliminate the unauthorized discharge.	Section I E 3 c	Written Procedures for Nonstormwater Discharges; Investigation of Nonstormwater Discharges; Illicit Discharge and Public Participation; Dry Weather Field Screenings for Illicit Discharges

6.1 BMP 3.a: MS4 Map and Information Table

BMP Description: Develop and maintain an accurate MS4 map including the MS4 outfall locations and storm sewer conveyance. Maintain an outfall information table for the outfalls.

[5] "Illicit discharge" is defined by the Small MS4 Permit as any discharge to a municipal separate storm sewer that is not composed entirely of stormwater, except discharges pursuant to a VPDES or state permit (other than the state permit for discharges from the MS4, such as the Small MS4 Permit), discharges resulting from fire-fighting activities, and discharges identified by and in compliance with 9VAC25-890.

Objective / Measurable Goals / Expected Results: Continue to maintain mapping and geospatial data on MS4 outfalls and storm sewer conveyance owned and operated by MCBQ within the Census Urbanized Area identified by the 2010 decennial census. Update the MCBQ geospatial information systems (GIS) database with any newly identified MS4 outfalls. Continue to maintain an outfall information table for MS4 outfalls and update the table to include new outfalls constructed and/or TMDLs approved. Provide a copy of the outfall maps and outfall information table for review upon request by the public or by VDEQ.

Method to Determine BMP Effectiveness: Ensure that the MCBQ GIS database is updated with any newly identified outfalls and/or if permitted industrial and MS4 outfalls change in the next permit cycle. Ensure that the outfall information table for outfalls is updated to include new MS4 outfalls constructed and/or TMDLs approved during the immediate preceding reporting period.

Implementation Schedule: Ongoing. Provide updates in the annual report of any changes made to outfall information in installation maps, the MCBQ GIS database, or the outfall information table. No later than July 1, 2019, MCBQ shall submit to VDEQ a GIS-compatible shapefile of the MS4 map. If an MS4 map is not available in GIS format, a PDF document shall be provided as an alternative.

No later than October 1 every year, MCBQ shall update the storm sewer system map and outfall information table to include any new outfalls constructed or TMDLs approved or both during the immediate preceding reporting period.

Responsible Party: NREAB

Implementation Procedures:
MCBQ maintains maps of all permitted stormwater outfalls associated with MS4 activities under MCBQ's Small MS4 Permit No. VAR040069. These maps illustrate the outfalls discharging to surface waters. In cases where the MS4 outfall discharges to receiving water channelized underground, MCBQ may map the point downstream at which the receiving water emerges aboveground as a point of discharge. As new MS4 and industrial outfalls are identified during field activities, MCBQ incorporates new MS4 outfall locations into the MCBQ GIS database. All maps are secured at the NREAB due to the sensitive nature of the information contained on the maps; however, copies are available upon request.

MCBQ has identified the water bodies receiving stormwater runoff from the MCBQ MS4 area as the following:

- PL52 Quantico Creek
- PL53 Chopawamsic Creek
- PL54 Potomac River-Tank Creek
- PL55 Beaverdam Run

6.2 BMP 3.b: Prohibit Nonstormwater Discharges

BMP Description: Use legal authorities to prohibit unauthorized nonstormwater discharges to the storm sewer system.

Objective / Measurable Goals / Expected Results: Maintain official documentation of legal authorities used to prohibit unauthorized nonstormwater discharges. Official documentation includes MCBQ policy, contracting language, and associated environmental plans.

Method to Determine BMP Effectiveness: On an annual basis, ensure that official documentation of legal authorities, such as orders, plans, manuals, etc., is maintained to restrict nonstormwater discharges into the storm sewer system and updated, if needed, based on any known nonstormwater discharges.

Implementation Schedule: Ongoing. Ensure that official documentation of legal authorities is maintained and updated if needed. Include updates in the annual report, as needed.

Responsible Party: NREAB

Implementation Procedures:
MCBQ is a Department of Defense (DoD) facility and, therefore, owns and operates the property inside its legal boundaries (except for the DOJ campus as discussed in Section 2). As a result, MCBQ has direct legal authority over MCBQ infrastructure, property, equipment, and activities conducted by staff and contractors, if they result in illicit discharges. In addition, MCBQ has responsibility for removing any sources of illicit discharges identified during illicit discharge investigations if related to MCBQ-owned infrastructure, property, or equipment. MCBQ also has responsibility for ceasing activities or practices conducted by MCBQ staff and contractors resulting in illicit discharges to the storm sewer.

In addition to MCBQ's authority as a DoD facility, MCBQ utilizes other legal authorities, such as contract language, Marine Corps Orders (MCOs), plans, and standard operating procedures (SOPs) to prohibit nonstormwater discharges to the storm sewer system. Contract language for projects that require field work at MCBQ provides a requirement to implement control measures for various sources of pollution, including stormwater discharges. In addition, MCBQ incorporates requirements into contracting language for construction projects to implement controls for preventing nonstormwater discharges to the MS4. All construction contractors are required to implement appropriate controls and comply with regulations even if the construction activity does not require a stormwater discharge permit.

Summaries are provided below of various documents (MCOs, plans, and SOPs) that contain specific language or procedures for prohibiting nonstormwater discharges to the storm sewer system at MCBQ.

MCO P5090.2A: *Environmental and Compliance Manual*[6]

MCO P5090.2A: *Environmental and Compliance Manual* states that MCBQ must "...determine if any nonstormwater discharges occur. Certain nonstormwater discharges are authorized, such as water from fire-fighting activities, hydrant flushing, street cleaning, air-conditioning and compressor condensates, and lawn watering. For other nonstormwaters, the discharger must develop a list of illicit discharges discovered and submit it to the regulatory agency. The agency determines which discharges may be permitted and under what conditions. Any discharges that cannot be permitted must be eliminated. Coordination with Federal and state regulatory agencies is essential to determine applicable requirements." The policy further stipulates requirements for hazardous pollutant discharges and discharges from construction and industrial activities.

MCBO 6280.1B: *Handling, Transfer, and Disposal of Hazardous Materials and Hazardous Waste*[7]

Marine Corps Base Order (MCBO) 6280.1B: *Handling, Transfer, and Disposal of Hazardous Materials and Hazardous Waste* details MCBQ's procedures for proper handling, transfer, and disposal of hazardous materials and hazardous wastes. This MCBO was written in accordance with Public Law 94-580,[8] MCO P5090.2A (discussed previously), and MCBO 6280.4A (discussed below), which "prohibit the dumping of hazardous substances and oil products into the environment and establish a requirement for a program to manage the use and disposal of [hazardous materials/hazardous wastes] from the point of generation to ultimate disposal - from 'cradle to grave.'" MCBQ's procedures for handling hazardous materials and wastes will be discussed in more detail in Section 9.1.

MCBO 6280.4A: *Hazardous Material Management Program*[9]

MCBO 6280.4A provides details on MCBQ's Hazardous Material Management Program (HMMP), including general provisions for storing and tracking hazardous materials. This MCBO requires MCBQ to "implement pollution prevention measures to eliminate/minimize environmental costs, minimize procurement of [hazardous materials] and/or reduce the generation of pollution from operations." The MCBO also details the responsibilities of various MCBQ personnel related to HMMP implementation, including the NREAB, Public Works Branch (PWB), and Facilities Engineering Acquisitions Division (FEAD) Director. The HMMP will be discussed in more detail in Section 9.1.

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[6] Department of the Navy, MCO P5090.2A: *Environmental Compliance and Protection Manual*. Effective Date: August 6, 2013. Document available at: http://www.marines.mil/Portals/59/MCO%20P5090.2A%20W%20CH%201-3.pdf.

[7] United States Marine Corps, MCBO 6280.1B: *Handling, Transfer, and Disposal of Hazardous Materials and Hazardous Waste*. Effective Date: August 27, 2007. Document available at: http://www.quantico.marines.mil/Portals/147/Adjutant/SSIC/06000/HANDLING,%20TRANSFER,%20AND%20DISPOSAL%20OF%20HAZARDOUS%20MATERIALS%20AND%20HAZARDOUS%20WASTE_06280_1B.pdf.

[8] Public Law 110-140, *Energy Independence and Security Act of 2007*. Effective Date: December 19, 2007. Document available at: https://www.gpo.gov/fdsys/pkg/PLAW-110publ140/pdf/PLAW-110publ140.pdf.

[9] United States Marine Corps, MCBO 6280.4B, *Hazardous Material Management Program*. Effective Date: August 6, 2013.

Commander's Policy Letter 3-12: *Sewage Spill Response, Reporting, and Management*[10]
This policy letter details the procedures for reporting and responding to spills, including emergency contact information and step-by-step instructions for spill clean-up. This policy is applicable to all areas, activities, tenant organizations, and contractors at MCBQ. This Policy Letter is provided directly to NREAB, Facilities Maintenance Section (FMS) and Lincoln Housing.

Environmental Compliance & Protection Standard Operating Procedure[11]
MCBQ's *Environmental Compliance & Protection Standard Operating Procedure* (ECPSOP) provides the SOPs for the HMMP, the Hazardous Waste Program, and the Spill Prevention and Response (SPR) Program. The HMMP and Hazardous Waste Program will be discussed in more detail in Section 9.1. The SPR Program describes procedures for mitigating potential and actual environmental impacts from hazardous material spills at MCBQ. The SPR Program was developed in response to federal (40 CFR 112[12]) and state (9VAC25-91-170, et seq.[13]) regulations for installations to implement spill response procedures.

Oil and Hazardous Substance Spill Prevention and Response Plan[14]
According to MCBQ's 2011 CSMWP, the *Oil and Hazardous Substance Spill Prevention and Response Plan* outlines emergency notification protocols and initial response procedures for oil, hazardous substance, hazardous material, and hazardous waste spills occurring at workstations throughout MCBQ. It also lists the emergency spill response equipment available at all industrial areas within MCBQ. The guidance provided in this plan addresses pollution prevention and spill response requirements outlined in the following federal, Commonwealth of Virginia, and United States Marine Corps authorities:

- Facility Response Plan
- Spill Prevention Control and Countermeasures (SPCC) Plan
- Virginia Oil Discharge Contingency Plan
- Hazardous Waste Contingency Plan
- Comprehensive Environmental Response, Compensation, and Liability Act[15]
- Emergency Planning and Community Right-to-Know Act[16]

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[10]United States Marine Corps, Commander's Policy Letter 3-12: *Sewage Spill Response, Reporting, and Management.* Effective Date: October 11, 2012. Document available at: http://www.quantico.marines.mil/Portals/147/003-12%20%20POLICY%20LTR%20-%20SEWAGE%20SPILL%20RESPONSE,%20REPORTING,%20AND%20MANAGEMENT.pdf.
[11] Marine Corps Base Quantico, *Environmental Compliance & Protection Standard Operating Procedures*. Date unknown.
[12] Code of Federal Regulations. Electronic version available at: http://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title40/40cfr112_main_02.tpl.
[13] 9VAC25-91-170, et seq. *Facility and Aboveground Storage Tank Regulation (9VAC25-91).* Document available at: http://www.deq.virginia.gov/Portals/0/DEQ/Land/Tanks/astfin.pdf.
[14] Marine Corps Base Quantico, Section 6.2: *Oil and Hazardous Substance Spill Prevention and Response Plan, Comprehensive Storm Water Management Action Plan*, October 2011.
[15] Available at: http://www.epw.senate.gov/cercla.pdf.

- Resource Conservation and Recovery Act[17]
- Occupational Safety and Health Administration[18]
- MCO P5090.2A

Spill Prevention Control and Countermeasures Plan[19]

MCBQ's SPCC Plan is integrated into MCBQ's Oil and Hazardous Substance Spill Prevention and Response Plan as required by Oil and Pollution Prevention Regulations (40 CFR 112) and MCBQ's SPR Program (previously described). A SPCC Plan must be prepared for facilities with greater than 1,320 gallons of aboveground oil storage capacity and/or 42,000 gallons of underground storage capacity. The SPCC Plan details the equipment, methods, and procedures to be utilized to prevent the discharge of oil from shore activities into navigable waters of the United States or onto adjoining shorelines. MCBQ's current SPCC Plan provides an inventory of all petroleum, oil, and lubricant (POL) handling facilities, an inventory of containment structures and operational practices, and requirements for inspections and recordkeeping.

Hazardous Waste Minimization Program

According to the 2011 CSWMP, MCBQ has implemented a Hazardous Waste Minimization Program that utilizes alternative materials, process modifications, and alternative disposal procedures to reduce the generation of hazardous wastes. Another primary component of this program is using suggestions from employees, who are a subset of MCBQ's definition of the "public," to minimize hazardous waste generation.

Integrated Pest Management Plan[20]

MCBQ's *Integrated Pest Management Plan* (IPMP) provides a comprehensive overview of pest management and pesticide-related operations at MCBQ. The IPMP will be discussed further in Section 9.3. The IPMP includes general instructions for preventing pollution of the stormwater sewer system. For example, the IPMP recommends that pesticide applicators should "use care in selecting pesticides for use in storm sewers as this can lead to stormwater pollution. Applications should be made when dry and stormwater is not anticipated within a week." The IPMP also states that "disposing of pesticides in a drain or storm drain is strictly prohibited" at MCBQ.

The RED Plan[21]

According to the 2011 CSWMP, the *RED Plan* details emergency notification and initial response procedures to be conducted in the early stages of an oil or hazardous substance

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[16]Available at: https://www.gpo.gov/fdsys/pkg/USCODE-2011-title42/pdf/USCODE-2011-title42-chap116.pdf.
[17]Available at: http://www.epw.senate.gov/rcra.pdf.
[18] Available at: https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9768.
[19] Marine Corps Base Quantico, Section 6.3: *Spill Prevention Control and Countermeasures Plan*, *Comprehensive Storm Water Management Action Plan*, October 2011.
[20] Marine Corps Base Quantico, *Integrated Pest Management Plan*. Effective Date: September 2012.
[21] Marine Corps Base Quantico, Section 4.3.2: Emergency Incidents, *Comprehensive Storm Water Management Action Plan*, October 2011.

spill that has escaped to the air, water, or soil and is beyond the capabilities of trained personnel to address. The RED Plan is available in area work centers. The plan instructs "qualified personnel [to] assess the situation, identify potential drainage routes, and direct personnel to take whatever additional steps are necessary to arrest, contain, minimize or divert the spill."

Facility SOPs

Each Facility SOP contains a "Source Control Procedures" section that details the procedures to be followed to stop or minimize a spill. The SOPs also list facility contact information and spill response equipment and materials. All Facility SOPs are provided in MCBQ's 2011 CSWMP.

Comprehensive Storm Water Management Action Plan

MCBQ's 2011 CSWMP summarizes all of the previously described plans and policies. The CSWMP also lists allowable nonstormwater discharges at MCBQ. In addition, the CSWMP describes good housekeeping BMPs applicable to illicit discharges that are conducted at MCBQ, including BMPs for controlling discharges and removing pollutant sources. Additional details will be provided on these BMPs in Section 9.1. The CSWMP also provides an inventory of all spill response equipment at MCBQ.

6.3 BMP 3.c: Written Procedures for Nonstormwater Discharges

BMP Description: Maintain and implement illicit discharge detection and elimination (IDDE) written procedures to detect, identify, and address unauthorized nonstormwater discharges, including illegal dumping, to the MS4.

Objective / Measurable Goals / Expected Results: Eliminate unauthorized discharges to the MS4.

Method to Determine BMP Effectiveness: Ensure that the written procedures include a description of the legal authorities, policies, standard operating procedures or other legal mechanisms available to the eliminate sources of ongoing illicit discharges, including procedures for using legal enforcement authorities. Ensure that the dry weather field screening protocols as specified in the permit are also included in the written procedures.

Implementation Schedule: Document results and findings annually.

Responsible Party: NREAB

Implementation Procedures:

Include the following written procedures for nonstormwater discharges:

- A prioritized schedule of field screening activities and rationale for prioritization based on such criteria as age of the infrastructure, land use, historical illegal discharges, dumping or cross connections.

- Since the total number of MS4 outfalls is greater than 50, include in the protocols a schedule to screen a minimum of 50 outfalls annually. No more than 50% of the MS4 outfalls screened in the previous 12-month period will be included in in the subsequent year's screening.
- A mechanism to track information such as the outfall unique identifier, time since the last precipitation event and the associated quantity, site descriptions, whether or not a discharge was observed, the estimated discharge rate, and the visual observations.
- A timeframe to conduct an investigation to identify and locate the source of any observed unauthorized nonstormwater discharge. Priority of investigations will be given to discharges of sanitary sewage and those believed to be a risk to human health and public safety. Discharges authorized under a separate Virginia Pollution Discharge Elimination System (VPDES) or state permit require no further action under this permit.
- Methodologies to determine the source of all illicit discharges. If the source of an illicit discharge is not able to be identified within six (6) months of beginning the investigation, then NREAB will document that the source remains unidentified. If the observed discharge is intermittent, NREAB will document that attempts to observe the discharge flowing were unsuccessful.

6.4 BMP 3.d: Investigation of Nonstormwater Discharges

BMP Description: Conduct follow-up investigations as necessary for illicit discharges.

Objective / Measurable Goals / Expected Results: Eliminate sources of illicit discharges.

Method to Determine BMP Effectiveness: Identify illicit discharges that are continuous or expected to occur more frequently than a one-time discharge and establish methodologies for conducting follow-up investigations. Verify that the discharge has been eliminated.

Implementation Schedule: Ongoing program, with elimination of any nonstormwater discharges immediately following their identification, to the maximum extent practical. Document results and findings in annual reports.

Responsible Party: NREAB

Implementation Procedures:
Develop a mechanism to track all illicit discharge investigations to document: (i) the date that the illicit discharge was initially observed; (ii) the results of the investigation, including the source, if identified; (iii) any follow-up to the investigation; (iv) resolution of the investigation; and (v) the date that the investigation was closed.

6.5 BMP 3.e: Dry Weather Field Screenings for Illicit Discharges

BMP Description: Conduct dry weather field screenings to detect potential illicit discharges.

Objective / Measurable Goals / Expected Results: Conduct dry weather field screenings of 50 MS4 outfalls each year.
Method to Determine BMP Effectiveness: Document and evaluate results of dry weather field screenings. If several illicit discharges are discovered in a screening event, it may signal the need for corrective action to prevent discharges. Ensure that identified illicit discharges were addressed and eliminated.

Implementation Schedule: Annual screening of 50 MS4 outfalls. Document results and findings in annual reports.

Responsible Party: NREAB

Implementation Procedures:
The NREAB WPM will conduct annual dry weather field screenings of 50 of MCBQ's MS4 stormwater outfalls to detect illicit discharges. Dry weather field screenings include a visual inspection of the outfall. If an illicit discharge is detected, the NREAB WPM submits a work order to the Public Works Branch (PWB) to eliminate the illicit discharge. The PWB attempts to fix all illicit discharges immediately. Once the illicit discharge has been eliminated, the NREAB WPM conducts a follow-up investigation to verify. The NREAB WPM maintains records of all dry weather field screenings, including detected illicit discharges and the results of follow-up investigations. The dry weather field screening procedures are documented in MCBQ's *SOP Tier 3: Illicit Discharge Detection and Elimination*.[22]

Dry weather field screenings of MS4 outfalls were last conducted in 2018. Screenings included an evaluation of both industrial outfalls and various MS4 outfalls on Mainside.

6.6 BMP 3.f: Illicit Discharge and Public Participation

BMP Description: Provide a means for the public to notify MCBQ of illicit discharges.

Objective / Measurable Goals / Expected Results: Facilitate public reporting of illicit discharges and spills observed at MCBQ by providing notification instructions and contact information.

Method to Determine BMP Effectiveness: Document the notifications from the public, confirm inspections occurred in response to notifications, and document status of evaluations and/or corrective measures completed to stop the discharge from occurring.

[22] Marine Corps Base Quantico, *Standard Operating Procedure Tier 3: Illicit Discharge Detection and Elimination, Comprehensive Stormwater Management Action Plan*. April 2011.

Implementation Schedule: Ongoing. Provide updates in the annual report.

Responsible Party: NREAB

Implementation Procedures:
The NREAB website provides general instructions for reporting a spill. To report a spill or overflow, the public typically contacts the NREAB or Fire Department directly. NREAB and Fire Department contact information is provided on the NREAB website and in MCBQ's phone directory. MCBQ conducts inspections in response to spill notifications from the public. In addition, Lincoln Housing has an emergency phone number for MCBQ residents to call in the event of a spill. Lincoln Housing would then determine the appropriate spill procedure to follow and appropriate contacts to make.

Several of the policies and procedures described in Section 6.2 provide instructions for the public to report and respond to spills or overflows, including the following:

- Commander's Policy Letter 3-12: *Sewage Spill Response, Reporting, and Management:* Provides detailed instructions for reporting and responding to spills or overflows in residential and non-residential areas. Contact information is provided for Lincoln Property Management, the FMS Help Desk, the Mainside Sewage Treatment Plan, the NREAB, and the Virginia Department of Emergency Management. This Policy Letter is provided directly to NREAB, FMS, and Lincoln Housing.
- *The RED Plan:* Provides spill response procedures and contact information for the Fire Department, NREAB, and the Command Duty Officer. *The RED Plan* is available at industrial area work centers.
- Facility SOPs (provided in 2011 CSWMP): Provide spill response procedures and contact information for each industrial area at MCBQ.
- ECPSOP, Chapter 10: SPR Program: Describes the roles and responsibilities of MCBQ personnel in responding to spills.
- MCBO 6280.1B: *Handling, Transfer, and Disposal of Hazardous Materials and Hazardous Waste:* Provides detailed response procedures for hazardous materials/waste spills, including MCBQ contact information, spill response materials, and a "Spill Report Form" that must be completed by the person reporting the spill and submitted to the NREAB Environmental Compliance Section.

6.7 BMP 3.g: Notification of Downstream MS4 Permittees of any Physical Interconnections

BMP Description: Notify downstream MS4 permittees, in writing, of any physical interconnections to MCBQ's MS4 established or discovered after the effect date of the Permit (November 1, 2018).

Objective / Measurable Goals / Expected Results: Notification of any applicable downstream MS4 permittees.

Method to Determine BMP Effectiveness: Successful notification of any applicable downstream MS4 permittees.

Implementation Schedule: As interconnections are discovered. Provide updates in the annual report.

Responsible Party: NREAB

Implementation Procedures:

- Update the current storm sewer system maps when personnel discover new MS4 outfalls.
- Map and confirm interconnections prior to identifying neighboring MS4s.
- Notify downstream MS4s of the interconnection in writing as these interconnections are identified and confirmed.
- Provide a summary of any action taken in a given reporting year in that year's annual report.

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7.0 MCM 4: CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

The fourth MCM in the Small MS4 Permit focuses on implementing construction site and stormwater runoff controls. The Small MS4 Permit provides additional detail of this MCM in Section I E 4.

Sections 7.1-7.2 present the BMPs that MCBQ currently implements to address MCM 4, Construction Site and Stormwater Runoff Control. Sections 7.1-7.2 also provide information on MCBQ's plan review procedures, written inspection procedures, procedures for compliance and enforcement, and the roles and responsibilities of each of MCBQ's departments and divisions in implementing the various BMPs discussed below.

Table 4. Summary of MCM 4 Requirements and BMPs

#	MCM 4 Requirement	Permit Section	Fulfilled by BMPs
1	Utilize and describe the legal authority, such as ordinances, permits, orders, specific contract language, and interjurisdictional agreements, to address discharges entering the MS4 from regulated construction site stormwater runoff.	Section I E 4 a Section I E 4 c (3)	Legal Authorities for Construction Site Runoff Control
2	If the permittee is a federal entity and has developed standards and specifications in accordance with Virginia Erosion and Sediment Control Law and Virginia Erosion and Sediment Control Regulations, the permittee shall implement the most recently approved standards and specification in the MS4 program plan. The permittee shall also include a copy of the most recent standards and specifications approval letter as well as the location of where these can be found.	Section I E 4 c (2)(a) Section I E 4 c (2)(b)	Construction Site Compliance Inspections and Enforcement
3	The program shall include written procedures to ensure erosion and sediment controls are properly implemented and utilized during the inspection including the inspection schedule.	Section I E 4 c (4)	Construction Site Compliance Inspections and Enforcement

Table 4. Summary of MCM 4 Requirements and BMPs (continued)

#	MCM 4 Requirement	Permit Section	Fulfilled by BMPs
4	Written procedures for requiring compliance through corrective action or enforcement action.	Section I E 4 c (5)	Construction Site Compliance Inspections and Enforcement
4	Identify roles and responsibilities in implementing the construction site stormwater runoff control requirements.	Section I E 4 c (6)	Construction Site Compliance Inspections and Enforcement

7.1 BMP 4.a: Legal Authorities for Construction Site Runoff Control

BMP Description: Utilize and describe legal authorities to address discharges entering the Small MS4 from construction activities.

Objective / Measurable Goals / Expected Results: Ensure that legal authorities are documented to address discharges entering the Small MS4 from construction activities. In addition, ensure that documented legal authorities are consistent with the most recent Commonwealth of Virginia regulations concerning construction site runoff control.

Method to Determine BMP Effectiveness: Annually check that all legal authorities are appropriately documented in ordinances, permits, orders, specific contract language, policies and interjurisdictional agreements and are consistent with the most recent Commonwealth of Virginia regulations concerning construction site runoff control. Make any updates as appropriate. Ensure that construction contractors have implemented appropriate controls.

Implementation Schedule: Annually. Provide updates in the annual report.

Responsible Party: NREAB and FEAD Director

Implementation Procedures:
MCBQ is a DoD facility and, therefore, owns and operates the property inside its legal boundaries (except for the DOJ campus as discussed in Section 2). As a result, MCBQ has direct legal authority over use and condition of the land and infrastructure it owns and operates within its legal boundaries. MCBQ works with outside contractors to conduct a variety of construction projects at the facility. MCBQ incorporates requirements into contracting language for construction projects to implement controls for preventing nonstormwater discharges to the MS4. All construction contractors are required to implement appropriate controls and comply with regulations even if the construction activity does not require a stormwater discharge permit.

The contract language, as well as other legal authorities at MCBQ, incorporates requirements stipulated in various Virginia laws and regulations for addressing stormwater discharges from construction activities. Applicable Virginia laws and regulations to construction site runoff control at MCBQ include, but are not limited to, the Virginia Erosion and Sediment Control Law (VESCL);[23] the Virginia Erosion and Sediment Control Regulation;[24] Virginia Stormwater Management Program (VSMP) Regulations;[25] General Permit for Discharges from Construction Activities;[26] and VPDES General Permit VAR040069. MCBQ is also subject to the Chesapeake Bay Preservation Area Designation and Management Regulations[27] adopted pursuant to the Chesapeake Bay Preservation Act (CBPA) due to its location in the Chesapeake Bay Watershed.

MCBQ also has various and documents and SOPs that address stormwater discharges from land disturbing activities. A summary of each of these documents is below:

Erosion & Sediment Control, Storm Water Pollution Prevention and Low Impact Development (LID)[28]

MCBQ's primary legal authority for controlling discharges from construction site activities is the fact that MCBQ is authorized by DEQ to operate a Virginia Erosion and Sediment Control Program (VESCP). All VESCP elements as implemented by MCBQ are documented in MCBQ's *Erosion & Sediment Control, Storm Water Pollution Prevention and Low Impact Development (LID) on MCB Quantico Application & Design Guidance,* hereafter referred to as "Application & Design Guidance" and provided in Appendix A of this document. The Application & Design Guidance details the necessary steps for contractors to obtain approval for land disturbing activities at MCBQ and is provided to all contractors prior to project initiation. The Application & Design Guidance also provides information and recommendations for LID features to be utilized at construction sites, which will be detailed in the BMPs for MCM 5 (Section 8).

MCBQ's Application & Design Guidance describes the requirements for all land disturbing activities taking place at MCBQ. The Application & Design Guidance defines a "disturbed area" as "an area where the land has actually been disturbed (this may not include all areas of the site). Disturbance of soil includes: clearing, grubbing, and exposure of soil by digging." The following list details the requirements for land disturbing activities based on the size and location of the affected area as documented in

[23] Virginia Erosion and Sediment Control Program. §62.1-44.15:51 et seq. of the Code of Virginia. Revised 23 March 2015. Available at https://law.lis.virginia.gov/vacode/title62.1/chapter3.1/section62.1-44.15:54/
[24] Erosion and Sediment Control Regulations. 9VAC25-840. Effective date: 23 October 2013. Available at https://law.lis.virginia.gov/admincode/title9/agency25/chapter840/
[25] Virginia Stormwater Management Program (VSMP) Regulations. 9VAC25-890. Effective date: 23 October 2013. Available at http://lis.virginia.gov/cgi-bin/legp604.exe?000+reg+9VAC25-870
[26] General Permit for Discharges of Stormwater from Construction Activities. 9VAC25-880. Effective date: 30 June 2014. Available at https://law.lis.virginia.gov/admincode/title9/agency25/chapter880/
[27] Chesapeake Bay Preservation Area Designation and Management Regulations. 9VAC25-830. Effective date: 23 October 2013. Available at https://law.lis.virginia.gov/admincode/title9/agency25/chapter830/
[28] Marine Corps Base Quantico, *Erosion & Sediment Control, Storm Water Pollution Prevention and Low Impact (LID on MCB Quantico Application & Design Guidance,* Version 4. Effective Date: October 2014.

contract language, Application & Design Guidance, and *Guide to Requirements for Land Disturbances on MCB Quantico.*[29]:

1. **Land disturbing activities affecting less than 2,500 square feet** do not usually require a VSMP General Permit for Construction Activities or any other documentation; however, contractors are still required to install any necessary stormwater controls during construction and to abide by applicable MCBQ, state, and federal Erosion and Sediment Control (E&SC) regulations. To ensure compliance, standard stormwater compliance language is incorporated into the contracts for these activities, and the NREAB WPM monitors these sites during informal construction site inspections. If the construction activity takes place in an area the NREAB has determined to be a sensitive area[30], including Resource Protection Areas (RPA), then a VSMP General Permit for Construction Activities, Stormwater Pollution Prevention Plan (SWPPP), Stormwater Management Plan (SWMP), and E&SC Plan may be required.
    1. **Land disturbing activities affecting greater than or equal to 2,500 square feet located within a RPA or other sensitive area** require a VSMP General Permit for Construction Activities, SWMP, SWPPP, E&SC Plan, Virginia State Certified Responsible Land Disturber (RLD), and completion of NREAB Storm Water Construction Training by key project personnel.
2. **Land disturbing activities affecting greater than or equal to 10,000 square feet but less than one acre located anywhere on MCBQ <u>and</u> more than 100 feet from open water, sensitive area, or drainage lines** require an E&SC Short Form. The Form is provided in the Supplementary Documentation section of the Application & Design Guidance (Appendix A) or on the NREAB website. No additional documentation is necessary unless specifically required by NREAB, determined on a case-by-case basis.
3. **Land disturbing activities affecting greater than or equal to one (1) acre located anywhere on MCBQ** require a VSMP General Permit for Construction Activities, SWMP, SWPPP, E&SC Plan, Virginia State Certified RLD, and completion of NREAB Storm Water Construction training by key project personnel.

The NREAB has identified several land disturbing activities affecting <u>less than one (1) acre</u> that <u>do not</u> require E&SC Plans. However, these activities must still abide by applicable state and federal E&SC regulations. These exemptions, which are listed in MCBQ's *Construction Site Erosion and Sediment Control: Erosion and Sediment*

[29] Document available at: http://www.quantico.marines.mil/LinkClick.aspx?fileticket=Co5TOfrIyBo%3d&tabid=20836&portalid=147&mid=46642.

Control Frequently Asked Questions[31] document on the NREAB website, include the following:

- Minor land disturbing activities such as home gardens, landscaping repairs, and maintenance work;
- Installation, maintenance, or repair of any underground public utility line on an existing hard surface road, street, or sidewalk, confined to that area;
- Septic tank or drainage field lines, unless included in an overall plan;
- Individual service connections (water and sewer);
- Tilling, planting, or harvesting of agricultural or forest crops;
- Repairing or rebuilding of tracks, right-of-ways, bridges, etc., of a railroad company;
- Installation of fence or sign posts;
- Shore erosion control projects on tidal waters, when within the regulatory authority of local wetlands boards (e.g., U.S. Army Corps of Engineers); and
- Emergency work to protect life, limb, or property.

The following bullets provide details pertaining to all requirements for land disturbing activities at MCBQ. More detailed information is also provided in MCBQ's Application & Design Guidance (Appendix A), in the contracting language for construction activities, and the quick reference *Guide to Requirements for Land Disturbances on MCB Quantico* on the NREAB website.

- VSMP General Permit for Construction Activities: MCBQ's contracting language and Application & Design Guidance provides detailed instructions and the necessary forms needed for obtaining a VSMP General Permit for Construction Activities. Once all permit forms have been completed by the contractor or RLD, the forms must be submitted to the NREAB for review and approval. The FEAD Director is responsible for ensuring the contractor submits the application materials to the NREAB in a timely manner. It is recommended that contractors submit the application materials (and other required documentation discussed below) **at least 45 days** prior to the anticipated start date of the land disturbing activity. The NREAB also submits the application materials to the NEPA Section for review and approval. Once all approvals have been acquired, the NREAB submits the application forms to the VDEQ. The contractor may not begin any land disturbing activity until the permit has been approved by the VDEQ **or** fifteen (15) business days from NREAB permit submittal to the VDEQ have passed, whichever occurs first. The NREAB must submit the permit to the DEQ at least 48 hours before any land disturbing activities begin on the construction site (for sites greater than or equal to one (1) acre).

[31] Document available at: http://www.quantico.marines.mil/LinkClick.aspx?fileticket=gI2LnEOVNZg%3d&tabid=20836&portalid=147&mid=46999.

- Erosion and Sediment Control Plan: Guidance for completing an E&SC Plan is provided in the Application & Design Guidance, the *Virginia Erosion and Sediment Control Handbook*[32] (VESCH), and in the *Construction Site Erosion and Sediment Control: Erosion and Sediment Control Frequently Asked Questions* document on the NREAB website. The Application & Design Guidance also includes a "Checklist for Erosion & Sedimentation Control Plan Review for MCB Quantico Construction Projects," which should be consulted when completing E&SC Plans. E&SC Plans or short forms must be completed by the contractor or RLD and submitted to the NREAB for approval before any land disturbing activity may take place. The NREAB also submits the plan or form to the NEPA Section for review and approval. The FEAD Director is responsible for ensuring timely submission of these documents to the NREAB by the contractor/RLD. The maximum turn-around time for the NREAB and NEPA Section to review plans is 45 days. The purpose of the review process is to ensure plans are in compliance with VESCH requirements. If the plans are inadequate, the NREAB/NEPA Section may reject the plan until the contractor makes the proper revisions and resubmits.

- Storm Water Pollution Prevention Plan: Contractors or RLDs should utilize MCBQ's *SWPPP Template*,[33] available on the NREAB website, when preparing a construction site SWPPP. The SWPPP template guides contractors/RLDs through the SWPPP development process to ensure all necessary elements are included. According to the SWPPP Template, the NREAB requires the following information to be included in a construction site SWPPP: Site evaluation, assessment, and planning information; descriptions of E&SC BMPs; descriptions of good housekeeping BMPs; selection of post-construction BMPs; inspections and maintenance procedures; record keeping and training; final stabilization plans; and SWPPP certification and notification records. In addition, the Application & Design Guidance also provides a "Checklist for Storm Water Pollution Prevention Plan Review for MCB Quantico Construction Projects" to assist contractors when developing each section of the SWPPP. Completed SWPPPs must be submitted to the NREAB for review and approval prior to the commencement of any land disturbing activity. The NREAB also submits SWPPPs to the NEPA Section for review and approval.

- Storm Water Management Plan: A SWMP is required for certain land-disturbing activities at MCBQ as described previously. A SWMP should

[32] Virginia Department of Environmental Quality, *Virginia Erosion and Sediment Control Handbook (Third Edition)*. 1992. Document available at: http://www.deq.virginia.gov/Portals/0/DEQ/Water/StormwaterManagement/Erosion_Sediment_Control_Handbook/Handbook_TableofContents.pdf.

[33] Document available at: http://www.quantico.marines.mil/LinkClick.aspx?fileticket=61MZ6Z6f9-o%3d&tabid=20836&portalid=147&mid=46642.

apply the stormwater management technical criteria set forth in 9VAC25-890 to the entire land-disturbing activity. In addition, a stormwater management plan shall consider all sources of surface runoff and all sources of subsurface and groundwater flows converted to surface runoff. Additional SWMP requirements are detailed in 9VAC25-890.

- Virginia State-Certified Responsible Land Disturber: A RLD for the construction project is required to be designated in the E&SC Plan for the site. The RLD is responsible for maintaining a copy of the E&SC Plan at the site and ensuring all workers abide by the E&SC Plan. The RLD must be certified by the Commonwealth of Virginia and maintain an active certification. MCBQ requires a certified RLD for all construction projects requiring E&SC Plans (sites greater than or equal to one (1) acre or greater than or equal to 2,500 square feet within an RPA or other sensitive area). According to MCBQ's contracting language and Application & Design Guidance (Appendix A), the RLD must meet one of the following criteria to be considered acceptable: a state RLD certificate; a certified Professional Engineer in the state of Virginia; enrolled in the state E&SC Certification Program or have obtained a state certificate through this program.

- NREAB Storm Water Construction Training: The NREAB WPM provides stormwater awareness training to new construction managers, RLDs, and/or site superintendents on a quarterly basis. Training is conducted in a classroom setting using a Microsoft PowerPoint® Presentation that focuses on review of SWPPP contents. The FEAD Director is responsible for ensuring RLDs complete this training at least annually.

- Notice of Termination: The contractor or RLD is required to complete a General Permit Notice of Termination (NOT) form[34], which is provided to the contractor by the NREAB once final stabilization of the construction site has occurred. The NREAB defines final site stabilization as 90% coverage with grass (two- to three-inch cuttings), or when sodded or mulched completely. The contractor or RLD is responsible for completing this form and submitting it to the DEQ. A copy of this form does not need to be submitted to the NREAB prior to DEQ submission.

SOP Tier 2: Public Works Section[35]

This SOP "[formalizes] storm water procedures during construction project design." In addition to listing the responsibilities of the NREAB WPM related to construction project design, the Engineering Section Supervisor shall:

[34] Document available at: http://www.quantico.marines.mil/Portals/147/NREA/VSMP%20Notice%20of%20Termination.pdf

[35] Marine Corps Base Quantico, *Standard Operating Procedure Tier 2: Public Works Section, Comprehensive Stormwater Management Action Plan.* April 2011.

- Submit copies of construction site plans to the NREAB for review.
- Complete E&SC Plans for all architect-engineering (AE) design contracts at MCBQ that disturb greater than 10,000 square feet (or greater than 2,500 square feet in an RPA or other sensitive area).
- Complete SWMPs for any AE design contract at MCBQ that disturbs greater than or equal to one (1) acre.
- Submit copies of completed E&SC Plans and SWMPs to the NREAB WPM for review and approval no less than 45 days before construction commences.

SOP Tier 2: Resident Officer in Charge of Construction (ROICC)[36]
The purpose of this SOP is "to formalize storm water construction permitting and [E&SC] procedures during construction site activity." The SOP lists the responsibilities of the NREAB WPM. In addition, the Resident Officer in Charge of Construction (ROICC), now referred to as the FEAD Director, is responsible for:

- Ensuring all relevant documents are submitted to the NREAB WPM for land disturbing activities, including permit applications, E&SC Plans, SWPPPs, and SWMPs.
- Providing the NREAB WPM with RLD certificates for each construction site where an E&SC Plan is required, and ensuring all RLDs have completed annual stormwater training.
- Providing the NREAB WPM with copies of contractor's internal E&SC inspections.
- Identifying personnel who conduct E&SC inspections for training and certification through the DEQ every three (3) years.
- Providing the NREAB with NOTs and copies of final acceptance letters indicating construction project completion and acceptance by the Government (after final E&SC inspection of the site by the NREAB WPM).

SOP Tier 3: Construction Site Inspections[37]
The purpose of this SOP is "to ensure construction activities across [MCBQ] that require an [E&SC] Plan or a VSMP permit, comply with storm water and E&SC requirements. These requirements apply to each individual construction site or each area under construction, regardless of its size, that is part of a larger common plan of development." According to the *SOP Tier 2: ROICC*, the ROICC (now referred to as the FEAD Director) is responsible for providing the NREAB WPM with RLD certificates for each construction project requiring an E&SC Plan. The FEAD Director also must ensure that all RLDs take Storm Water Training conducted by the NREAB at least annually. Prior to issuing E&SC Plan approval, the NREAB confirms RLD certification and monitors the certification throughout the duration of the construction project to ensure it does not expire.

[36] Marine Corps Base Quantico, *Standard Operating Procedure Tier 2: Resident Officer in Charge of Construction, Comprehensive Stormwater Management Action Plan*. April 2011.
[37] Marine Corps Base Quantico, *Standard Operating Procedure Tier 3: Construction Site Inspections, Comprehensive Stormwater Management Action Plan*. April 2011.

In addition to RLD certifications, the NREAB WPM has a dual combined administrator certification that includes Virginia E&SC inspector certification. Two other NREAB personnel are also Virginia-certified E&SC inspectors.

Guide to Requirements for Land Disturbances on MCB Quantico
This document is available on the NREAB website and summarizes the documentation required for land disturbances based on size. The steps for obtaining a VSMP General Permit for Construction Activities are also summarized, including website links for application materials and NREAB contact information.

Additional details regarding the resources discussed above will be provided in the remaining BMPs for this MCM.

7.2 BMP 4.b: Construction Site Compliance Inspections and Enforcement

BMP Description: Conduct construction site compliance inspections. by MCBQ personnel.

Objective / Measurable Goals / Expected Results: Inspect land-disturbing activities for compliance with an approved E&SC plan following the appropriate implementation schedule and using the "Inspection Report for E&SC and Stormwater Pollution Prevention (SWPP) at Construction Sites" form provided in the Application & Design Guidance (Appendix A).

Method to Determine BMP Effectiveness: Annually track the regulated land-disturbing activities at MCBQ. Confirm that MCBQ has addressed and resolved enforcement actions in order to prevent pollution related to land disturbance from entering the stormwater.

Implementation Schedule: Conduct construction site inspections upon initial installation of E&SC, once every fourteen (14) days, within 48 hours of a storm event resulting in 0.5 inches of rainfall or greater; and upon completion of the project for final acceptance by the Government. Provide updates in the annual report.

Responsible Party: NREAB and FEAD Director

Implementation Procedures:
Construction sites requiring E&SC Plans (i.e., sites greater than one acre OR greater than 2,500 square feet within an RPA or other sensitive area) are inspected throughout the duration of the project by the NREAB WPM to ensure activities are conducted in compliance with the approved E&SC Plan for the site. Inspections are conducted upon initial installation of E&SC, once every fourteen (14) days, within 48 hours of a storm event resulting in 0.5 inches of rainfall or greater; and upon completion of the project for final acceptance by the Government. Once the construction project is complete, the site is also inspected every 30 to 45 days until site stabilization is complete. MCBQ defines

stabilization as 90% uniform coverage of vegetation (grass) and two (2), three-inch cuttings.

Construction sites without E&SC Plans are not formally inspected; however, the NREAB WPM conducts visual (drive-by) inspections of these sites while performing other construction site inspections.

When completing an inspection, the NREAB utilizes the "Inspection Report for E&SC and SWPP at Construction Sites" form provided in the Application & Design Guidance. During formal inspections, construction sites are inspected for the following:

- Proper documentation kept on-site (i.e., VSMP General Permit for Construction Activities, E&SC Plan, SWPPP, and SWMP);
- Up-to-date inspections conducted by the RLD;
- Proper E&SC installation and maintenance at the site, as outlined in the site's E&SC Plan;
- Proper stormwater pollution prevention measures at the site, as outlined in the site's SWPPP; and
- Absence of any illicit discharges (sediment or other chemical) from the site.

Construction site inspection procedures are documented in MCBQ's *SOP Tier 3: Construction Site Inspections*[38] with the purpose of "[ensuring] that construction activities across MCB Quantico that require an Erosion & Sediment Control Plan or a VSMP permit, comply with storm water and E&SC requirements." This SOP, as well as the Environmental Compliance and ROICC SOPs, list the roles and responsibilities of MCBQ personnel in relation to construction site inspections. The NREA WPM is responsible for:

- Conducting construction site inspections;
- Ensuring that the responsible parties (base representatives and contractors) receive copies of the inspection forms;
- Maintaining completed stormwater pollution prevention and E&SC inspection forms; and
- Sending Notice of Violations (NOVs)/Warning Letters to responsible parties if violations are found.

According to the *SOP Tier 2 ROICC*, the ROICC (now referred to as the FEAD Director) is responsible for the following activities related to construction site inspections:

- Ensuring contractors correct any deficiencies;
- Supplying the NREAB with any documentation needed from the contractors, including contractor's internal inspection reports;
- Issuing NOVs/Warning Letters, if applicable; and,

[38] Marine Corps Base Quantico, *Standard Operating Procedure Tier 3: Construction Site Inspections, Comprehensive Stormwater Management Action Plan*. April 2011.

- Routinely inspecting construction sites for possible E&SC or stormwater pollution prevention issues.

If an issue is detected during a construction site inspection, the NREAB WPM coordinates with the FEAD Director to determine if an NOV or Warning Letter should be issued and/or if the E&SC Plan requires revisions.

Table 5 lists common construction site violations and the typical MCBQ response.

Table 5. Construction Site Violations

Violation	MCBQ Response
Failure to obtain a VSMP General Permit for Construction Activities	NOV
Failure to obtain NREAB approval for E&SC Plan, SWPPP, or SWMP prior to commencement of land disturbing activities	NOV
Failure to install E&SC measures before land disturbance	NOV
Improper maintenance of E&SC structures	1st violation: E-mail warning 2nd violation: Warning Letter 3rd or continuing violations: NOV
Release of any substance causing a reportable spill (including concrete wash down, paint runoff, or excess sediment)	NOV
Absence of an assigned and certified RLD at the site	NOV
Failure to maintain complete inspection records	1st violation: Warning Letter 2nd violation: NOV
Other violations	At the discretion of the inspector

When the FEAD Director issues a NOV to the contractor, a timeframe is also stipulated for addressing the detected issue. The specified timeframe is based on the severity of the issue; however, most timeframes range from seven (7) to ten (10) days. If the issue has not been addressed or the E&SC Plan has not been revised within the appropriate timeframe, the FEAD Director issues a "stop work" notice and/or elevates the issue to the Command level.

Construction project contractors or RLDs are also responsible for conducting internal E&SC inspections on a regular basis. MCBQ's "E&SC Plan Review Checklist" and "E&SC Short Form," provided in the Application & Design Guidance require the contractor to "provide a schedule of regular inspections and repair of E&SC structures." Contractor/RLD inspections are to be conducted at least once every fourteen (14) days and within 48 hours of a storm event producing 0.5 inches of rainfall or greater. According to the "Inspections" section of MCBQ's SWPPP Checklist (provided in the Application & Design Guidance), contractors/RLDs are required to submit an inspection report to the NREAB WPM.

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8.0 MCM 5: POST-CONSTRUCTION STORMWATER MANAGEMENT FOR NEW DEVELOPMENT AND DEVELOPMENT ON PRIOR DEVELOPED LANDS

The fifth MCM in the Small MS4 Permit focuses on implementing post-construction stormwater management in new development and development on prior developed lands. The Small MS4 Permit provides additional detail of this MCM in Section I E 5.

Sections 8.1-8.5 present the BMPs that MCBQ currently implements to address MCM 5, Post-Construction Stormwater Management in New Development and Development on Prior Developed Lands. Sections 8.1-8.5 provide information on procedures for BMP inspections, maintenance requirements, and the roles and responsibilities of each of MCBQ's divisions in implementing the various BMPs discussed below. MCBQ does not intend to utilize another entity to implement portions of the MS4 program plan; therefore, this MS4 program plan does not provide a copy of a written agreement in support of such of an arrangement.

Table 6. Summary of MCM 5 Requirements and BMPs

#	MCM 5 Requirement	Permit Section	Fulfilled by BMPs
1	Develop and maintain written inspection and maintenance procedures of stormwater management facilities.	Section I E 5 b (1)	Long-Term Operation and Maintenance for Stormwater Facilities Owned by the MS4 Permittee
2	Inspect stormwater management facilities no less than once per year.	Section I E 5 b (2)	Long-Term Operation and Maintenance for Stormwater Facilities Owned by the MS4 Permittee; Structural BMP Inspection and Maintenance
3	Conduct maintenance if determined to be required during inspection.	Section I E 5 b (3)	Long-Term Operation and Maintenance for Stormwater Facilities Owned by the MS4 Permittee; Structural BMP Inspection and Maintenance

Table 6. Summary of MCM 5 Requirements and BMPs (continued)

#	MCM 5 Requirement	Permit Section	Fulfilled by BMPs
4	Maintain an electronic database or spreadsheet of all known permittee-owned or permittee-operated and privately owned stormwater management facilities that discharge into the MS4.	Section I E 5 d	Electronic Database of Stormwater Management Facilities
5	Report post-construction runoff control BMPs in the DEQ Construction Stormwater Database.	Section I E 5 f	Electronic Database of Stormwater Management Facilities
6	Report applicable BMPs into the DEQ BMP Warehouse.	Section I E 5 g	Electronic Database of Stormwater Management Facilities
7	MS4 Program Plan shall include a list of the applicable legal authorities to ensure compliance with this MCM.	Section I E 5 h (3)	Post-Construction Stormwater Runoff Control
8	MS4 Program Plan shall include the roles and responsibilities in implementing the requirements of MCM 5.	Section I E 5 h (5)	Structural BMP Inspection and Maintenance; Long-Term Operation and Maintenance for Stormwater Facilities Not Owned by the MS4 Permittee

8.1 BMP 5.a: Post-Construction Stormwater Runoff Control

BMP Description: Address post-construction stormwater runoff that enters the MS4 from land-disturbing activities.

Objective / Measurable Goals / Expected Results: Implement a post construction stormwater runoff management program as specified in the Permit.

Method to Determine BMP Effectiveness: Ensure incorporation of post-construction stormwater runoff controls.

Implementation Schedule: Annually. Provide updates in the annual report.
Responsible Party: NREAB

Implementation Procedures:
The Small MS4 Permit requires MCBQ to address post-construction stormwater runoff that enters the MS4 from land disturbing activities. In addition, the Small MS4 Permit requires MCBQ to utilize its legal authority, such as ordinances, permits, orders, policies specific contract language, and interjurisdictional agreements to require design and installation of post-construction stormwater runoff controls in accordance with various criteria specified in the permit. MCBQ has direct legal authority over use and condition of the land and infrastructure it owns and operates within its legal boundaries. MCBQ works with contractors to conduct a variety of construction projects at the facility. To ensure post-construction stormwater discharges entering the small MS4 are addressed, MCBQ incorporates standard stormwater compliance language into all construction designs and legal contracts signed by contractors. This contract language is in addition to the standardized contract language for construction projects outlined in Section 7.1, BMP 4.a **(**Legal Authorities for Construction Site Runoff Control).

In addition to contract language, MCBQ's primary legal authority for addressing post-construction stormwater runoff is the Application & Design Guidance (Appendix A). The Application & Design Guidance is MCBQ's most comprehensive document regarding the procedures for utilizing LID features to minimize post-construction stormwater runoff. It provides requirements for post-construction stormwater runoff that enters the MS4 from the following land-disturbing activities:

- New development and development on prior developed lands that are defined as large or small construction activities.
- New development and development on prior developed lands that disturb greater than or equal to 2,500 square feet, but less than one (1) acre, located in an RPA or other sensitive area.

Specifically, the Application & Design Guidance provides the following information:

- A summary of federal regulations applicable to post-construction stormwater runoff control;
- Background information on LID and basic integrated management practices;
- Step-by-step instructions for determining the most appropriate LID features for development at MCBQ;
- Required design criteria for stormwater runoff controls;
- LID definitions and diagrams; and
- Checklist for LID Plan Review.

According to the Application & Design Guidance, "MCB Quantico began reviewing construction plans for adherence to the [Unified Facilities Criteria (UFC) 3-210-10] in 2009 and will require LID integration into each land disturbing project with a Storm Water Management element in [Fiscal Year (FY)] 2011 and beyond the [Department of

Navy (DON)] policy states that all new and/or major construction projects beginning in FY2011 shall incorporate [LID] features in the design." In addition to UFC and DON policy requirements, MCBQ's LID program also complies with requirements specified in the Energy Independence and Security Act (EISA). Each of these regulations is summarized in the following sections.

Unified Facilities Criteria 3-210-10[39]

The DoD published *Unified Facilities Criteria: Low Impact Development* (UFC 3-210-10) as an LID design manual that incorporates LID information from a variety of sources, including the DON LID policy and EISA. The DoD requires that all installations use the UFC to incorporate LID into general construction requirements to ensure increased stormwater quantity and quality management, thus protecting rivers, streams, and water bodies.

Department of the Navy Low Impact Development Policy[40]

The *Department of the Navy Low Impact Development Policy for Storm Water Management* "sets a goal of no net increase in storm water volume and sediment or nutrient loading from major renovation and construction projects.[41] In order to support this goal, as well as reduce reliance on conventional storm water collection systems and treatment options, this policy directs that LID be considered in the design for all projects that have a storm water management element." This policy also stipulates that LID practices should be incorporated into all construction project designs beginning in FY2011.

Energy Independence and Security Act[42]

Section 438 of the EISA, enacted in 2007, establishes strict stormwater runoff requirements for Federal development and redevelopment projects: "The sponsor of any development or redevelopment project involving a Federal facility with a footprint that exceeds 5,000 square feet shall 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." To ensure all construction projects are compliant with EISA Section 438, MCBQ provides a flowchart for implementation in the Application & Design Guidance.

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[39] Department of Defense *Unified Facilities Criteria: Low Impact Development*, UFC 3-210-10. Effective Date: June 1, 2015. Change 1: February 1, 2016. Document available at: https://www.wbdg.org/ccb/DOD/UFC/ufc_3_210_10.pdf.

[40] Department of Navy, *Department of the Navy Low Impact Development Policy for Storm Water Management*. Effective Date: November 16, 2007. Document available at: https://www.wbdg.org/pdfs/don_lid_policy_stormwater_memo_111607.pdf.

[41] Major renovation projects are defined as having a stormwater component and exceeding $5 million when initially approved by Deputy Assistant Secretary of the Navy (Installations & Facilities). Major construction projects are defined as those exceeding $750,000.

[42] Public Law 110-140, *Energy Independence and Security Act of 2007*. Document available at: https://www.gpo.gov/fdsys/pkg/PLAW-110publ140/html/PLAW-110publ140.htm.

The NREAB requires all construction projects at MCBQ to achieve compliance with UFC 3-210-10, the DON policy, and EISA Section 438. Consistent with 9VAC25-90 and 9VAC25-880, the NREAB also requires LID on any project that requires a VSMP General Permit for Construction Activities (one (1) acre and greater OR located in an RPA or other sensitive area). The selected LID feature(s) for a construction project must be designated in the site's SWPPP and E&SC Plan. The contractor should utilize the "Checklist for LID Plan Review" provided in the Application & Design Guidance to ensure all LID requirements for the project have been addressed appropriately. When application packages are submitted for a construction project (as described in Section 7.1), the NREAB and NEPA Sections evaluate these applications for compliance with MCBQ's LID policies during the review process. If appropriate LID features are not specified in the applications, the NREAB and NEPA Sections do not approve the application materials; land disturbance cannot begin at the project site until the requirements are properly addressed in the application materials.

8.2 BMP 5.b: Structural BMP Inspection and Maintenance

BMP Description: Implement an inspection and maintenance program for stormwater management facilities owned or operated by MCBQ that discharges to the MS4.

Objective / Measurable Goals / Expected Results: Implement annual inspections and maintenance on stormwater management facilities no less than once per year. Document and maintain records of findings.

Method to Determine BMP Effectiveness: Confirm that inspections for structural BMPs occur annually. Confirm that all structural BMP inspections are documented and records are maintained.

Implementation Schedule: Annually. Include updates in annual report.

Responsible Party: NREAB and PWB

Implementation Procedures:
The NREAB WPM inspects post-construction structural BMPs, including LID features, on an annual basis for new development and redevelopment construction projects as well as previously implemented BMPs. The purpose of the inspection is to ensure all site development is complete and that all BMPs are functioning as designed. To conduct the inspections, the NREAB WPM utilizes the inspection form used by contractors to conduct internal construction site inspections ("Inspection Report for E&SC and SWPP at Construction Sites" form provided in the Application & Design Guidance in Appendix A), as described in Section 7.1. If non-compliance issues are detected during the inspection that requires minor repairs, the NREAB WPM submits a repair ticket to the PWB. Once the repair ticket has been addressed, the NREAB WPM conducts a follow-up inspection to ensure the issue has been resolved. If the issue cannot be resolved easily by the PWB, the issue is documented by the NREAB WPM to be addressed at a later date. Records of annual BMP inspections are maintained by the

NREAB WPM. The responsibilities of the NREAB WPM and the PWB related to annual BMP inspections are documented in the 2011 CSMWP and *SOP Tier 2: Public Works Section.* According to these documents, the NREAB WPM is responsible for:

- Monitoring and tracking all new stormwater management structures annually;
- Conducting inspections of completed construction sites to ensure BMPs are functioning properly;
- Submitting work orders to the PWB to repair stormwater management structures, as needed; and
- Maintaining records of completed annual BMP inspections.

The PWB is responsible for:

- Performing maintenance and repairs on stormwater system and management structures as specified in work orders submitted by the NREAB WPM; and
- Notifying the NREAB WPM when maintenance and repairs have been completed.

8.3 BMP 5.c: Electronic Database of Stormwater Management Facilities

BMP Description: Create and maintain an updated electronic database or spreadsheet of stormwater management facilities.

Objective / Measurable Goals / Expected Results: Regulation of stormwater management facilities that discharge into the MS4.

Method to Determine BMP Effectiveness: Annually track and report the total number of inspections completed and, when applicable, the number of enforcement actions taken to ensure long-term maintenance.

Implementation Schedule: Update spreadsheet no later than 30 days after a new stormwater management facility is brought online or an existing stormwater management facility is discovered.

Responsible Party: NREAB.

Implementation Procedures:
MCBQ developed a BMP Spreadsheet in 2015 that includes all post-construction structural and nonstructural BMPs implemented as of September 2015. The BMP Spreadsheet was developed using DEQ's Urban BMP Reporting Spreadsheet template, dated 6 May 2014. [43] The electronic database is required to include the following:

[43] VDEQ's Urban BMP Reporting Spreadsheet template, dated 6 May 2014, can be found at: http://www.deq.virginia.gov/Programs/Water/StormwaterManagement/VSMPPermits/MS4Permits/ChesBayTMDLActionPlanInformation.aspx

- The stormwater management facility type;
- The stormwater management facility or BMPs as latitude and longitude;
- The acres treated by stormwater management facility or BMP, including total acres, pervious acres, and impervious acres;
- The date the facility was brought online. If the date is not known, the permittee shall use 30 June 2005;
- The 6th Order Hydrologic Unit Code in which the stormwater management facility is located;
- Whether the stormwater management facility or BMP is owned or operated by the permittee or privately-owned;
- Whether or not the stormwater management facility is part of the permittee's Chesapeake Bay and/or local TMDL action plan;
- If the stormwater management facility is privately owned, whether a maintenance agreement exists, and
- The date of the permittee's most recent inspection of the stormwater management facility or BMP.

8.4 BMP 5.d: DEQ Construction Stormwater Database Reporting

BMP Description: Report post-construction runoff control BMPs in the DEQ Construction Stormwater Database.

Objective / Measurable Goals / Expected Results: Tracking of post-construction runoff control BMPs that discharge to the MS4.

Method to Determine BMP Effectiveness: Track and report all post-construction runoff control BMPs installed after July 1, 2014 to address the control of post-construction runoff from land disturbing activities for which the MCBQ is required to obtain a General VPDES Permit for Discharges of Stormwater from Construction Activities.

Implementation Schedule: Report stormwater management facilities into the DEQ Construction Stormwater Database as they are installed.

Responsible Party: NREAB.

Implementation Procedures:
MCBQ will begin to use the DEQ Construction Stormwater Database to report stormwater management facilities installed after July 1, 2014 to address the control of post-construction runoff from land disturbing activities for which the MCBQ is required to obtain a General VPDES Permit for Discharges of Stormwater from Construction Activities.

Include in the annual report a confirmation statement that required stormwater management facility information was submitted through the Virginia Construction

Stormwater General Permit database, or a statement that no projects requiring coverage under the General VPDES Permit for Discharges of Stormwater from Construction Activities were completed.

8.5 BMP 5.e: Reporting of Water Quality BMPs in BMP Warehouse

BMP Description: Report stormwater management facilities implemented between July 1 and June 30 of each year using the DEQ BMP Warehouse and associated reporting template for any practices for which a General VPDES Permit for Discharges of Stormwater from Construction Activities was not required.

Objective / Measurable Goals / Expected Results: Regulation of stormwater management facilities that discharge into the MS4.

Method to Determine BMP Effectiveness: Annually track and report the total number of inspections completed and, when applicable, the number of enforcement actions taken to ensure long-term maintenance.

Implementation Schedule: Report BMPs implemented during the reporting period (between July 1 and June 30 of each year) into the DEQ BMP Warehouse no later than October 1 of each year.

Responsible Party: NREAB.

Implementation Procedures:
No later than October 1 of each year, MCBQ will electronically report the stormwater management facilities and BMPs implemented between July 1 and June 30 of each year using the DEQ BMP Warehouse and associated reporting template for any practices not reported in accordance with Section I E 5 f. This includes stormwater management facilities installed to control post-development stormwater runoff from land disturbing activities less than one acre in accordance with the Chesapeake Bay Preservation Act regulations (9VAC25-830) and for which a General VPDES Permit for Discharges of Stormwater from Construction Activities was not required.

In the annual report, include a confirmation statement that MCBQ electronically reported BMPs using the DEQ BMP Warehouse in accordance with MCM 5 and the date on which the information was submitted.

9.0 MCM 6: POLLUTION PREVENTION AND GOOD HOUSEKEEPING FOR FACILITIES OWNED OR OPERATED BY THE PERMITTEE

This section discusses the sixth MCM in the Small MS4 Permit, which focuses on pollution prevention and good housekeeping measures for facilities owned or operated by the permittee. The Small MS4 Permit provides additional detail of this MCM in Section I E 6. Sections 9.1-9.9 present the BMPs and other work that MCBQ is currently implementing to address MCM 6, Pollution Prevention and Good Housekeeping for Facilities Owned or Operated by the Permittee.

Table 7. Summary of MCM 6 Requirements and BMPs

#	MCM 6 Requirement	Permit Section	Fulfilled by BMPs
1	Maintain and implement written procedures for pollution prevention and good housekeeping.	Section I E 6 a	Pollution Minimization or Prevention from Daily Operations
2	Identify high-priority facilities with a high potential of discharging pollutants.	Section I E 6 c	Update Existing Industrial SWPPP Regularly
3	Maintain and implement a site specific stormwater pollution prevention plan (SWPPP) for each facility identified.	Section I E 6 c	Update Existing Industrial SWPPP Regularly
4	Review any high-priority facility owned or operated by the permittee for which a SWPPP has not been developed to determine if the facility has a high potential to discharge pollutants.	Section I E 6 e	Update Existing Industrial SWPPP Regularly
5	Develop a SWPPP meeting the requirements of this MCM for any newly identified facility with high potential to discharge pollutants	Section I E 6 e	Update Existing Industrial SWPPP Regularly
6	Review SWPPP after unauthorized discharge, release, or spill reported.	Section I E 6 f	Update Existing Industrial SWPPP Regularly
7	Update SWPPP after unauthorized discharge, if necessary.	Section I E 6 f	Update Existing Industrial SWPPP Regularly

Table 7. Summary of MCM 6 Requirements and BMPs (continued)

#	MCM 6 Requirement	Permit Section	Fulfilled by BMPs
8	SWPPP shall be kept at the high-priority facility and utilized as part of staff training.	Section I E 6 g	Update Existing Industrial SWPPP Regularly
9	Maintain and implement turf and landscape nutrient management plans where nutrients are applied to a contiguous area greater than one acre.	Section I E 6 i	Nutrient Management Planning
10	Require that contractors engaging in activities with the potential to discharge pollutants use appropriate control measures to minimize the discharge of pollutants to the MS4.	Section I E 6 l	Employee and Contractor Training Schedule and Program; Ensure Contractors Use Control Measures and Procedures
11	Develop a written training plan for applicable staff that meets the requirements of MCM 6 as listed in the 2018-2023 MS4 Permit.	Section I E 6 m	Employee and Contractor Training Schedule and Program; Pollution Prevention and Good Housekeeping Written Procedures
12	Train field personnel in the recognition and reporting of illicit discharges.	Section I E 6 m (1)	Employee and Contractor Training Schedule and Program
13	Train employees performing road, street, and parking lot maintenance in pollution prevention and good housekeeping associated with those activities.	Section I E 6 m (2)	Pollution Minimization or Prevention from Daily Operations; Employee and Contractor Training Schedule and Program

Table 7. Summary of MCM 6 Requirements and BMPs (continued)

#	MCM 6 Requirement	Permit Section	Fulfilled by BMPs
14	Train employees working in and around maintenance, public works, or recreational facilities receive training in good housekeeping and pollution prevention practices associated with those facilities.	Section I E 6 m (3)	Pollution Minimization or Prevention from Daily Operations; Employee and Contractor Training Schedule and Program
15	Ensure that employees and contractors who apply pesticides and herbicides are trained or certified in accordance with the Virginia Pesticide Control Act (§ 3.2-3900 et seq. of the Code of Virginia.	Section I E 6 m (4)	Pollution Minimization or Prevention of Pesticides, Herbicides, and Fertilizers
16	Ensure that employees and contractors serving as plan reviewers, inspectors, program administrators, and construction site operators obtain the appropriate certifications.	Section I E 6 m (5)	Employee and Contractor Training Schedule and Program
17	Ensure that employees and contractors implementing the stormwater program obtain the appropriate certifications as required under the Virginia Stormwater Management Act and its attendant regulations.	Section I E 6 m (6)	Pollution Minimization or Prevention of Pesticides, Herbicides, and Fertilizers; Nutrient Management Planning
18	Maintain documentation of each training event.	Section I E 6 n	Employee and Contractor Training Schedule and Program

9.1 BMP 6.a: Pollution Minimization or Prevention from Daily Operations

BMP Description: Maintain and implement written procedures for those activities at facilities owned or operated by the permittee.

Objective / Measurable Goals / Expected Results: Implement regular procedures for maintaining illicit discharge from daily operations such as road, street, parking lot maintenance, equipment maintenance, and the application, storage, transport, and disposal of pesticides, herbicides, and fertilizers.

Method to Determine BMP Effectiveness: Confirm regular implementation of good housekeeping and pollution prevention procedures during annual Comprehensive Site Compliance Evaluations (CSCEs) required by VPDES Permit VA0002151 and MCBQ's 2011 CSWMP.

Implementation Schedule: Ongoing. Provide updates in the annual report, if applicable.

Responsible Party: Westside Guad Maintenance Group (street sweeping) / Facility Environmental Coordinators (daily good housekeeping) / Westside Guad Maintenance, Lincoln Housing, Tenant Activities Branch, MCAF (deicing) / NREAB (program oversight)

Implementation Procedures:
The written procedures shall be utilized established in accordance with Section I E 6 of the Permit shall be utilized as part of the employee training program.

MCBQ's 2011 CSWMP documents several good housekeeping BMPs that are conducted as part of routine daily operations at MCBQ, including the following:

- Discharge control and illicit discharge prevention:
  - No hazardous material or hazardous waste is to be discharged to storm sewers or sanitary sewers.
  - Discharge all janitorial cleaning rinse waters into sanitary sewers only.
  - Visually inspect and document secondary containment discharge prior to release.
  - Maintain spill response equipment on-site at hazardous material/waste storage areas and fueling areas.
  - Ensure prompt containment and removal of spills.
- Hazardous material/waste storage:
  - Store hazardous material and waste (hazardous and solid) containers on a covered, impervious surface with secondary containment.
  - Maintain neat and orderly storage of hazardous material/waste with proper spacing for pathways and walkways between containers and drums.

  - Use indoor storage of hazardous materials/wastes to the extent practicable.
  - Lock all outdoor locker and Conex storage boxes when not in use.
- General housekeeping:
  - Maintain a clean and orderly work area.
  - Sweep up litter and debris from sidewalks, driveways, and parking lots.
  - Keep lids on garbage and waste containers closed when not being filled or emptied.
  - Remove garbage and waste materials at regularly scheduled intervals, and place in proper closed containers.
  - Place scrap metal in covered containers.
  - Conduct periodic inspections of storm sewers and structural BMPs.
  - Conduct periodic visual inspection of rooftops where industrial combustion particular emissions occur.

- General facility maintenance:
  - Use tarps or vacuums during outdoor sanding/blasting operations.
  - Use drip pans and tarps during outdoor painting operations.
  - Maintain salt piles indoors with bermed or graded entrances to prevent run-on and run-off.

These BMPs, as well as additional BMPs for specific industrial activities conducted at MCBQ, are documented in the various Facility SOPs and associated Stormwater Pollution Prevention Inspection Checklists.

The following sections document MCBQ's policies and procedures for daily operations associated with road, street, and parking lot maintenance conducted at MCBQ to ensure compliance with MS4 permitting requirements.

9.1.1 Street Sweeping

The Westside Guad Maintenance Group (Shop 71) conducts street sweeping at MCBQ on a daily basis using two (2) regenerative vacuum-type sweepers. They receive work orders from the FMS on a weekly basis. Street sweeping is conducted on all Westside and Mainside roads, except for those located in MCB areas 1, 2, 3, 4, 5, 6, 7, and 8. It takes approximately two (2) weeks for Guad Maintenance to sweep these roads. Work orders are received from the FMS on an as-needed basis to sweep parking lots at the Officer Candidate School, Camp Upshur, and Camp Barrett/TBS; however, this does not occur regularly. Street sweeper contents are dumped into a solid waste dumpster.

Electronic Metrology Laboratory (EML) also holds contracts at MCBQ with the Museum, the Russell-Knox Complex, Marine Corps Information Operations Center (MCIOC), Marine Corps Network Operations and Security Center (MCNOSC), and Camp Upshur to perform street sweeping. EML sweeps all roads and parking lots at these locations using a vacuum sweeper on a monthly basis year-round. All street sweeper contents are disposed of off-site.\

Additionally, roadside clean-up operations are conducted as part of Earth Day activities and by the CVP, as described in Section 5.

9.1.2 Deicing

MCBQ ensures that deicing agents containing urea or other forms of nitrogen or phosphorous are not applied to parking lots, roadways, sidewalks or other paved surfaces. Most facilities at MCBQ utilize salt and sand supplied by the Westside Guad Maintenance Group for deicing purposes. Deicing activities are contracted out by Lincoln Housing, but the contractor uses the salt and sand mixture supplied by Westside Guad Maintenance.

EML performs deicing at the Museum and Russell-Knox Complex using a combination of salt, sand, and Green Scapes™ Ice Melt, which is an eco-friendly ice melt blended with magnesium chloride. EML does not apply any deicing agents that contain urea or any other forms of nitrogen or phosphorous. Occasionally, EML performs deicing at MCNIOC and Camp Upshur, but not on a regular basis.

MCAF also does not use urea or other forms of nitrogen or phosphorous for deicing purposes. If needed, MCAF personnel use a glycol-based product for aircraft and/or airfield deicing. Often, deicing activities are minimal as aircraft are stored in hangars during wintry weather to prevent icing of aircraft and/or flying exercises are canceled in bad weather.

9.1.3 Utility Construction and Maintenance

Utility construction and maintenance activities that may discharge water, such as water pumped from utility construction and related activities must first be approved by the FEAD Director. This requirement is included in all contracts for construction projects. The BMPs implemented to minimize runoff from these activities are determined on a case-by-case basis by the NREAB.

9.1.4 Wastewater Discharges

The discharge of wastewater to the storm sewer in areas outside of the wastewater treatment plant is prevented by BMPs documented in the Facility SOPs provided in the 2011 CSWMP for all industrial areas at MCBQ. Any accidental spills of wastewater to the storm sewer system are addressed via policies documented in Section 3.0 of the 2011 CSWMP.

9.1.5 Bulk Storage

MCBQ utilizes bulk storage structures for the containment of various materials utilized in industrial areas, including salt and sand for deicing purposes, hazardous materials, and hazardous waste products. MCBQ implements good housekeeping and

pollution prevention BMPs to minimize stormwater pollution documented in the 2011 CSWMP and detailed below.

Salt and Sand Storage

All salt and sand utilized for deicing purposes is stored in salt domes in MCBQ's industrial areas, primarily Westside Guad Maintenance and FMS. Areas surrounding the salt domes are graded to prevent runoff into the storm sewer system. The Facility SOPs (provided in 2011 CSWMP) for Westside Guad Maintenance and FMS include a BMP for conducting daily visual inspections of the salt storage facilities. In addition, the associated SWPPP checklists in the 2011 CSWMP for these areas include the following inspection question: "Is the area around the salt storage facility free of excess salt?"

Hazardous Material Storage

MCBQ's HMMP provides guidance for handling, storage, transfer, and disposal of hazardous materials. The purpose of the HMMP is to minimize the impact of hazardous materials stored and utilized at MCBQ. To achieve this purpose, MCBO 6280.4 states that "MCBQ will reduce the amount of [hazardous material] procured and used, and the amount of subsequent [hazardous waste] generated, by up-front [hazardous material] control in procurement, supply, and management. MCBQ will implement pollution prevention measures to eliminate/minimize environmental costs, minimize procurement of [hazardous materials] and/or reduce the generation of pollution from operations…this supports mission readiness, provides enhanced safety in the workplace and minimizes environmental impacts." MCBO 6280.4A requires storage of hazardous materials to be in compliance with all MCBQ legal authorities described in Section 6.2. To ensure compliance, every work center at MCBQ is subject to regular or unannounced inspections by the NREAB. The NREAB also maintains an inventory of all hazardous materials stored at MCBQ in an electronic Hazardous Material Management System. Proper disposal of any hazardous materials at MCBQ is coordinated through the NREAB.

The majority of hazardous materials stored in MCBQ's industrial areas include POLs and water treatment chemicals. MCBQ has more than 100 aboveground storage tanks (ASTs) and approximately 15 underground storage tanks (USTs) for storing these products. MCBQ manages all ASTs in accordance with Virginia's "Facility and Above Ground Storage Tanks Regulations" (9VAC25-91) and 40 CFR112. The majority of MCBQ's ASTs containing POLs are stored in designated outdoor storage areas with secondary containment provided by double-wall construction, concrete curbs, or pallet containment. Containment areas typically have valved drain ports to allow for release of accumulated rainwater after inspection. Some outdoor ASTs are also housed within outdoor sheds that consist of a three-sided structural concrete block support system and roof. The sheds are enclosed by a locked fence and have concrete floors that slope towards a manual drain. The drains discharge to immediate surrounding areas and may only be opened by authorized personnel. The purpose of the sheds is to reduce corrosion and degradation of ASTs and/or drums, minimizing spill potential during use. ASTs containing water treatment chemicals are located

indoors with secondary containment provided by concrete containment or the building floor.

MCBQ manages USTs in accordance with Virginia's *Underground Storage Tanks: Technical Standards and Corrective Action Requirements* (9VAC25-280) and 40 CFR 112 regulations. USTs utilized at MCBQ either consist of double-walled fiberglass or double-walled, cathodically-protected steel construction. All USTs are equipped with overfill protection and interstitial monitoring for leak detection. In order to prevent potential spills during tank filling operations, on-site responders are present during these activities to control discharges. Additionally, all trucks delivering petroleum products to MCBQ are required to use wheel chocks to secure the trucks during transfer to prevent spills due to premature truck departure.

All ASTs and USTs at MCBQ are listed in the *Base Petroleum Storage Tank Management Plan* (PSTMP), which provides a brief description of each tank, annual usage, tank capacity, and potential spill path. A summary of the PSTMP is provided in the 2011 CSWMP. All hazardous materials and storage areas are managed under MCBO 6280.1A and MCO P5090.2A. The NREAB also maintains a Hazardous Substance Management System for tracking hazardous materials at MCBQ, and the 2011 CSMWP provides a summary of significant hazardous materials storage areas at MCBQ. Lastly, 40 CFR 112 require facilities with greater than 1,320 gallons of aboveground oil storage capacity and/or 42,000 gallons of underground storage capacity to maintain an SPCC Plan, further described in Section 6.2.

BMPs for managing hazardous materials and storage tanks are detailed in the Facility SOPs for each industrial area as well as the associated SWPPP checklists (provided in the 2011 CSWMP). These SOPs also contain a hazardous material/waste "Significant Material Inventory and Response Strategies" table that documents all storage unit contents, capacities, and secondary containment structures. The following bullets provide some examples of the BMPs documented in the "Hazardous Material Storage" section of several Facility SOPs:

- Lock hazardous material storage shed when not in use.
- Keep the used oil tank secondary containment free of debris.
- Keep drainage valves on secondary containment in the closed position at all times except when discharging.
- Document and visually inspect discharge collection water prior to release from secondary containment.
- Store hazardous material containers on impervious surfaces with containment and cover.
- Maintain neat and orderly storage of hazardous materials with proper spacing for pathways and walkways between containers and drums.
- Properly label all containers.
- Conduct daily visual inspections of the hazardous material storage shed.

Hazardous Waste Storage

MCBQ generates large quantities of hazardous and universal wastes that are stored at satellite accumulation sites. MCBQ has eight (8) satellite accumulation sites, including five (5) sites for less than 90-day storage and three (3) battery sites. The accumulation sites are located in designated areas and provide secondary containment for storage structures in the form of building floors, concrete dikes or berms, or containment pallets. Each site is stocked with appropriate spill response equipment. MCBQ's ECPSOP for hazardous wastes requires all waste storage containers "to be properly labeled, in good condition, compatible with waste being stored, kept closed when not in use, and have adequate [aisle] space." MCBO 6280.1B lists the SOPs for minimizing pollution from satellite accumulation, universal, and 90-day storage sites. MCBQ has also implemented a Hazardous Waste Minimization Program, which utilizes alternative materials, process modifications, employee suggestions, and alternative disposal procedures to reduce the generation of hazardous wastes.

Each industrial site with hazardous waste storage is visually inspected by MCBQ personnel on a daily basis. Inspection procedures are documented in the various Facility SOPs. These SOPs also contain a hazardous material/waste "Significant Material Inventory and Response Strategies" table that documents all storage unit contents, capacities, and secondary containment structures. BMPs implemented at hazardous waste storage sites are similar to those documented in the "Hazardous Material Storage" subsection above.

Hazardous wastes for disposal are transferred to MCBQ's 90-day Hazardous Waste Storage Facility (Building 27401). According to MCBO 6280.1B, only NREAB personnel are authorized to transport hazardous wastes throughout MCBQ. All waste materials are segregated and stored within boxes, cans, or drums with secondary containment, such as berms, floor trench drains, and walls. MCBQ has a contract in place with a disposal company to collect all wastes for off-site disposal.

In addition to hazardous wastes, recyclables, including scrap metal and brass, are stored at MCBQ. Scrap metals are stored in 20-yard or 30-yard roll-off dumpsters at various locations throughout MCBQ. Palletized brass is stored at several locations on MCBQ Westside that are under cover and secured. All other recyclables, including paper, cardboard, and plastics, are stored in single-stream dumpsters located throughout MCBQ. The dumpsters are emptied by contractors. Although solid waste and landscape wastes are generated at MCBQ, they are not stored on-site but disposed of off-site via contractors.

9.2 BMP 6.b: Pollution Minimization or Prevention from Equipment and Vehicle Maintenance

BMP Description: Minimize and prevent pollutant discharge from equipment and vehicle maintenance activities.

Objective / Measurable Goals / Expected Results: Implement regular procedures for minimizing and preventing pollutant discharge from equipment and vehicle maintenance.

Method to Determine BMP Effectiveness: Confirm regular implementation of good housekeeping and pollution prevention procedures during annual CSCEs required by VPDES Permit VA0002151 and MCBQ's 2011 CSWMP.

Implementation Schedule: Ongoing. Provide updates in the annual report, if applicable.

Responsible Party: Facility Environmental Coordinators and NREAB

Implementation Procedures:
MCBQ has designated areas for conducting aircraft, vehicle, and equipment maintenance that are designed and strategically located to prevent or minimize pollution entering the MS4 from maintenance activities. BMPs implemented at these facilities include:

- Wash rack facilities for vehicle and aircraft washing discharge to oil/water separators[44] to remove POLs prior to discharge. Indoor wash rack facilities discharge to the sanitary sewer, and outdoor wash rack facilities discharge to the sanitary sewer only when in use; otherwise, they discharge to the MS4.
- Indoor vehicle and equipment maintenance areas with floor drains discharge to outdoor oil/water separators to remove POLs prior to discharge to the sanitary sewer.
- Several large paved vehicle storage areas drain to stormwater management basins.
- Grading at fuel dispensing areas allows flows to enter oil/water separators.

MCBQ implements several good housekeeping BMPs to prevent or minimize pollution entering the small MS4 from equipment and vehicle maintenance and leaks, which are documented in Facility SOPs (provided in 2011 CSWMP) for industrial sites and include the following:

- Conduct daily walkthroughs of vehicle/equipment maintenance areas to check for leaks.
- Conduct vehicle/equipment maintenance indoors.
- Perform vehicle/equipment/aircraft maintenance in accordance with appropriate manufacturer specifications and unit military specifications.

[44] MCBQ maintains an "Oil/Water Separator Inventory" (Table B-3 of the 2011 CSWMP) that documents the following information for all oil/water separators at the installation: physical location, capacity (gallons), contributing activities and materials, discharge location, initial/ultimate receiving water bodies, and geospatial coordinates.

- Place drip pans or drip pads under vehicles/equipment during maintenance activities.
- Drain fluids from wrecked vehicles and decommissioned equipment prior to storage.
- Store cracked, leaking vehicle batteries in covered secondary containment.
- Wash all government vehicles in designated wash racks and all personal vehicles at commercial car washes.
- Use biodegradable materials for vehicle/equipment wash down.
- Do not overfill vehicle/equipment fluids.
- Manage tanks in accordance with applicable regulations and policies outlined in the PSTMP and SPCC Plan (contained in the 2011 CSWMP).

The 2011 CSWMP also provides SOPs for all car washing activities conducted at MCBQ. MCBQ recommends that all personal vehicles be washed at commercial car wash facilities, which have measures for recycling polluted car wash runoff or directing it to the wastewater treatment plant. For instances in which commercial facilities cannot be used, MCBQ has developed the following procedures to minimize pollution of the stormwater sewer system:

- Approved areas for personal vehicle washing include the local self-serve or commercial car wash facilities.
- Approved areas may also include grassy areas or on other pervious or porous surfaces, such as gravel, so that water can filter through layers before discharging into the ground or where runoff flows overland rather than into a collection system, in the event commercial facilities are not available.
- A mild detergent or biodegradable soap is recommended, or if the vehicle is not too dirty, using just water and a sponge is recommended.
- Using a bucket of water and disposing of the water in a nearby sanitary sewer drain is recommended so that the water will be treated.
- Purchase carwash labeled “environmentally-friendly,” “biodegradable”or“low phosphate.”
- Use detergents with less than 0.5% phosphates.
- Use as little soap as possible.
- Conserve water by using a shut-off nozzle on hoses.
- Do not directly discharge or allow wash water to be indirectly discharged down any storm drain.

9.3 BMP 6.c: Pollution Minimization or Prevention of Pesticides, Herbicides, and Fertilizers

BMP Description: Minimize or prevent pollutant discharge from the application, storage, transport, and disposal of pesticides, herbicides, and fertilizers.

Objective / Measurable Goals / Expected Results: Document and implement protocols for minimizing or preventing pollutant discharge from the application, storage, transport, and disposal of pesticides, herbicides, and fertilizers.

Method to Determine BMP Effectiveness: Confirm implementation of protocols for minimizing or preventing pollutant discharge from the application, storage, transport, and disposal of pesticides, herbicides, and fertilizers to minimize runoff of these pollutants into the stormwater.

Implementation Schedule: Ongoing. Provide updates in annual report.

Responsible Party: NREAB

Implementation Procedures:

Pesticides and Herbicides

MCBQ's IPMP provides guidance for all pesticide and herbicide applications conducted at MCBQ. The primary goal of the IPMP is to ensure all pest management operations and pesticide-related activities at MCBQ are conducted in accordance with local, state, federal and DoD regulations, including DoD Instruction 4150.07[45], MCO 5090.2A, and Office of the Chief of Naval Operations 6250.4C[46]. The IPMP applies to all pesticide/herbicide applications conducted by MCBQ and its tenants, including MCAF, the Medal of Honor Golf Course and other Marine Corps Community Service (MCCS) Facilities, the DOJ campus, and the Commissary. In-house pesticide/herbicide application is authorized only for the Golf Course, Forestry and Wildlife Sections, MCAF, and DOJ campus. In addition, MCBQ's Lincoln Housing and MCCS contract commercial vendors to perform pesticide/herbicide application. All contracts are coordinated and managed through MCBQ's PWB or Tenant Activities Branch. Regardless of whether pesticide/herbicide application is performed by MCBQ personnel or a contractor, the IPMP requires all applicators to be DoD or state-certified.

The NREAB Integrated Pest Management Coordinator (IPMC) is responsible for ensuring applicator certifications are current. The NREAB IPMC also ensures applicators abide by all requirements and procedures stipulated in the IPMP. In addition to IPMP requirements, MCBQ's 2011 CSWMP documents three (3) BMPs regarding pesticide/herbicide application for pollution prevention:

(1) Implement the Base IPMP and Base Nutrient Management Plan (NMP);
(2) Follow EPA label recommendations listed on products; and
(3) Only apply pesticides/herbicides during dry weather conditions.

The IPMP provides a list of EPA- and state-approved pesticides/herbicides that may be used at MCBQ. All vehicles used for pesticide/herbicide applications are equipped with spill kits. In addition to following EPA labels, efforts are taken to minimize application of pesticides/herbicides on paved surfaces. For pesticides/herbicides applied by certified MCBQ personnel, the products are mixed at the application site in

[45] Document available at: http://www.dtic.mil/whs/directives/corres/pdf/415007p.pdf.
[46] Document available at: http://www.med.navy.mil/sites/nepmu5/Documents/EDNT/15-OPNAVINST%206250.4C(11APR12).pdf.

closed or oversized containers to prevent spillage and application is conducted immediately after mixing. All products are stored in appropriate containers affixed with hazmat labels in hazardous material storage sheds (as described in Section 9.1). MCBQ does not dispose of any pesticide/herbicide products on-site; a contractor provides for off-site disposal of hazardous materials as needed. For pesticides/herbicides applied by contractors, all products are pre-mixed off-site and transported to the installation. Contractors must also report pesticide/herbicide usage information, including total acres treated and products used, to the IPMC. The IPMC is responsible for reporting all pesticide/herbicide management information to Naval Facilities Engineering Command on a monthly basis.

Fertilizers

In-house fertilizer application is authorized only for MCBQ's Medal of Honor Golf Course. The fertilizer applied to the Golf Course is primarily composed of phosphorous and nitrogen. The Golf Course Managers applies fertilizer only in dry weather conditions and according to EPA label recommendations. Efforts are taken to minimize accidental application of fertilizers on paved surfaces. Fertilizer application for Lincoln Housing and the Museum are conducted by contractors.

9.4 BMP 6.d: Update Existing Industrial SWPPP Regularly

BMP Description: Update industrial SWPPP regularly and identify all municipal high-priority facilities as part of SWPPP. Maintain and implement a SWPPP for each high-priority facility owned or operated by MCBQ with a high potential to discharge pollutants.

Objective / Measurable Goals / Expected Results: Review and update the existing industrial SWPPP and all municipal high-priority facilities regularly.

Method to Determine BMP Effectiveness: Ensure that the industrial SWPPP and all municipal high-priority facilities are updated regularly. Confirm that each Environmental Coordinator and high-priority facility has a copy of the most updated SWPPP and is utilized as part of staff training. Confirm that those high-priority facilities with high potential of discharging pollutants have been identified and evaluate whether the SWPPP includes all of the facilities identified through this process.

Implementation Schedule: Ongoing. Provide updates in the annual report.

Responsible Party: NREAB

Implementation Procedures: A high-priority facility is owned or operated by the permittee that actively engaged in the following activities: (i) composting facilities, (ii) equipment storage and maintenance facilities, (iii) materials storage yards, (iv) pesticide storage facilities, (v) public works yards, (vi) recycling facilities, (vii) salt

storage facilities, (viii) solid waste handling and transfer facilities, and (ix) vehicle storage and maintenance yards.

No later than June 30 of each year, MCBQ shall review any high-priority facility owned or operated by MCBQ for which a SWPPP has not been developed to determine if the facility has a high potential to discharge pollutants. If determined to be a high-priority facility with a high potential to discharge pollutants, MCBQ shall develop a SWPPP meeting the requirements specified in Section I E 6 d of the Permit no later than December 31 of that same year.

MCBQ shall review the contents of any site specific SWPPP no later than 30 days after any unauthorized discharge, release, or spill reported to determine if additional measures are necessary. If necessary, the SWPPP shall be updated no later than 90 days after the unauthorized discharge.

The SWPPP shall be kept at the high-priority facility so that it is available to employees and it shall be utilized as a part of required staff training.

If activities change at a facility so that it no longer meets the criteria of a high-priority facility, MCBQ may remove it from the list.

MCBQ developed an SWPPP in 2011 (contained in the 2011 CSWMP) for implementation at all industrial sites as required by Permit VA0002151 and MS4s as required by VAR040069. As part of 2017-2018 (Permit Year 5) stormwater management program, the SWPPP is being revised. The SWPPP details the potential pollutant sources at each site as well as the corresponding good housekeeping and pollution prevention BMPs conducted at each site. This information is also documented in more detail in the Facility SOPs provided in the SWPPP. The SWPPP and associated Facility SOPs (contained in the 2011 CSWMP) are housed with the appropriate Environmental Coordinators (ECs) for the various industrial sites and education on the SWPPP content is provided via website and classroom training, which will be discussed further in Section 9.7.

According to the 2011 SWPPP and current SWPPP update, MCBQ has identified the industrial activities conducted on base that most significantly contribute to the contamination of stormwater discharges, which include the following:

- Aircraft/vehicle maintenance, wash down, and fueling.
- Hazardous material outdoor storage.
- Hazardous/solid waste outdoor storage.
- Pesticide/herbicide/fertilizer application.
- Water/wastewater treatment operations.

Based on the activities conducted at each site, MCBQ annually ranks all industrial sites as high, medium, or low priority. The history of violations at each site and the location of the site in an RPA or sensitive area are also considered when assigning site

rankings. The following list summarizes the criteria considered when assigning priority rankings (from Table 4-1 in 2011 CSWMP):

- **High Priority Ranking**: History of non-compliance with Permit No. VA0002151 in previous year(s) or location in a significant sensitive area with a medium to high amount of outdoor activity that could cause stormwater pollution.
- **Medium Priority Ranking:** No recent history of noncompliance, not in a sensitive area, and very little outdoor activity that could cause stormwater pollution.
- **Low Priority Ranking:** No history of noncompliance, not in a sensitive area, little to no outdoor activity that could cause stormwater pollution.

MCBQ maintains a list of all high-priority facilities that identifies those facilities that have a high potential for chemicals or other materials to be discharged in stormwater and a schedule that identifies the year in which an individual SWPPP will be developed for those facilities required to have a SWPPP. MCBQ shall determine whether or not the facility has a high potential to discharge. If activities at the facility change and it no longer meets the criteria of a high-priority facility, it may be removed from the list.

MCBQ maintains an inventory of all sites, their rankings, and associated hazardous materials used at the site in the 2011 SWPPP (Table B-4: Significant Hazardous Materials Inventory & Site Rankings). All sites are re-evaluated during SWPPP updates to determine if their ranking should be changed.

MCBQ has developed SOPs that are specific for each industrial site at MCBQ. The Facility SOPs are provided in the 2011 SWPPP and are available at all industrial sites. The SOPs include the following information:

- Facility Operations (routine activities conducted at each facility)
- Emergency Incident Notifications (contact information)
- Facility Contact(s)
- Spill Pathway (potential receiving water body)
- Spill Response Equipment and Materials
- Source Control Procedures
- Significant Material Inventory and Response Strategies
- BMPs (applicable to all facility activities)
- Stormwater Pollution Prevention Inspection Checklist

MCBQ has also organized a Stormwater Pollution Prevention Team (SWPPT) as required by VA0002151. The purpose of the SWPPPT is to assist in the implementation, evaluation, and revision of the SWPPP. The SWPPT also ensures all BMPs specified in the SWPPP and Facility SOPs are implemented appropriately at each industrial site.

9.5 BMP 6.e: Good Housekeeping and Pollution Prevention Inspections

BMP Description: Conduct regular good housekeeping and pollution prevention inspections.

Objective / Measurable Goals / Expected Results: Conduct informal, quarterly, and annual good housekeeping and pollution prevention inspections.

Method to Determine BMP Effectiveness: Document CSCE good housekeeping and pollution prevention inspection results and corrective actions, if applicable. Confirm that corrective actions were implemented.

Implementation Schedule: Ongoing. Provide updates in annual report.

Responsible Party: NREAB

Implementation Procedures:
MCBQ conducts a variety of inspections to ensure all good housekeeping and pollution prevention BMPs specified in the 2011 CSWMP are implemented properly base-wide. The following sections provide details on the types of inspections conducted at MCBQ.

Informal Inspections
According to MCBQ's *SOP Tier 3: Pollution Prevention/Good Housekeeping*,[47] the NREAB WPM is responsible for conducting periodic inspections of base areas to ensure personnel are following stormwater pollution prevention and good housekeeping procedures. These inspections are performed on an as-needed basis and consist of drive-by visual evaluations of base areas.

MCBQ personnel at high- and medium-ranked industrial sites are also required to perform informal inspections of work areas as part of routine activities. The frequency and goals of these inspections vary according to the work center, but generally include visual inspections of hazardous material/waste storage areas, equipment storage areas, and monitoring for other potential pollutants that may enter the storm sewer system.

Quarterly Equipment Inspections
Quarterly equipment inspections are conducted for all high- and medium-ranked industrial sites identified in MCBQ's 2011 CSWMP. The purpose of the inspections is to ensure all on-site equipment is working properly without leaks. The inspections are conducted by site managers in accordance with the "Stormwater Pollution Prevention Inspection Checklist" provided in each Facility SOP. If the inspection finds equipment that is not working properly, the equipment must be repaired or replaced and any associated spills must be immediately addressed by the inspector or

[47] Marine Corps Base Quantico, *Standard Operating Procedure Tier 3: Pollution Prevention/Good Housekeeping, Comprehensive Stormwater Management Action Plan*. April 2011.

work area personnel. Inspection results for all industrial sites are faxed to the NREAB WPM. Annual CSCEs (described below) may be conducted in lieu of one quarterly equipment inspection per calendar year.

Annual Comprehensive Site Compliance Evaluations

Annual CSCEs are conducted at all high- and medium-ranked industrial sites at MCBQ. The inspections are performed by the SWPPP Team Leader (NREAB WPM). All documentation regarding the annual CSCEs, including forms and procedures, is provided in the 2011 CSWMP. In general, the annual CSCEs consist of the following tasks:

- Inspection of areas contributing to stormwater pollution for the presence of, or potential for, pollutants entering the stormwater system.
- Inspection of emergency response equipment and supplies.
- Evaluation of structural stormwater BMPs, E&SC measures, and other BMPs identified in the 2011 CSWMP.
- Evaluation of the appropriateness of the BMPs to reduce pollutant loadings.
- Development of an inspection summary report.

The annual CSCEs typically consist of a drive-by (visual) inspection of all sites. Once the inspection has been completed, the following information is documented on the "Comprehensive Site Compliance Evaluation form"[48]:

- Scope of the evaluation.
- Name of the evaluator.
- Date of evaluation.
- Major observations (related to CSWMP implementation).
- Instances of non-compliance with the CSWMP.
- Description of corrective actions taken in response to instances of non-compliance.
- Certification of no instances of non-compliance (confirming MCBQ is in compliance with CSWMP and stormwater permit).

Once the inspection has been completed, each site receives a copy of the inspection summary report. If non-compliance issues were found during the inspection, these findings and the recommended corrective actions are documented in the inspection summary report. A Warning Letter or NOV is also issued to the EC stipulating that the site has a 14-day period for addressing non-compliance findings. A follow-up inspection is conducted by the SWPPT Leader within 30-45 days of the initial inspection to determine if all non-compliance findings have been addressed. If not addressed, Warning Letters and NOVs are elevated to command level. Table **8. Annual CSCE Inspection Discrepancies and Responses** 8 summarizes non-compliance issues that may be noted during an inspection, and the response issued by the SWPPT Leader.

[48] Marine Corps Base Quantico, Appendix G: Comprehensive Site Compliance Evaluation, *Comprehensive Storm Water Management Action Plan*, October 2011.

Table 8. Annual CSCE Inspection Discrepancies and Responses

Non-Compliance Finding	Response
Good Housekeeping Issues	
First Offense	Report of findings and recommended corrective actions
Second Offense	Warning Letter
Third Offense	NOV
SOP Not Posted On-Site	
First Offense	Report of findings and recommended corrective actions
Second Offense	Warning Letter
Third Offense	NOV
Internal Audit	
Not turned in for one quarter	Warning Letter
Not turned in for two consecutive quarters	NOV
Training Not Completed by End of Calendar Year	NOV
SWPPP Not Kept On-Site	NOV

9.6 BMP 6.f: Nutrient Management Planning

BMP Description: Conduct nutrient management planning for all applicable lands where nutrients are applied to a contiguous area of more than one (1) acre.

Objective / Measurable Goals / Expected Results: Develop and maintain turf and landscape NMPs for all identified lands where nutrients are applied to a contiguous area of more than one (1) acre. If nutrients are being applied to achieve final stabilization of a land disturbance project, application shall follow the manufacturer's recommendations.

Method to Determine BMP Effectiveness: Ensure that turf and landscape NMPs are updated in accordance with the identified lands where nutrients are applied to areas more than one (1) acre in size.

Implementation Schedule: Update existing NMPs prior to plan expiration. Develop NMPs for new areas on which nutrients are applied to more than one (1) acre in size as these areas are identified.

Responsible Party: NREAB, Golf Course, and Lincoln Housing

Implementation Procedures:

MCBQ has identified all applicable lands where nutrients are applied to a contiguous area of more than one (1) acre. MCBQ shall include a total acreage on which nutrients are applied, the date of the most recently approved nutrient management plan for the property, the location in which the individual turf and landscape NMP is located, a summary of the mechanisms used to ensure contractors are implementing good housekeeping and pollution prevention procedures, and a written training plan.

Currently, it is known that within the regulated MS4 portion of MCBQ, nutrients are applied to approximately 34 acres at the Golf Course and 186 acres at Lincoln Housing Areas, although the exact parcel sizes of nutrient applications at those locations is currently unknown. MCBQ has developed a comprehensive turf and landscape NMP for the Golf Course, which has been approved by the Virginia Department of Conservation and Recreation (DCR) and is included in this MS4 program plan as Appendix B. Although nutrients are only approved to approximately 34 acres at the Golf Course, the Golf Course may choose to fertilize the entire 149 acres in the future, so the NMP provided recommendations for nutrient application to the full 149 acres.

A turf and landscape NMP is currently being developed for the Lincoln Housing Areas and will be submitted to DCR by a certified nutrient management planner (CNMP) prior to the expiration of the current 2013-2018 Small MS4 Permit in June 2018. Table 9 identifies the total acreage where turf and landscape NMPs are required and the total acreage where turf and landscape NMPs have been implemented thus far.

Table 9. Nutrient Management Tracking Table

Area where turf and landscape NMPs is required	Acreage (acres)	Implemented
Golf Course	149 acres (turf and landscape)	149 acres
Lincoln Housing	186 acres (turf)	0 acres[1] (current) 186 acres (by April 2019)
TOTAL	335 acres	149 acres (current) 335 acres (by April 2019)

Note: [1]. The Lincoln Housing Area NMP will be developed and implemented by 30 April 2019.

9.7 BMP 6.g: Employee and Contractor Training Schedule and Program

BMP Description: Ensure that all contractors employed by the permittee and engaging in activities with the potential to discharge pollutants use appropriate control measures to minimize the discharge of pollutants to the MS4.
Objective / Measurable Goals / Expected Results: Conduct and ensure regular training for all applicable employees and contractors in compliance with the Small MS4 Permit as described in Section 9.1

Method to Determine BMP Effectiveness: Utilize contract language, training, and standard operating procedures to ensure that contractors employed by the permittee use appropriate control measures.

Implementation Schedule: Ongoing. Provide updates in the annual report.

Responsible Party: NREAB

Implementation Procedures:
Training requirements for MCBQ personnel are provided in the 2011 CSWMP. The NREAB WPM oversees the Employee Training Program at MCBQ. Within 90 days of hire and on an annual basis, all employees are required to complete a general stormwater and environmental awareness training that is available via Microsoft PowerPoint® on the NREAB website[49]. The training can be conducted in the classroom by the NREAB WPM or online by individual participants. This training provides background information on stormwater and an overview of common stormwater pollutants at MCBQ.

The NREAB WPM also conducts two (2) types of SWPPP training for employees:

(1) Annual training on SWPPP contents for high-ranked industrial sites; and
(2) Quarterly training on construction site SWPPP contents for new construction managers and RLDs.

The NREAB WPM provides training to ECs responsible for all high-ranked industrial sites at MCBQ. As described in Section 9.4, industrial sites with high rankings include those with a "history of non-compliance with VPDES Permit No. VA0002151 in the previous year(s) or [that are located] in a significant sensitive area with a medium to high amount of outdoor activity that could cause storm water pollution." Once the NREAB WPM has completed annual training with the site-specific ECs, the ECs, in turn, train the industrial site personnel. The overall goals of the industrial site training are to teach site personnel the components and goals of the site's SWPPP and to minimize the occurrence and extent of spills that may occur on-site. The training consists of a review of the site SWPPP with an emphasis on pollutant source identification and spill prevention and response measures pertaining to specific, assigned work areas. Highlighted topics include, but are not limited to Good Housekeeping, Materials Management, and Spill Prevention and Response Procedures.

The specific training content and requirements vary depending upon the site at which training is administered. For example, Fire Department personnel are required to complete annual HAZWOPER and spill response training, and employees at the Golf

[49] Available at: http://www.quantico.marines.mil/LinkClick.aspx?fileticket=K4nEbU6ByEE%3d&tabid=20836&portalid=147&mid=46642.

Course receive training on good housekeeping and pollution prevention practices that are specific to recreational facilities. Table 10. MCBQ Personnel Training as Required by the Small MS4 Permit10 provides a summary of the training provided to various MCBQ personnel as required by the Small MS4 permit.

Table 10. MCBQ Personnel Training as Required by the Small MS4 Permit

Training Requirement	Training Description	Frequency of Training	Training Recipients
Recognition and reporting of illicit discharges	General stormwater and environmental awareness training conducted online or via presentation by the NREAB WPM.	New employees receive within 90 days of hire; existing employees receive no less than once per 24 months.	All employees
Good housekeeping and pollution prevention practices employed during road, street, and parking lot maintenance			
Good housekeeping and pollution prevention practices employed in and around maintenance and public works facilities	NREAB WPM trains EC for each industrial site. EC trains all site personnel.	No less than once per 24 months	All industrial site personnel.
Good housekeeping and pollution prevention practices employed in and around recreational facilities	General stormwater and environmental awareness training conducted online or via presentation by the NREAB WPM.	New employees receive within 90 days of hire; existing employees receive annually.	All employees, including recreational facility personnel
Pesticide and herbicide applicator training and/or certification	DoD or Virginia certification program	Certification renewed every two years	Pesticide/herbicide applicators
Spill response training for emergency response employees	Spill response and hazardous waste operations and emergency response	Annually	Fire Department personnel

Table 10. MCBQ Personnel Training as Required by the Small MS4 Permit (continued)

Training Requirement	Training Description	Frequency of Training	Training Recipients
Training and certification for contractors serving as construction site permittees required under VESCL	Construction SWPPP training conducted by the NREAB WPM	Quarterly	Construction managers, site superintendents, and RLDs
	RLD training and certification from DEQ	Required every three years	RLDs
Training and certification for employees serving as plan reviewers, inspectors, and program administrators required under VESCL	Certification via VA-state certification program.	Certification via VA-state certification program.	Certification via VA-state certification program.

The NREAB WPM also provides online stormwater awareness training to new construction managers and RLDs for construction projects at MCBQ. The training is conducted on a quarterly basis in a classroom setting via a Microsoft PowerPoint® Presentation. The training focuses on the review of the required SWPPP contents developed specifically for the construction projects.

The NREAB WPM maintains records of all training conducted by MCBQ employees, tenants, and contractors. Typically, the NREAB WPM or industrial site ECs will notify employees of training requirements via e-mail. Sign-in sheets are provided at each training session and are electronically filed by the NREAB WPM at the completion of training. Training records are kept by the NREAB WPM for an indefinite period of time. For industrial sites, the site EC is responsible for tracking training completion by applicable employees on an annual basis. If training is not completed by all employees at the industrial site by the end of the calendar year, the NREAB or EC may issue an NOV for the site.

9.8 BMP 6.h: Ensure Contractors Use Control Measures and Procedures

BMP Description: Require that contractors use appropriate control measures and procedures for stormwater discharges to the MS4 system.

Objective / Measurable Goals / Expected Results: Document requirements for contractors use appropriate control measures and procedures for stormwater discharges to the MS4 system. Document oversight procedures.

Method to Determine BMP Effectiveness: Evaluate whether contractors are using appropriate control measures and procedures for stormwater discharges to the MS4 system.

Implementation Schedule: Ongoing. Update in the annual report.

Responsible Party: NREAB and FEAD Director

Implementation Procedures:
MCBQ incorporates standard stormwater compliance language into all contracts to address appropriate control measures and procedures for stormwater discharges to the MS4 system. The following is example contract language that meets this requirement: "The Contractor shall provide and maintain during the life of the contract environmental protection measures that will control pollution which may develop during project activity. Any areas disturbed or damaged during the performance of the fieldwork shall be restored to original condition by the Contractor at no cost to the Government. Any digging or disturbance of soil requires a dig permit to be applied for and approved. NEPA documentation shall also be completed prior to any digging."

As detailed in Section 7.0 (MCM 4: Construction site and Stormwater Runoff Control), MCBQ requires contractors to utilize and describe appropriate control measures and procedures to address discharges to the MS4 system from construction site activities. MCBQ incorporates standard stormwater compliance language into all construction designs and construction-related contracts (Section 7.1). To ensure contractors are in compliance with this requirement, the NREAB WPM conducts construction site inspections at least every fourteen (14) days and within 48 hours of the end of a storm event resulting in 0.5 inches of rainfall or greater. During the inspection, the NREAB WPM ensures proper E&SC and stormwater pollution prevention measures and controls have been implemented at the site. Oversight procedures are documented throughout Section 7.0 and in the Application & Design Guidance (Appendix A).

9.9 BMP 6.i: Pollution Prevention and Good Housekeeping Written Procedures

BMP Description: Develop written good housekeeping and pollution prevention protocols for daily municipal operations and maintenance that are compliant with Section I E 6 of the MS4 General Permit.

Objective / Measurable Goals / Expected Results: Written good housekeeping and pollution prevention protocols for daily municipal operations and maintenance.

Method to Determine BMP Effectiveness: Ensure that good housekeeping and pollution prevention protocols are compliant with the MS4 General Permit.

Implementation Schedule: Completed by the end of Permit Year.

Responsible Party: NREAB

Implementation Procedures: Create list of completed procedures and staff training done to implement them.

10.0 ADMINISTRATION SPECIAL CONDITIONS BMPS

10.1 Evaluate Effectiveness of Program and TMDL BMPs

BMP Description: Evaluate Effectiveness of the MS4 program plan and TMDL BMPs.

Objective / Measurable Goals / Expected Results: Ensure that all program and TMDL BMPs are achieving the objectives intended to correct identified deficiencies and/or inefficiencies.

Method to Determine BMP Effectiveness: Each program BMP will be evaluated annually via quantitative or qualitative methodologies, per the nature of the established BMP metric to determine its effectiveness in achieving its stated objective, with recommendations for continuance or revision provided.

Implementation Schedule: Completed by the end of Permit Year.

Responsible Party: NREAB

Implementation Procedures:
Create evaluation/critique report.

10.2 Update Chesapeake Bay TMDL Action Plan for Quantico

BMP Description: Submit an updated Chesapeake Bay TMDL Action Plan that meets the requirements of the Chesapeake Bay TMDL Special Condition of the 2018-2023 MS4 Permit.

Objective / Measurable Goals / Expected Results: Complete and submit Action Plan. Include in Action Plan the requirements of the MS4 General Permit for nitrogen, phosphorus, and sediment and reductions required as well as a strategy to achieve these reductions.

Method to Determine BMP Effectiveness: Assess effectiveness in reducting the pollutants identified in the reduction requirements as described in Action Plan.

Implementation Schedule: Submit an updated Chesapeake Bay TMDL Action Plan no later than November 1, 2019.

Responsible Party: NREAB

Implementation Procedures:
MCBQ developed and submitted to DEQ a Draft Chesapeake Bay TMDL Action Plan to meet the 40% pollutant of concern removal requirements and submit the plan to VDEQ for review and acceptance with the Permit Reissuance application. This Action

Plan complies with requirements set forth in the MS4 Permit effective 2013-2018 and the most recent version of the DEQ Guidance Memo No. 15-2005 Chesapeake Bay TMDL Special Condition Guidance, dated May 18, 2015.

Per the MS4 Permit effective 2018-2023, MCBQ is required to develop a revised Draft Chesapeake Bay TMDL Action Plan to meet the 40% pollutant of concern removal requirements and submit to DEQ within 12 months of permit coverage. This revised plan should document the following:

- new or modified legal authorities; load calculations; total reductions achieved as of July 1, 2018;
- details of BMPs implemented prior to July 1, 2018; details of BMPs to be implemented prior to
- expiration of the new MS4 Permit; and a summary of the public comment period comments,
- responses, and revisions.

DEQ is expected to release a new Chesapeake Bay TMDL Special Condition Guidance Memo in late 2018 or early 2019. This Guidance Memo will provide detailed direction on the revision of Draft Chesapeake Bay TMDL Action Plans. Upon release of the DEQ TMDL Action Plan Guidance Memo, MCBQ will evaluate MCBQ's Draft Chesapeake Bay TMDL Action Plan for compliance. If revisions are necessary to comply, MCBQ will revise its TMDL Action Plan and resubmit to DEQ for review.

10.3 Develop and Implement the Local TMDL Action Plan for Quantico

BMP Description: Develop and implement a local TMDL Action Plan that meets requirements of the MS4 General Permit.

Objective / Measurable Goals / Expected Results: Complete and submit Action Plan designed to reduce loadings for pollutants of concern (POCs) for any WLAs assigned to MCBQ for which a TMDL Action Plan is required.

Method to Determine BMP Effectiveness: Assess effectiveness in reducting the pollutants identified in the WLAs as described in Action Plan.

Implementation Schedule: As of the date of this MS4 program plan, no EPA-approved TMDLs require MCBQ to develop a Local TMDL Action Plan. If an EPA-approved TMDL is published after the date of this MS4 program plan and requires MCBQ to develop a TMDL Action Plan, MCBQ will coordinate with DEQ to identify a deadline to submit a TMDL Action Plan. The 2018-2023 MS4 Permit does not identify a deadline to submit Local TMDL Action Plans for TMDLs approved by EPA after June 30, 2018.

Responsible Party: NREAB

Implementation Procedures:
As of the date of the MS4 program plan, only one local EPA-approved TMDL identifies the MCBQ MS4 as an entity discharging to the impaired water of concern: *Total Maximum Daily Loads of Polychlorinated Biphenyls (PCBs) for Tidal Portions of the Potomac and Anacostia Rivers in the District of Columbia, Maryland, and Virginia*, revised date October 31, 2007.

The MS4s identified in the Potomac River Watershed PCB TMDL (EPA approved 10/31/07 and SWCB approved 4/11/08), including the MCBQ MS4, are subject to a WLA and required to submit a local action plan if they are identified as having:

1. permitted jurisdictions within a direct drainage watershed; and
2. a WLA greater than a 5% reduction, as that 5% is the explicit margin of safety (MOS).

In 2015, DEQ identified permittees expected to submit a local TMDL action plan in accordance with the MS4 Permit requirements. During this review, DEQ identified that VAR040069 (US Marine Corps Base Quantico) was within a direct drainage watershed but with a 5% reduction, which falls into the MOS. Consequently, MCBQ is not required to submit a Local TMDL Action Plan associated with this TMDL.

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11.0 MS4 ANNUAL REPORTING REQUIREMENTS

The Small MS4 Permit includes annual reporting requirements throughout the permit. This section serves to consolidate and summarize the annual reporting requirements applicable to MCBQ to facilitate completeness of annual reports. Annual reports are required to address the reporting period of 01 July through 30 June and to be submitted to VDEQ by 1 October following the reporting period.

MCM 1: Public Education and Outreach

Section I E 1 g of the Small MS4 Permit states that "the annual report shall include the following information:

(1) A list of the high-priority stormwater issues the permittee addressed in the public education and outreach program; and
(2) A list of the strategies used to communicate each high-priority stormwater issue."

MCM 2: Public Involvement and Participation

Section I E 2 f of the Small MS4 Permit states that "annual report shall include the following information:

(1) Summary of any public input on the MS4 program received and how the permittee responded;
(2) A webpage link to the permittee's MS4 program and stormwater website;
(3) A description of the public involvement activities implemented by the permittee;
(4) A report of the metric as defined for each activity and an evaluation as to whether or not the activity is beneficial to improving water quality; and
(5) The name of other MS4 permittees who participated in the public involvement opportunities."

MCM 3: Illicit Discharge Detection and Elimination

Section I E 3 e of the Small MS4 Permit states that the "annual report shall include:

(1) A confirmation statement that the MS4 map and information table are up-to-date as of June 30 of the reporting year;
(2) The total number of outfalls screened during the reporting period as part of the dry weather screening program; and
(3) A list of discharges to the MS4 including spills reaching the MS4 with information as follows:
    - The source of illicit discharge;
    - The date that the discharge was observed, reported, or both;

- Whether the discharge was discovered by the permittee during dry weather screening, reported by the public, or other method (describe);
- How the investigation was resolved;
- A description of any follow-up activities; and
- The date the investigation was closed."

MCM 4: Construction Site Stormwater Runoff Control

Section I E 4 c of the Small MS4 Permit states that "the annual report shall include the following:

(1) If the permittee implements a construction site stormwater runoff program in accordance with Section I E 4 a (3);
- A confirmation statement that land disturbing projects that occurred during the reporting period have been conducted in accordance with the current department approved standards and specifications for erosions and sediment control; and
- If one or more of the land disturbing projects were not conducted with the department approved standards and specifications, an explanation as to why the projects did not conform to the approved standards and specifications.

(2) Total number of inspections conducted; and

(3) The total number and type of enforcement action implemented and the type of enforcement actions."

MCM 5: Post-Construction Stormwater Management for New Development and Development on Prior Developed Lands

Section I E 5 e of the Small MS4 Permit states that "annual report shall include the following information:

(1) Total number of inspections conducted on stormwater management facilities owned or operated by the permittee;

(2) A description of the significant activities performed on the stormwater management facilities owned or operated by the permittee to ensure it continues to perform as designed. This does not include activities such as grass mowing or trash collection;

(3) A confirmation statement that the permittee submitted stormwater management facility information through the Virginia Construction Stormwater General Permit database for those land disturbing activities for which the permittee was required to obtain coverage under the General VPDES Permit for Discharges of Stormwater from Construction Activities in accordance with Section I E 5 f or a statement that the permittee did not complete any projects requiring coverage under the General VPDES Permit for Discharges of Stormwater from Construction Activities; and

(4) A confirmation statement that the permittee electronically reported BMPs using the DEQ BMP Warehouse in accordance with Section I E 5 g and the date on which the information was submitted."

MCM 6: Pollution Prevention and Good Housekeeping for Facilities Owned or Operated by the Permittee

Section I E 6 g of the Small MS4 Permit provides annual reporting requirements, which consist of:

(1) A summary of any daily operational procedures developed or modified in accordance with Section I E 6 a during the reporting period;
(2) A summary of any new SWPPPs developed in accordance Section I E 6 c during the reporting period;
(3) A summary of any SWPPPs modified in accordance with Section I E 6 f during the reporting period;
(3) A summary of any new turf and landscape nutrient management plans developed that includes:
- Location and total acreage of each land area; and
- The date of the approved nutrient management plan; and

(4) A list of the training events conducted in accordance with Section I E 6 m, including the following information:
- The date of the training event;
- The number of employees who attended the training event; and
- The objective of the training event."

TMDL: Chesapeake Bay

Section II A of the Small MS4 Permit lists the following annual reporting requirements:

(1) A list of BMPs implemented during the reporting period but not reported to the DEQ BMP Warehouse in accordance with Section I E 5 g of the General Permit and the estimated reduction of pollutants of concern (POCs) achieved by each and reported in pounds per year;
(2) If the permittee acquired credits during the reporting period to meet all or a portion of the required reductions in Section II A 3, A 4, or A 5 of the Permit, a statement that credits were acquired; Each subsequent annual report shall include a list of control measures implemented during the reporting period and the cumulative progress toward meeting the compliance targets for nitrogen, phosphorus, and total suspended solids.
(3) The progress, using the final design efficiency of the BMPs, toward meeting the required cumulative reductions for total nitrogen, total phosphorus, and total suspended solids;
(4) A list of BMPs that are planned to be implemented during the next reporting period.

TMDL: Local

For each reporting period, each annual report shall include a summary of actions conducted to implement each local TMDL action plan, if any apply to MCBQ. As of the date of this MS4 Program Plan (December 2018), MCBQ is not required to develop any Local TMDL Action Plans.

APPENDIX A

Erosion & Sediment Control, Storm Water Pollution Prevention and Low Impact Development on MCB Quantico Application & Design Guidance

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APPENDIX B

Medal of Honor Golf Course Nutrient Management Plan

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APPENDIX C

Summary of MS4 Program Plan Reviews and Updates

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Table C-1. MS4 Program Plan Review Log

Date of Review	Review Conducted By	Summary of Updates Made and Justification of Revisions	Date of Updates	Updates Conducted By
2016	Rasco Inc.	Annual updates to MS4 Program Plan	May 2016	Rasco Inc.
Dec 2017 – Jan 2018	CDM-AECOM JV	Updates to MS4 Program Plan based on annual program updates and new BMPs implemented as part of MCBQ's stormwater program.	Jan 2018	Alaina Armel/Jennifer Solakian/Alicia Cooley (AECOM)
March 2018	CDM-AECOM JV	Updates to MS4 Program Plan based on comments from MCBQ and the General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems General Permit Number VAR040069, issued November 1, 2018.	Decmber 2018	Alaina Armel/Alicia Cooley/Jennifer Solakian (AECOM)

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