



**DEPARTMENT OF THE ARMY**  
**US ARMY INSTALLATION MANAGEMENT COMMAND**  
**HEADQUARTERS, UNITED STATES ARMY GARRISON, FORT BELVOIR**  
**9820 FLAGLER ROAD, SUITE 213**  
**FORT BELVOIR, VIRGINIA 22060-5928**

REPLY TO  
ATTENTION OF

Directorate of Public Works

SEP 30 2015

Mr. Bryant Thomas, Water Permits Manager  
DEQ Northern Regional Office  
13901 Crown Court  
Woodbridge, Virginia 22193

Dear Mr. Thomas:

Enclosed is the Annual Report for the Fort Belvoir MS4 Permit (Permit #VAR040093) for the reporting period July 1, 2014 – June 30, 2015, the revised MS4 Program Plan and the Delegation of Signature Authority is enclosed.

"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."

Point of contact (POC) is Mr. Felix M. Mariani, Chief, Environmental and Natural Resources Division, at 703-806-3193 or email: [felix.m.mariani3.civ@mail.mil](mailto:felix.m.mariani3.civ@mail.mil). Technical POC is Ms. Pamela Couch, Stormwater Program Manager, Environmental and Natural Resources Division, at 703-806-3406 or email: [pamela.j.couch2.civ@mail.mil](mailto:pamela.j.couch2.civ@mail.mil).

Sincerely,

  
Bill Sanders  
Director

Enclosures

**VIRGINIA POLLUTANT DISCHARGE ELIMINATION SYSTEM (VDPES)  
SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4) PERMIT  
FORT BELVOIR ANNUAL REPORT  
JULY 1, 2014 – JUNE 30, 2015**

Information provided in this annual report is provided as specified in the “Annual Report Components” provided by Virginia Department of Environmental Quality via email on July 6, 2015.

**A. Background Information (9VAC25-890-40, E.3.a)**

**1. Name and permit number of the program submitting the annual report:**

US Army, Fort Belvoir, Virginia  
MS4 Permit Number VAR040093

**2. Annual Report Year:** July 1, 2014 – June 30, 2015

**3. Modifications to any operator’s department’s roles and responsibilities:** NONE

**4. Number of new MS4 outfalls and associated acreage by HUC added during the permit year:** There was one new outfall added during the reporting period July 1, 2014 – June 30, 2015. See Table 1.

Table 1. New MS4 Outfalls (July 1, 2014 – June 30, 2015)				
Outfall ID per plan	Approximate Latitude & Longitude	VAHU6 Code	Contributing Area (Acreage)	Comments
1/C3.06	38°44'15"N 77°09'15"W	PL27 Dogue Creek Watershed;	1.11	Fort Belvoir still needs to assign an MS4 Structure ID to this outfall.

**5. Signed Certification:** *"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."*



Bill Sanders  
Director

30 Sep 15  
Date

VAR0040093  
MS4 Permit Number

Fort Belvoir  
MS4 Name

Outfall ID per plan	Approximate Latitude & Longitude	VAHUS Code	Contributing Area (Acres)	Comments
VC3.06	38°44'12"N 109°12'W	PL37 Dogue Creek Watershed	1.11	Fort Belvoir still needs to assign an MS4 Structure ID to this outfall.

## B. Minimum Control Measure Implementation

### 1. MCM1 – Public Education and Outreach

- a. **Permit Section II.B.1.g(1): A list of education and outreach activities conducted during the reporting period for each high-priority water quality issue, the estimated number of people reached and an estimated percentage of the target audience or audiences that will be reached.** Five education and outreach activities were conducted during the reporting period July 1, 2014 – June 30, 2015. See Table 2 for a list of activities conducted. Supporting documentation (newspaper articles, resident responsibility guide and brochures) is available upon request.

**Table 2. Education and Outreach Activities (July 1, 2014 – June 30, 2015)**

Date	Water Quality Issue	Communication Media Used	Estimated Number of people reached	Matrix Assumptions	Estimated % of target audience reached
2014/2015	Sediment, nutrients, bacteria	Print Media; <i>The Villages at Fort Belvoir Resident Responsibility Guide</i>	3,321	Housing residential population = 8,200 with an average occupancy rate of 90% and turnover rate of 45% annually = 3,321 . Each new resident receives a copy of this guide.	3,321/3,321 = 100%
9/11/14	Sediment, nutrients, bacteria	Print Media; Newspaper - <i>Belvoir Eagle</i>	19,000	Total number of newspapers printed/circulated = 19,000 with a population of 50,508 (Fort Belvoir Main, Fort Belvoir North Area and Housing Residents)	19,000/50,508 = 38%
11/13/14	Sediment, bacteria, nutrients	Print Media; Fort Belvoir Elementary School Career Day; See BMP 1.3 for further description.	150	There are approximately 150 students in 3rd, 4th and 5th grade. Total student population = approximately 300 students.	150/300 = 50%

**Table 2. Education and Outreach Activities (July 1, 2014 – June 30, 2015)**

Date	Water Quality Issue	Communication Media Used	Estimated Number of people reached	Matrix Assumptions	Estimated % of target audience reached
11/18/14	bacteria, trash	Education Program; Fort Belvoir Child Youth Services; See BMP 1.1 for further description.	40	Total number of children in the Child Development Center is 144.	40/144 = 28%
4/22/15	Sediment, nutrients, bacteria	Print Media; Earth Day; See BMP 1.1 for further description.	100	100 participants attended. Advertised via Belvoir Eagle and Facebook which has the potential to reach the entire population of Fort Belvoir (50,508)	100/ 50,508 = <1%

- b. Permit Section II.B.1.g(2): A list of the education and outreach activities that will be conducted during the next reporting period for each high-priority water quality issue, the estimated number of people reached and an estimated percentage of the target audience or audiences that will be reached.** A list of education and outreach activities planned for permit year 3 (July 1, 2015 – June 30, 2016) may be found in Table 3.

**Table 3. Education and Outreach Activities (July 1, 2015 – June 30, 2016)**

Date	Water Quality Issue	Communication Media Used	Estimated Number of people reached	Estimated % of target audience reached
Sept 2015	Sediment, nutrients, bacteria	Newspaper – <i>Belvoir Eagle</i>	19,000	19,000/50,508 = 38%
Nov 2015	Bacteria	Fort Belvoir Elementary School Career Day	150	150/300 = 50%
Dec 2015	Sediment, nutrients, bacteria	Newspaper – <i>Belvoir Eagle</i>	19,000	19,000/50,508 = 38%
Feb 2016	Sediment, nutrients, bacteria	Newspaper – <i>Belvoir Eagle</i>	19,000	19,000/50,508 = 38%
April 2016	Sediment, nutrients, bacteria	Earth Day	100	100/ 50,508 = <1%
May 2016	Nutrients	Newspaper – <i>Belvoir Eagle</i>	19,000	19,000/50,508 = 38%

- c. Status of compliance with permit conditions:** For the reporting period, July 1, 2014 - June 30, 2015, Fort Belvoir completed the following actions to maintain compliance with permit conditions:
- As required by Section II, B.1 of the permit, the *U.S. Army, Fort Belvoir, Virginia Municipal Separate Storm Sewer Systems (MS4) Public Education and Outreach Plan* was completed. This plan identified three high-priority water quality issues and rationale for the selection. Fort Belvoir's three high-priority water quality issues were identified as nutrients, sediment and bacteria. This Plan is available upon request.
  - A brochure titled "*Don't Dump Here...It Ends Up Here!*" was revised and printed. This brochure can be distributed to a variety of audiences and identifies stormwater pollution prevention tips for activities that contribute to water quality.
  - Four out of five of the education and outreach activities conducted exceeded the permit requirement of reaching an equivalent 20% of each high-priority issue target audience. See Table 2.
- d. BMP Assessment:** All BMPs (BMP 1.1 – 1.4) for the Public Education and Outreach MCM continue to remain effective and utilize various communication media available within the Fort Belvoir organization.

BMPs 1.1 – 1.3 were incorporated into the Public Outreach Plan (BMP 1.4) and will be implemented as part of BMP 1.4. Therefore, these BMPs no longer need to be individually noted in the MS4 Program Plan. Also, the remaining BMP 1.4 will be changed to reflect that the plan has already been developed and needs revision, as needed, and will be renumbered as BMP 1.1. The MS4 Program Plan has been revised to reflect this change and will be as follows:

**BMP 1.1 Develop and Implement a Public Education and Outreach Plan**

- *Measurable Goal:* In permit year 1, develop a Public Outreach Plan in accordance with the conditions set forth in 9VAC25-890-40 Section II, B.1. In permit years 2 - 5, in accordance with the Public Education and Outreach plan, annually conduct sufficient education and outreach activities designed to reach an equivalent of 20% of each high-priority issue target audience. In permit years 2 – 5 annually review the Public Education and Outreach Plan and revise, as needed.
- *Reporting and Recordkeeping:* In the annual report, include a list of the education and outreach activities conducted during the reporting period for each high priority water quality issue, the estimated number of people reached and an estimated

percentage of the target audience or audiences that will be reached. Also provide a summary of any revisions that were made to the Public Education and Outreach Plan.

- *Responsible Party:* DPW ENRD

**e. Progress toward achieving the measurable goals identified in the MS4 Program Plan:**

Status of achieving the measurable goals identified in the MS4 Program Plan are as follows:

**i. BMP 1.1 Support Accotink Bay Wildlife Refuge Environmental Education Center:**

The measurable goal to support one activity to educate children attending Fort Belvoir Elementary School was exceeded during the reporting period July 1, 2014 – June 30, 2015. Two activities were conducted.

On November 18, 2104, DPW ENRD staff conducted an environmental education scavenger hunt with 40 children from the Child Development Center. The scavenger hunt reviewed topics such as water quality, habitat and wildlife signs. Specifically, DPW ENRD staff discussed what the children could do to help with water quality (picking up after their pets, picking up trash).

On April 22, 2015 as part of the Earth Day events at the Accotink Bay Wildlife Refuge Environmental Education Center, an interactive display was staffed during the entire day's celebration and activities. Over 50 U.S. EPA brochures entitled, "After the Storm: A Citizens Guide to Understanding Stormwater (EPA 833-B-03-002, January 2003) were distributed to the residents of Fort Belvoir. Additionally, this display demonstrated the effects of everyday activities on water quality with a DPW ENRD staff person utilizing an interactive EnviroScape Watershed, Nonpoint Source, Stormwater Pollution and Prevention education model (<http://www.envirosapes.com/>).

- ii. BMP 1.2 Present Stormwater and General Watershed Information on the Fort Belvoir Website:** The measurable goal to revise information presented regarding impact of stormwater discharge to receiving waters and general watershed data on the Fort Belvoir DPW ENRD website was met during the reporting period July 1, 2014 – June 30, 2015. Content for the draft website <http://www.belvoir.army.mil/dpw/enrd/natStormWaterErosion.asp> remained under review by Fort Belvoir leadership for approval and launch. This website will contain information on general watershed information, impacts of illicit discharges

and what contractors, government employees and military personnel can do to help reduce water quality impacts.

- iii. **BMP 1.3 Present Information on Watershed Protection to School Groups:** The measurable goal to attend Fort Belvoir Elementary School’s Annual Career Day was met for the reporting period July 1, 2014 – June 30, 2015. On November 13, 2014, three staff members from Fort Belvoir Directorate of Public Works (DPW), Environmental and Natural Resources Division (ENRD) attended Career Day at the Fort Belvoir Elementary School. One staff member specifically discussed stormwater careers and what the children can do to improve stormwater quality and how their daily actions can impact the water quality of adjacent waterways like the Potomac River and ultimately, the Chesapeake Bay. Copies of stormwater educational materials were on display and included the U.S. EPA brochure entitled, *“After the Storm: A Citizens Guide to Understanding Stormwater* (EPA 833-B-03-002, January 2003) and *“Are You Cleaning Up After Your Pet?”*. Approximately 150 students attended (Third, Fourth and Fifth Grade students) and were required to stop by each display and approximately 50 copies of the brochures were distributed and discussed.
- iv. **BMP 1.4 Develop and Implement a Public Outreach Plan:** The measurable goal to annually conduct sufficient education and outreach activities designed to reach an equivalent of 20% of each high-priority issue target audience was met during the reporting period July 1, 2014 – June 30, 2015. See Table 2 for a list of activities that were conducted.

## 2. MCM2-Public Involvement/Participation

### a. Permit Section II.B.2.d(1): A web link to the MS4 Program Plan and annual report;

Copies of the updated MS4 Program Plan and this annual report will be posted on the Fort Belvoir website <https://www.belvoir.army.mil/environdocssection.asp> by October 30, 2015.

### b. Permit Section II.B.2.d(2): Documentation of compliance with the public participation requirements of this section.

Five public participation activities were conducted during the reporting period July 1, 2014 – June 30, 2015. See Table 4 for a list of public participation activities that were conducted. Supporting documentation is available upon request.

Table 4. Public Participation Activities		
Date	Name of Event/Activity	Description
9/27/14	29 <sup>th</sup> International Coastal Cleanup/Public Lands Day	Number of volunteers: 100 Trash collected: 30 bags, 7 tires & one propane tank
4/12/15	Potomac River Watershed Cleanup	Number of volunteers: 135 volunteers Trash collected: 155 bags of trash, 65 tires
4/25/15	Route 1 Cleanup	Volunteers: 74 Trash collected: 55 bags
5/2/15	Boy Scout Order of the Arrow Project, Colonial District, National Capital Area Council	Volunteers: 60 scouts Trash collected: 20 bags Trees planted: 200
5/9/15	Storm Drain Marker Project, Boy Scout Troop 888	# Markers: 200 storm drain markers installed

### c. Status of compliance with permit conditions: For the reporting period, July 1, 2014 - June 30, 2015, Fort Belvoir completed the following actions to maintain compliance with permit conditions:

- Posted the MS4 Program Plan and annual report on the Fort Belvoir website on October 7, 2014;
- Conducted five public participation activities (See Table 4).

- d. BMP assessment:** All BMPs (BMP 2.1 – 2.3) for the Public Involvement/Participation MCM continue to remain effective and meet permit requirements. BMP 2.2 has been revised to incorporate VADEQ’s requirement to update the MS4 Program Plan annually by 30 June.
- e. Progress toward achieving measurable goal identified in the MS4 Program Plan**  
Status of achieving the measurable goals identified in the MS4 Program Plan are as follows:
- i. BMP 2.1 Public Participation:** The measurable goal to participate, through promotion, sponsorship or other involvement, in a minimum of four local activities annually was exceeded during the reporting period July 1, 2014 – June 30, 2015. Fort Belvoir participated in five local activities as described in Table 4.
  - ii. BMP 2.2 Publish the MS4 Program Plan and Annual Reports on the Fort Belvoir Website:** The measurable goal to update the MS4 Program Plan at a minimum once per year and in conjunction with the annual report and post copies of the MS4 Program Plan and annual report on the Fort Belvoir webpage within 30 days of submittal to VADEQ was met during the reporting period July 1, 2014 – June 30, 2015. The MS4 Program Plan was updated in September 2014 and this plan and the annual report were posted to the Fort Belvoir webpage [http://www.belvoir.army.mil/envirodocssection\\_MS4AnnualReport.asp](http://www.belvoir.army.mil/envirodocssection_MS4AnnualReport.asp) on October 7, 2014.
  - iii. BMP 2.3 Provide for Public Notification and Receipt of Comments on the MS4 Program Plan:** This measurable goal for this BMP will be implemented in Permit Year 5.

### 3. MCM3 – Illicit Discharge Detection and Elimination

a. **Permit Section II.B.3.f(1): A list of any written notifications of physical interconnection given by the operator to other MS4s:** Not Applicable

b. **Permit Section II.B.3.f(2): The total number of outfalls screened during the reporting period, the screening results, and detail of any follow-up actions necessitated by the screening results:** Total number of outfalls screened by the Outfall Reconnaissance Inventory (ORI) during the reporting period July 1, 2014 – June 30, 2015 was 50 outfalls. Three flowing outfalls (MS4 Structure ID 509, 6244, and 2796.) with positive indicators for illicit discharges were discovered and additional investigations were conducted to determine the source of illicit discharge with the goal to eliminate the illicit discharge. One of the illicit discharges was resolved and requires follow-on confirmation in 2015 and two were determined to be intermittent discharges and remain under investigation.

MS4 Structure ID 509: Initial discovery was made on October 29, 2014. This is an outfall associated with Building 808, old Dewitt Hospital. Three follow-up source tracking investigations were conducted on November 14, 2014, January 23, 2015 and April 10, 2015 involving visual evaluation of the storm sewer system and investigation inside Building 808 to determine the source. The investigation inside the building on April 10, 2015 revealed that the discharge appeared to be coming from a sump pump that had a HVAC treatment process attached. No discharge from the pump was occurring due to the power to the building being shut off due to upcoming demolition and because pipes had ruptured in the winter. Confirmation that the illicit discharge was no longer active was conducted at the outfall. This outfall will remain on the ORI list for the next permit year as follow-up investigation in order to verify that the discharge has been eliminated.

MS4 Structure ID 2796: Initial discovery of the illicit discharge was made on October 30, 2014. Outfall inspection/source tracking was conducted on November 14, 2014. Several potential sources for illicit discharge were identified by walking the drainage area, making observations inside buildings and nearby storm drains and interviewing building personnel. On subsequent outfall inspections conducted on January 23, 2015 and February 10, 2015, no flow was observed at this outfall. Because of the intermittent nature of this illicit discharge, a level logger and pressure inducer were installed in the outfall to determine when dry weather flows occur. Follow-up will occur during late summer/early fall 2015 to attempt to identify frequency and pattern of discharge.

MS4 Structure ID 6244: Initial discovery of illicit discharge was made on October 30, 2014. This is an outfall associated with Fort Belvoir Community Hospital (Buildings

1229, 1230 and 1231). Considerable flow was noted at this outfall and several potential sources were identified: overflow of watering and fertilizing of green roof, overflow of non-target irrigation, possible water line break or a possible illicit connection within the hospital. (The hospital was finished on a tight schedule and there is a possibility that error could have occurred in plumbing connections.) A subsequent interview was conducted with the Chief of Facilities Management Department on February 20, 2015 and it was concluded that non-target irrigation of landscaping areas was the potential cause of the discharge. This outfall will remain on the ORI list for the next permit year and evaluated during the growing season when watering may occur. Based on unsuccessful source tracking conducted this permit year and the intermittent nature of this discharge, it has been determined that the tracking investigation needs to be conducted during a discharge event to determine the source of discharge.

Fifteen outfalls were identified for re-screening that will occur during the ORI planned for late summer/early fall 2015. The three outfalls discussed above will be rescreened. In addition, twelve of the outfalls that were characterized as having a potential for illicit discharges due to possible physical indicators (olfactory indicators, poor pool quality and outfall damage) during the ORI conducted in 2014 – 2015 will be rescreened.

- c. Permit Section II.B.3.f(3): A summary of each investigation conducted by the operator of any suspected illicit discharges:** A total of 13 illicit discharges were investigated for the reporting period July 1, 2014 – June 30, 2015. Illicit discharges were discovered utilizing the ORI, windshield inspections and complaint investigations. Table 5 summarizes the illicit discharge investigations conducted.

Table 5: Summary of Illicit Discharge Investigations				
Fort Belvoir Incident Number	Date Discovered	Associated MS4 Structure ID	Description	Status
15-001	10/15/14	6294	An oil spill in the parking lot between buildings 1259 and 1261. A POV truck had leaked approximately 1 gallon of oil. The fire department and ENRD contained the area, but some of it was washed away by the rain into the storm drain. Mr. Mark Miller with VA DEQ was notified. Mr. Miller requested no further action for this incident.	Closed 10/15/14
15-002	10/29/14	509	Discovered during annual ORI. See Section 3.b.	Open

**Table 5: Summary of Illicit Discharge Investigations**

<b>Fort Belvoir Incident Number</b>	<b>Date Discovered</b>	<b>Associated MS4 Structure ID</b>	<b>Description</b>	<b>Status</b>
15-003	10/30/14	2796	Discovered during annual ORI. See Section 3.b.	Open
15-004	10/30/14	6244	Discovered during annual ORI. See Section 3.b.	Open
15-005	1/26/15	N/A – Discharged via sheet flow to the Potomac River	Break in coolant line of generator happened between January 23 <sup>rd</sup> and January 26 <sup>th</sup> at building 367. It was estimated that approximately 20 gallons was released. Mr. Mark Miller with VADEQ was notified.	Closed 1/26/15
15-006	2/4/15	2723	DPW Remediation Project Manager reported that there was inquiry from VADEQ about outfalls located near Tully gate. Outfall observed to be flowing. After upgrade of Sanitary Lift Station 1409, outfall flow had decreased significantly. This outfall placed on ORI list for continued monitoring. The most recent monitoring of the site (9/8/15) showed no flow from the outfalls. Awaiting funding to conduct remote camera inspection of pipes to determine if the low flow is groundwater.	Open
15-007	3/2/15	N/A – Discharged into un-named tributary to Accotink Creek	Complaint received from DPW employee. A drill crew was observed and photographed improperly disposing of drilling mud along Meade Road and it went down to the stream. Site was cleaned up.	Closed 3/5/15
15-008	3/11/15	Classified	Illicit discharge from sanitary sewer reported by ADF-E employee.	Closed 5/8/15
15-009	3/19/15	N/A – Discharged into un-named Tributary to Accotink Bay.	Complaint received from DPW employee that there was evidence of a salt pile flowing outside of a contractor storage area located at Theote Road Temporary Staging Parcel.	Closed 5/12/15

<b>Table 5: Summary of Illicit Discharge Investigations</b>				
<b>Fort Belvoir Incident Number</b>	<b>Date Discovered</b>	<b>Associated MS4 Structure ID</b>	<b>Description</b>	<b>Status</b>
15-010	3/20/15	N/A – Discharged into adjacent wetland	Complaint received from DPW employee that there was evidence of janitorial employees dumping mop water outside onto the pavement at Building 778. There were no nearby storm sewer inlets. Contracting Officer's representative was notified with training on IDDE to be conducted in permit year 3.	Closed 3/23/15
15-011	3/25/15	1852	Illicit discharge from sanitary sewer reported by field personnel conducting a topographic survey for a stream restoration; VADEQ Incident Report # 2015-N-2192; During building renovation of Building 318, a sanitary sewer line was connected to condensate line that was connected to the storm sewer.	Closed 7/6/2015
15-012	4/3/15	Sheet flow to Un-named Tributary to Gunston Cove.	DPW employee discovered eye wash station drain in Building 367 routed to storm sewer. Drain needs to be re-routed to sanitary sewer. Work request submitted on April 3, 2015.	Open
15-013	4/13/15	N/A	Sanitary sewer discharge due to broken pipe. Reported by American Water.	Closed 4/13/15

- d. Status of compliance with permit conditions:** For the reporting period, July 1, 2014 – June 30, 2015, Fort Belvoir completed the following actions to maintain compliance with permit conditions:
- The *U.S. Army, Fort Belvoir, Virginia Illicit Discharge Detection and Elimination Plan* was completed in June 2015;
  - ORI conducted on 50 outfalls;
  - Thirteen reported illicit discharge were investigated.
- e. BMP assessment:** BMPs (BMP 3.1 – 3.12) for the Illicit Discharge Detection and Elimination MCM continue to remain effective and meet permit requirements. BMPs 3.2, 3.3, 3.4, 3.5 and 3.9 were incorporated into the *U.S. Army, Fort Belvoir, Virginia Illicit Discharge Detection and Elimination Plan, June 2015* and no longer need to be individually noted in the MS4 Program Plan because these BMPs will be implemented as

part of the revised BMP 3. 2. The MS4 Program Plan has been revised to reflect this change and will be as follows:

**BMP 3.2 Implement and Update the *U.S. Army, Fort Belvoir, Virginia Illicit Discharge Detection and Elimination (IDDE) Plan*.** The IDDE plan documents standardized procedures to conduct outfall reconnaissance inventories (dry weather outfall screening), IDDE source tracking and illicit discharge sampling, as needed.

*Measurable Goal:* In permit years 1 – 5, annually update the IDDE Plan, as needed, and implement the plan.

*Reporting and Record Keeping:* Document activities conducted and in the annual report, provide a summary of activities that were conducted to implement the plan.

*Responsible Party:* DPW ENRD

In addition, BMP 3.11 Support Family Housing Orientation was incorporated into the Public Education and Outreach Plan and no longer needs to be individually noted in the MS4 Program Plan because BMP 1.1 implements the Public Education and Outreach Plan.

**f. Progress toward achieving measurable goal identified in the MS4 Program Plan**

Status of achieving the measurable goals identified in the MS4 Program Plan are as follows:

- i. BMP 3.1 Develop, Implement, Update and Support Geospatial Information System (GIS) Layers:** The measurable goal to develop, implement, update and support GIS layers containing stormwater systems, watershed/subwatershed boundaries, utility data and other information pertinent to stormwater management to reflect changes or new information was met during the reporting period July 1, 2014 – June 30, 2015. GIS data associated with the outfall reconnaissance inventory was updated.
- ii. BMP 3.2 Develop Methods to Detect Illicit Discharges:** The measurable goal to develop standardized procedures and processes to perform evaluations of various facility or installation operations, such as smoke or dye tests of drains, in order to identify illicit discharges was met during the reporting period July 1, 2014 – June 30, 2015. These procedures were incorporated into the *U.S. Army, Fort Belvoir, Virginia Illicit Discharge Detection and Elimination Plan June 2015*.
- iii. BMP 3.3 Inform the Public of Water Quality Impacts Associated with Illicit Discharges:** The measurable goal to provide information to the Fort Belvoir public on the identification and water quality effect of illicit discharges was met during the reporting period July 1, 2014 – June 30, 2015. On September 11, 2015 an

article entitled “*Stormwater Pollution Affects Everyone*” was published that discussed pollution prevention to avoid illicit discharges. In addition, a “*Fort Belvoir Quick Guide to Detecting and Reporting Illicit Discharges*” was developed that will be utilized to train DPW field personnel about illicit discharge detection and reporting illicit discharges to the DPW ENRD Stormwater Team.

- iv. **BMP 3.4 Evaluate Storm Drain Outfalls:** The measurable goal to perform an outfall reconnaissance inventory (ORI) of 50 identified outfalls to detect illicit discharges was met during the reporting period July 1, 2014 – June 30, 2015. The *U.S. Army, Fort Belvoir, Virginia 2014 Outfall Reconnaissance Inventory Final Report, June 2015* documents findings of this the ORI. See Section 3.b. for specific findings. A copy of this report is available upon request.
- v. **BMP 3.5 Perform Illicit Discharge Detection and Mitigation Procedures:** The measurable goal to perform previously developed illicit discharge detection at five facilities with the potential for illicit discharge was exceeded for the reporting period July 1, 2014 – June 30, 2015. A total of ten facilities were inspected to determine if illicit discharges were occurring at the facilities. See Table 6 for a summary of investigations conducted.

Table 6. Facility Investigations for Illicit Discharges			
Date	Facility Location	Deficiency	Corrective Action
9/11/14	Building 1150	Evidence of Enterprise Car Rental washing cars with detergent near curb inlet.	Issued email to Enterprise to stop washing cars on site.
9/27/15	Building 1484, 1491 and 1497, Sharon Lane	Concrete washout, improper fuel storage, trash debris and open dumping and improper chemical storage.	Met with the facility managers on October 2, 2014 to detail issues and all items were corrected in a timely manner.
10/27/14	Fort Belvoir North Area	Improper storage of salt/ deicing materials.	Facility constructed a sealed compartment with cover to prevent stormwater intrusion into the product and to prevent leakage onto the pavement and runoff into stormwater.

<b>Table 6. Facility Investigations for Illicit Discharges</b>			
<b>Date</b>	<b>Facility Location</b>	<b>Deficiency</b>	<b>Corrective Action</b>
4/3/15	Building 367	Eye wash station drain in Building 367 was connected to the storm sewer.	Drain needs to be rerouted to sanitary sewer. Work request submitted on April 3, 2015. Cost estimate was received on June 24, 2015. As of the date of this report, this repair has not been funded yet.
6/10/15	Building 2990, Golf Course	1. Lack of spill response cards. 2. There was a pile of used golf cart tires stored outside.	1. Spill response cards were immediately posted at chemical storage areas. 2. Facility manager provided with the proper disposal permit and tires were removed.
6/10/15	Building 2991, Golf Course	Lack of spill response cards.	Spill response cards were immediately posted at doorways and communication areas.
6/10/15	Building 2993, Golf Course	Used chemical containers (pesticides/herbicides) were piled on the floor adjacent to the bay door.	The used containers were disposed of properly by the end of the business day.
12/1/14	Meade Road Contractor Yard	Unlabeled drums stored outside, petroleum products stored outside, improper battery storage, general trash, equipment/vehicles with leaking fluids.	Re-inspection occurred on 2/20/15 and a majority of the deficiencies had been corrected. This site needs to be put on a regular inspection schedule because of the multiple contractors utilizing the site.

- vi. BMP 3.6 Develop a Plan for Operations That May Affect Stormwater:** The measurable goal to develop an assessment plan to identify and evaluate other routine operations such as waterline flushing, golf course irrigation, basement drains and condensation drains was met for the reporting period July 1, 2014 – June 30, 2015. The privatized waste-water/water partner (American Water) has established procedures when conducting fire hydrant flushing which incorporates the use of a diffuser cone with a de-chlorination table feeder (bisulfate tablets). American Water staff also utilizes de-chlorination mats to cover large stormwater grates during hydrant flushing. These mats are also utilized in the event of a large drinking waterline break to protect streams.

A Stormwater Pollution Prevention Plan is under development and will evaluate other routine operations that may contribute to stormwater pollution. The SWPPP is scheduled to be completed by June 30, 2016.

- vii. BMP 3.7 Perform Routine Operation Assessments and Develop BMPs:** The measurable goal to implement the routine operations assessment plan was met for the reporting period July 1, 2014 – June 30, 2015. Fort Belvoir is planning to implement the assessment plan in permit year 4 as part of the SWPPP.
- viii. BMP 3.8 Evaluate Potential Combined Sewer Overflow Connections:** The measurable goal to conduct and/or evaluate studies of potential combined sewer overflow connections and develop recommendations and/or mitigation actions was met during the reporting period July 1, 2014 – June 30, 2015.

It is standard procedure that if the privatized waste-water/water partner, American Water, discovers any connections of the sanitary sewer to the storm sewer system, funding will be requested to evaluate and correct cross connections. In addition, smoke testing was conducted in Area 300 and the River Village Housing Area and there were not any cross connections found. In addition, 8,138 feet of aged sanitary sewer line was replaced during the reporting period to minimize the risk of a sanitary sewer discharge occurring because of failed sanitary sewer line.

A stormwater management study in the Fort Belvoir Historic District (Area 200) is currently underway. This study is designed to investigate the possibility of roof drains being connected to the sanitary sewer and includes a general review of the potential Low Impact Development (LID) opportunities in order to meet the Energy

Independence and Security Act, Section 438 requirements and to assist towards the water quality goals set by the Chesapeake Bay TMDL and the MS4 Permit. Field investigations utilizing remote camera will begin in Fall 2015.

- ix. **BMP 3.9 Evaluate Stormwater Sampling:** The measurable goal to evaluate the stormwater system for the potential development of a sampling strategy was met for the reporting period July 1, 2014 – June 30, 2015. In June 2015, the *U.S. Army, Fort Belvoir, Virginia Illicit Discharge Detection and Elimination Plan, June 2015* was completed and specifies discrete water quality parameters for sampling that may be conducted to identify illicit discharge source.
  
- x. **BMP 3.10 Develop and Provide an Integrated Annual Training Program:** The measurable goal to conduct annual training for Fort Belvoir staff performing related industrial practices to increase awareness of the implications of illicit discharges and improper waste disposal was met for the reporting period July 1, 2014 – June 30, 2015.

As part of the permit conditions for the VPDES General Permit VAR051080 for Industrial Stormwater Discharges at Davison Army Airfield, the annual training on the Stormwater Pollution Prevention Plan (SWPPP) was conducted by DPW ENRD staff on October 21, 2014 and January 9, 2015. One hundred and nine military and civilian personnel attended the training. This training consisted of staff awareness of potential contamination from airfield operations to the stormwater system, BMPs and illicit discharge elimination. This training has integrated information on general stormwater quality protection and there is an open invitation to all of Fort Belvoir personnel including tenant activities and the fire department.

In addition, during the pre-construction Erosion & Sediment Control inspections, inspectors provide construction contractors with a copy of EPA's factsheet "*Stormwater Best Management Practice Concrete Washout*" to educate them on the proper management/disposal of concrete washout water and one-on-one education is provided during bi-weekly inspections on proper construction material storage (ie. fuel cans, hydraulic fluid, oil, Quikrete) and equipment fueling procedures.

- xi. **BMP 3.11 Support Family Housing Orientation:** The measurable goal to develop and distribute materials to new housing residents was met for the reporting period

July 1, 2014 – June 30, 2015. Stormwater quality flyers on Pet Waste, Automobile Maintenance and Car Care Tips for Homeowners and Lawn Care, Fertilizer and Pollution provided in “The Villages at Fort Belvoir Resident Responsibility Guide” found at [https://www.villagesatbelvoir.com/wp-content/uploads/RRG\\_revised-090315.pdf](https://www.villagesatbelvoir.com/wp-content/uploads/RRG_revised-090315.pdf) (See pages 94 - 97 for the stormwater quality flyers.) This Guide is distributed to all housing residents when they first move into Fort Belvoir housing.

- xii. **BMP 3.12 Implement Fort Belvoir Pollution Complaint “Hot Line”:** The measureable goal to monitor concerns and provide responses to individuals raising questions or concerns was met for the reporting period July 1, 2014 – June 30, 2015. Avenues that may be utilized by anyone to raise a question or complaint regarding environmental protection include: Maintenance of a Garrison Staff Directory with the Commander’s Hotline phone number and email address, maintenance of a Fort Belvoir Quick Telephone Directory on the Fort Belvoir website <https://www.belvoir.army.mil/BOS.asp> and maintenance and monitoring of Fort Belvoir’s Facebook site (This site is monitored by a DPQ ENRD staff person twice a day for comments posted that would be of environmental concern.) There were no reported concerns via this media during this reporting period.

**4. MCM4 – Construction Site Stormwater Runoff Control**

- i. Permit Section II.B.4.f(1): Total number of regulated land-disturbing activities.** There were 20 projects that were operating under a Construction General Permit for the reporting period July 1, 2014 – June 30, 2015.
- ii. Permit Section II.B.4.f(2): Total number of acres disturbed.** There were 246.47 acres of disturbance during the reporting period July 1, 2014 – June 30, 2015.
- iii. Permit Section II.B.4.f(3): Total number of inspections conducted.** A total of 635 inspections were conducted during the reporting period July 1, 2014 – June 30, 2015.
- iv. Permit Section II.B.4.f(4): A summary of enforcement actions taken, including the total number and type of enforcement actions.** Two enforcement actions were taken during the reporting period. For the first action, an email notice of non-compliance was sent to U.S. Army Corps of Engineers, Resident Engineer on one project under their construction contract oversight for failure to correct deficiencies noted on the bi-weekly erosion and sediment control inspection reports. For the second action, an erosion and sediment control plan and stormwater management plan was not approved for a project. Upon discovery by DPW ENRD, the Director of Public Works was notified and project was stopped and an erosion and sediment control plan and a stormwater management plan is under development and will be reviewed and approved by Virginia Department of Environmental Quality.
- v. Status of compliance with permit conditions.** For the reporting period, July 1, 2014 - June 30, 2015, Fort Belvoir completed the following actions to maintain compliance with permit conditions:
  - Construction projects disturbing an acre or greater of land were required to obtain a Construction General Permit from VADEQ;
  - Erosion and sediment control inspections were conducted on construction projects with CGPs upon initial installation of erosion and sediment controls, at least once during every two-week period, within 48 hours of any runoff-producing storm event and upon completion of the project;
  - Construction projects disturbing 10,000 square feet or greater of land were required to obtain erosion and sediment control plan approval from VADEQ prior to construction commencement;
  - Construction projects disturbing an acre or greater of land were required to obtain erosion and sediment control and stormwater management plan approval from VADEQ prior to construction commencement;

- All Fort Belvoir Erosion and Sediment Control Inspectors maintained certificates of competence in accordance with 9VAC25-850-40;
  - The *Fort Belvoir Directorate of Public Works, Municipal Separate Storm Sewer System (MS4) Program Bulletin #1: Stormwater Management (SWM) and Erosion and Sediment Control (ESC) Design, Review and Plan Approval Procedures and SWM and ESC Compliance Procedures during Construction* was revised and was distributed to all project proponents at the concept design phase of the project.
- vi. **BMP assessment:** BMPs (BMP 4.1 – 4.6) for the Construction Site Stormwater Control MCM continue to remain effective and meet permit requirements. BMP 4.1 was revised to incorporate a reference to *Fort Belvoir Directorate of Public Works Municipal Separate Storm Sewer System (MS4) Program Bulletin #1: Stormwater Management (SWM) and Erosion and Sediment Control (ESC) Design, Review and Plan Approval Procedures and SWM and ESC Compliance Procedures During Construction* which documents the construction project review procedure. A new BMP 4.7 was added to address enforcement actions.
- vii. **Progress toward achieving measurable goal identified in the MS4 Program Plan**
- i. **BMP 4.1 Establish a Construction Project Review Procedure:** The measurable goal to establish a procedure to review construction projects to evaluate the project’s potential to impact water quality, and the project’s compliance with the MS4 Permit and state and federal regulations was met for the reporting period July 1, 2014 – June 30, 2015. The *Fort Belvoir Directorate of Public Works, Municipal Separate Storm Sewer System (MS4) Program Bulletin #1: Stormwater Management (SWM) and Erosion and Sediment Control (ESC) Design, Review and Plan Approval Procedures and SWM and ESC Compliance Procedures during Construction* was revised and is distributed to all project proponents at the concept design phase of the project. A copy of this bulletin is available upon request.
  - ii. **BMP 4.2 Communicate the Requirements of the Stormwater Program:** The measurable goal to distribute MS4 permit requirements to designers during initial planning phases of construction projects was met during the reporting period July 1, 2014 – June 30, 2015. DPW ENRD distributed MS4 Bulletin #1 (See BMP 4.1) to designers for projects with greater than 2500 square feet of land disturbance. In addition, DPW ENRD provided the Fort Belvoir Home Page website address for copies of the MS4 General Permit and Fort Belvoir’s Registration Statement, as well as the URL address for Virginia Code for direct access to the MS4 General Permit, the

Virginia Stormwater and Erosion & Sediment Control Regulations and other documents that were requested.

- iii. **BMP 4.3 Develop a Tracking System:** The measurable goal to maintain an Excel spreadsheet to track project status was met during the reporting period July 1, 2014 – June 30, 2015. The Excel spreadsheet was updated biannually.
  
- iv. **BMP 4.4 Obtain Registration under the General VPDES Permit for Discharges of Stormwater from Construction Activities (CGP) for Construction Projects:** The measurable goal requiring construction projects that disturb an acre or greater of land to obtain a CGP prior to construction was met during the reporting period July 1, 2014 – June 30, 2015. There were 20 projects that were operating under a Construction General Permit for the reporting period July 1, 2014 – June 30, 2015.
  
- v. **BMP 4.5 Initiate Erosion and Sediment Control Site Inspections:** The measurable goal to conduct site inspections for 100% of construction projects was not met during the reporting period July 1, 2014 – June 30, 2015. Erosion and Sediment Control inspections were conducted once every two weeks and within 48 hours of a storm event that produced greater than .5” precipitation on all construction projects possessing a CGP. However, staff shortages due to contractual lapses and failure of DPW ENRD to be notified that the project had started resulted in completion of approximately 96% of required inspections. A total of 635 Erosion and Sediment Control inspections were conducted.
  
- vi. **BMP 4.6 Evaluate Emerging Technologies:** The measurable goal to review or evaluate one new product or engineering control was met during the reporting period July 1, 2014 – June 30, 2015. A stormwater management study in the Fort Belvoir Historic District (Area 200) is ongoing. This study includes a general review of the potential Low Impact Development (LID) opportunities in order to meet EISA 438 requirements and to assist towards the water quality goals set by the Chesapeake Bay TMDL and the MS4 Permit.

## 5. MCM5 – Post-Construction Stormwater Management

- a. Permit Section II.B.5.e: The operator shall submit an electronic database or spreadsheet of all stormwater management facilities brought online during each reporting year. In addition, the operator shall annually track and report total number of inspections and when applicable, the number of enforcement actions taken to ensure long-term maintenance:** Four stormwater management facilities were brought online during the reporting period July 1, 2014 – June 30, 2015. Appendix A contains a spreadsheet that lists these new facilities. Total number of maintenance inspections conducted were 241. The number of enforcement actions taken to ensure long-term maintenance is not applicable because maintenance is accomplished, as needed, by the Operations and Maintenance Contractor and Fort Belvoir coordinates with the residential housing maintenance contractor to accomplish maintenance on stormwater management facilities located within the housing areas.
- b. Status of compliance with permit conditions:** For the reporting period, July 1, 2014 – June 30, 2015, Fort Belvoir completed the following actions to maintain compliance with permit conditions:
- Required new construction projects to comply with Virginia Stormwater Management Program quantity and quality regulations;
  - Required new construction projects greater than an acre to obtain VADEQ stormwater management plan approval;
  - Conducted periodic stormwater management facility inspections during construction to ensure that a facility were constructed in accordance with the approved plan;
  - Conducted inspections on 241 stormwater management facilities to determine maintenance requirements;
  - Updated Access database.
- c. BMP assessment:** BMPs (BMP 5.1 – 5.9) for the Post-Construction Runoff Control MCM continue to remain effective and meet permit requirements. BMP 5.1 was revised to incorporate a reference to *Fort Belvoir Directorate of Public Works Municipal Separate Storm Sewer System (MS4) Program Bulletin #1: Stormwater Management (SWM) and Erosion and Sediment Control (ESC) Design, Review and Plan Approval Procedures and SWM and ESC Compliance Procedures During Construction* which documents the construction project review procedure for stormwater management design plans.

**d. Progress toward achieving measurable goal identified in the MS4 Program Plan:**

- i. BMP 5.1 Establish a Construction Project Review Procedure:** The measurable goal to establish a procedure to review construction projects to evaluate the project's potential to impact water quality and the project's compliance with MS4 Permit, state (VSMP) and federal regulations (EISA 438) was met during the reporting period July 1, 2014 – June 30, 2015. MS4 staff reviewed construction plans for projects disturbing areas of 2,500 square feet and greater to determine if the stormwater design plans comply with the Virginia Erosion and Sediment Control Handbook, Fairfax County Public Facilities Manual, Virginia Stormwater Management Handbook, the Energy Independence and Security Act, Section 438 and Virginia Erosion and Sediment Control and Stormwater Management laws and regulations. A Land Disturbance Letter authorizing commencement of construction was issued once Erosion and Sediment Control and Stormwater Management Plans were reviewed and approved.
- ii. BMP 5.2 Develop a Stormwater Management Facility Tracking System:** The measurable goal to establish a tracking system to include information required by Section II, B.5.e. was met for the reporting period July 1, 2014 – June 30, 2015. The Access database was revised to track stormwater management facilities /BMPs inventory and provide documentation of inspections and maintenance for each facility/BMP.
- iii. BMP 5.3 Initiate Periodic Stormwater Management Site Inspections:** The measurable goal to establish periodic inspection procedures to determine adherence to the approved design plans and to observe status of the stormwater management facility/BMP was met during the reporting period July 1, 2014 – June 30, 2015. Two construction projects with stormwater management facilities were inspected periodically during construction to ensure that the new facilities were constructed in accordance with the approved design plans. The erosion and sediment control inspection sheet was revised to incorporate stormwater management facility inspection requirements.
- iv. BMP 5.4 Provide Information on the Fort Belvoir DPW ENRD Website about Low Impact Development:** The measurable goal to provide information on the Fort Belvoir DPW ENRD website about Low Impact Development (LID) was met for the reporting period July 1, 2014 – June 30, 2015. In May 2012, work began to extensively update an existing Fort Belvoir DPW ENRD website

(<http://www.belvoir.army.mil/dpw/enrd/enrdMain.asp>) which will present stormwater and general watershed information and will include information on Low Impact Development. Content for the draft website was completed in May 2014 and is currently in review by upper management for approval and launch.

- v. **BMP 5.5 Audits of Existing Stream Conditions:** The measurable goal to perform an audit of the existing conditions of stream channels and banks, outfalls, etc. was met for reporting period July 1, 2014 – June 30, 2015. In May 2015, DPW ENRD staff contracted to perform a visual inspection with photographic documentation for 16 locations that were permitted or entered a jurisdictional stream channel. All of the stream locations were impacted by BRAC construction projects due to either culvert extensions, culvert replacements or constructed outfall structures. The report documented the current conditions and made recommendations for any corrective actions needed.
  
- vi. **BMP 5.6 Correction of Existing Watersheds** The measurable goal to systematically correct watershed damages caused by existing conditions, poor design of control structures, or inadequate maintenance of control structures was met for the reporting period July 1, 2014 – June 30, 2015. DPW ENRD requested and received funds for the design of six stream restoration projects. The U.S. Army Corps of Engineers, Baltimore District, Water Resources Branch is currently working on completing two of the six stream restoration designs. These designs are expected to be completed in December 2015, based on schedule projections. All six designs are expected to be completed in 2016. These stream restoration designs are being completed for un-named tributaries to Dogue Creek and Accotink Bay.
  
- vii. **BMP 5.7 Implement Periodic Inspections and Clean Out of Storm Drains:** The measurable goal to develop inspection and maintenance standards for cleaning of storm drains and disposal of collected waste material was met for the reporting period July 1, 2014 – June 30, 2015. DPW ENRD staff evaluated storm drain maintenance activities and continued to revise sections of the Performance Work Statement in the Base Operations Contract to “Perform Rooting and Flushing of Storm Drainage System” and to “Perform Catch Basin and Storm Drain Cleaning”.

The operations and maintenance (O&M) contractor is required to collect waste material from all storm drain flushing and catch basin cleaning operations and to perform analytical testing of collected waste materials for hazardous waste determination prior to disposal of materials to ensure that the (O&M) contractor will

meet the minimum control measure for Pollution Prevention/Good Housekeeping for Municipal Operations identified in EPA NPDES Fact Sheet, “Storm Drain System Cleaning” dated July 23, 2012.

The operations and maintenance contract specifies that ¼ of the storm drains are cleaned annually. The contractor is required to provide a schedule of maintenance.

**viii. BMP 5.8 Ensure Functionality of Existing Stormwater Management Structures:** The measurable goal to inspect 20% of stormwater BMPs annually was exceeded for the reporting period July 1, 2014 – June 30, 2015. Inspections were conducted for 241 BMPs to document functionality and need for maintenance activities. These efforts were documented in the *Final Stormwater Control Measure Inspection and Functional Assessment Report* dated June 30, 2015.

**ix. BMP 5.9 Support Stream Restoration:** The measurable goal to support one stream restoration project during the 5-year permit cycle was met for the reporting period July 1, 2014 – June 30, 2015. DPW ENRD is in the process of completing one stream restoration project which will restore 695.7 linear feet of stream channel on an unnamed tributary of Accotink Creek. The in-stream construction is completed and the plantings are expected to be completed in September 2015.

**6. MCM6-Pollution Prevention/Good Housekeeping for Municipal Operators**

- a. Permit Section II.B.6.g(1) A summary report on the development and implementation of the daily operational procedures:** Road, street and parking lot maintenance is currently contracted out and the original contract specifications did not include written procedures designed to minimize or prevent pollutant discharge from contractor daily operations. Contract specifications are under review and the written procedures will be incorporated for the next contract. In addition, to mitigate the current contract situation, pollution prevention training will be conducted annually instead of biennially as required by Section II, B.6.d.(2).

Written procedures for the application, storage, transport, and disposal of pesticides, herbicides and fertilizers are incorporated in the Integrated Pest Management Plan that is reviewed annually.

Maintenance for government-owned automobiles are conducted offsite. Written procedures for military motor pools and one do-it-yourself auto mechanic facility have been incorporated into the SWPPP which is currently in draft format and under review.

- b. Permit Section II.B.6.g(2) A summary report on the development and implementation of the required SWPPPs:** Fort Belvoir received funding and awarded a contract in August 2014 for the development of the required SWPPP. The SWPPP is currently in draft and under review and will be completed by December 2015.
- c. Permit Section II.B.6.g(3) A summary report on the development and implementation of the turf and landscape nutrient management plans that includes: total acreage of lands where turf and landscape nutrient management plans are required and acreage of lands where plans have been implemented:** Fort Belvoir identified 380 acres of managed turf that is required to be addressed by nutrient management plans. Fort Belvoir developed a nutrient management plan for the golf course (122 acres) and for six (61 acres) of the fifteen housing neighborhoods. To date, 48% (183/380) of the total managed turf is covered by nutrient management plans. Future development of the additional plans for managed turf within the remaining nine housing areas, Defense Logistics Agency, Fort Belvoir North Area and Missile Defense Agency is planned.
- d. Permit Section II.B.6.g(4): A summary report on the required training, (list of training event, date, number of employees and objective):** See Table 7 for a summary of training events conducted.

<b>Table 7. Training Events Conducted</b>			
<b>Date</b>	<b>Audience</b>	<b>Number of Employees</b>	<b>Training objective(s):</b>
5/4/15 5/5/15	Tenant Commands, military personnel,	44	Spill Response Awareness (What to do/who to call if an employee causes or discovers a spill.)
5/5/15	Food Service Managers	14	Stormwater Pollution Prevention/Illicit Discharge/Good Housekeeping
6/10/15	Golf Course Employees	12	Stormwater Pollution Prevention/Illicit Discharge/Good Housekeeping
6/25/15	Operations & Maintenance Contractor Employees (Roads & Grounds)	44	Stormwater Pollution Prevention/ Illicit Discharge Awareness

- e. Status of compliance with permit conditions:** : For the reporting period, July 1, 2014 – June 30, 2015, Fort Belvoir completed the following actions to maintain compliance with permit conditions:
- Development and implementation of daily operational procedures were reviewed and are under revision;
  - Draft Master SWPPP completed and under review;
  - Nutrient Management Plans completed for six housing neighborhoods;
  - Stormwater Pollution Prevention/Illicit Discharge/Good Housekeeping training conducted;
  - Spill response supplies were maintained and spill response training was conducted;
  - Written training plan incorporated into the draft SWPPP.
- f. BMP assessment:** All BMPs (BMP 6.1 – 6.7) for the Pollution/Prevention/Good Housekeeping MCM continue to remain effective and meet permit requirements.
- g. Progress toward achieving measurable goal identified in the MS4 Program Plan**
- i. BMP 6.1 Develop and Implement Written Training Plan:** The measurable goal to develop and implement a written training plan was met for the reporting period July 1, 2014 – June 30, 2015. A draft Master SWPPP that incorporates training requirements was completed and is under review. The final SWPPP is scheduled to be completed in December 2015.

- ii. **BMP 6.2 Support Recycling and HAZMAT Programs:** The measurable goal to provide relevant information to the public was met for the reporting period July 1, 2014 – June 30, 2015. Fort Belvoir's household hazardous waste (HHW) program is managed by a privatized family housing contractor (The Michaels Organization) that is responsible for the collection of HHW and proper disposal. DPW ENRD staff is currently reviewing the family housing household hazardous waste program to evaluate how to improve coordination between the housing contractor and the Fort Belvoir recycling center and to make the program more user-friendly for housing residents. A revision to the housing household hazardous waste standard operating procedure is underway.

All industrial hazardous waste generated by garrison tenants (non-family housing residence) is removed utilizing services contracted by Defense Logistics Agency for proper disposal.

Recycling information was incorporated into "The Villages at Fort Belvoir Resident Responsibility Guide". In addition, the Fort Belvoir Policy Memorandum #30, Fort Belvoir Qualified Recycling Program is published on the Fort Belvoir website.

- iii. **BMP 6.3 Support Street Sweeping Activities:** The measurable goal to develop street sweeping operations and maintenance standards to evaluate the effectiveness of street sweeping activities was met for the reporting period July 1, 2014 – June 30, 2015. Street sweeping and dust control requirements were implemented during construction to control dust and to ensure that roads are kept clear of sediment and debris in accordance with Virginia Erosion and Sediment Control Handbook standards and specifications. Contractors used mechanical street sweepers or workers with brooms and shovels to ensure dirt and debris are not tracked onto roadways. Contractors used water trucks to suppress dust generated by construction activities.

The Fort Belvoir Operations and Maintenance contractor conducts a monthly street sweeping program to keep roads and parking lots clear of sediment and debris. Monthly, 6,168,127 square yards of roadway and 6,821,433 square yards of parking lots are swept under this program.

- iv. **BMP 6.4 Maintain Spill Response Vehicle/Trailer:** The measurable goal to maintain a minimum of one spill response trailer and ensure appropriate training of spill response staff was met for the reporting period July 1, 2014 – June 30, 2015. Fort Belvoir has a current Spill Response Plan that is published on the Fort Belvoir

website at <http://www.belvoir.army.mil/environdocs.asp>. A spill response Conex Box was maintained at Building 1495, a spill response cabinet was maintained at the Davison Army Airfield (Building 316), the base operations and maintenance contractor maintained spill-related supplies at Buildings 114 and 1419 and a decontamination trailer was maintained at the North Post Fire Station (Building 2119).

DPW ENRD also updated spill response information and posted placards in strategic locations which provide information on what to do in case of a spill. Oil Spill Response and Recover Training classes were conducted on May 4, 2015 and May 5, 2015 and there was a total of 44 attendees.

- v. **BMP 6.5 Support “Self Help” Programs:** The measurable goal to incorporate information about these programs into stormwater pamphlets and include information about “Self Help” programs on the Fort Belvoir website was met for the reporting period July 1, 2014 – June 30, 2015. During the reporting period, a brochure titled *“Don’t Dump Here...It Ends Up Here!”* was revised and printed. This brochure can be distributed to a variety of audiences and identifies stormwater pollution prevention tips for activities that contribute to water quality and locations of do-it-yourself auto mechanic facility (Building 1462) and the 24-hr self-service car wash (Building 2318).

This program will continue to be evaluated in Permit Year 3 to determine if additional “Self Help” programs are still being funded that would require education materials.

- vi. **BMP 6.6 Develop and Implement Nutrient Management Programs:** The measurable goal to have 15% of all identified managed turf acres covered by nutrient management plans was exceeded for the reporting period July 1, 2014 – June 30, 2015. Fort Belvoir identified 380 acres of managed turf that is required to be addressed by nutrient management plans. Fort Belvoir developed a nutrient management plan for the golf course (122 acres) and for six (61 acres) of the fifteen housing neighborhoods. To date, 48% (183/380) of the total managed turf is covered by nutrient management plans. Development of the additional plans for managed turf within the remaining nine housing areas, Defense Logistics Agency, Fort Belvoir North Area and Missile Defense Agency will continue during the next permit year.

**vii. BMP 6. 7 Develop and Implement Stormwater Pollution Prevention Plans:** The measurable goal to develop and implement SWPPPs for all high-priority facilities identified was met for the reporting period July 1, 2014 – June 30, 2015. A draft Master SWPPP was completed and is under review. The final SWPPP is scheduled to be completed in December 2015.

**C. Results of the information collected and analyzed, including monitoring data, if any, during the reporting period:** As part of the permit application process for the new VPDES Industrial Stormwater Major Permit (VA0092771), Fort Belvoir is completing sampling and analysis for 32 outfall locations throughout the installation. The permit application with sampling data for 21 outfalls was submitted to VADEQ, Northern Regional Office in Woodbridge, Virginia on June 3, 2013 (revised). While working with VADEQ, it was determined that additional locations should be covered under the permit and additional outfalls were added to the permit application. Each location is being analyzed for the constituents listed in EPA Form 3510-2F, Table 2F-1, 2F-2, 2F-3 and 2F-4. The sampling for the remaining eleven outfalls is still underway and the analysis is available upon request. Also as part of the permitting process, until the VPDES Permit VA0092771 is issued, the installation is sampling before final permit issuance to complete benchmark monitoring ahead of the required dates. During this permit reporting period, nineteen stormwater outfalls sampling events were monitored across the installation for: total nitrogen, total phosphorous, total suspended solids, and total petroleum hydrocarbon. However, ten of the stormwater outfall sampling events were not covered under an active VPDES stormwater permit. This sampling data is available upon request.

As part of the sampling and investigation under the Fort Belvoir PCB TMDL Action Plan, sampling of the stormwater for PCBs in the vicinity of Building 1495 was conducted in November 2013 with the sample results received December 2013. PCBs were detected at Outfall SW 001 at 4,470 pg/L and at Outfall SW 003 at 910 pg/L. Additional sampling was conducted during the reporting period on April 30, 2015. PCBs were detected at Outfall SW 001 at 93,100 pg/L and at Outfall SW 003 at 12,300 pg/L. Fort Belvoir has submitted a project requesting funding under the Army Environmental Restoration Program to perform a Resource Conservation and Recovery Act (RCRA) Facility Investigation at this site in accordance with Fort Belvoir's RCRA Hazardous Waste Permit VA7213720082 Module IV. Contract is expected to be awarded in May 2016.

**D. A summary of the stormwater activities the operator plans to undertake during the next reporting cycle;** Stormwater activities to be undertaken during the next reporting cycle are located in Table 8.

<b>Table 8. MS4 Permit Planned Activities (July 1, 2015 – June 30, 2016)</b>		
<b>BMP #</b>	<b>BMP Description</b>	<b>2015 – 2016 Planned Activities</b>
BMP 1.1	Develop and Implement a Public Education and Outreach Plan	<ul style="list-style-type: none"> <li>• Support one educational activity at the Accotink Bay Wildlife Refuge Center;</li> <li>• Revised information presented on the Fort Belvoir website, as needed.</li> <li>• Support Fort Belvoir Elementary School's Career Day;</li> <li>• Publish one article in the Fort Belvoir Eagle quarterly;</li> <li>• Review Fort Belvoir Responsibility Guide for new housing residents and revise fact sheets, as needed.</li> </ul>
BMP 2.1	Public Participation	Participate in four local activities.
BMP 2.2	Publish the MS4 Program Plan and Annual Reports on the Fort Belvoir Website	Update Fort Belvoir website to publish copies of the 2014/2015 annual report.
BMP 2.3	Provide for Public Notification and Receipt of Comments on the MS4 Program Plan	No action until permit year 5.
BMP3.1	Develop, Implement, Update and Support GIS layers	Review existing GIS data layers to determine if existing layers are updated and identify additional data layers needed, if any and update existing layers, as needed.
BMP 3.2	Implement and Update the IDDE plan.	<ul style="list-style-type: none"> <li>• Perform outfall reconnaissance inventory of 50 outfalls;</li> <li>• Review five facilities for potential illicit discharges;</li> <li>• Publish one article in the Fort Belvoir Eagle specifically on illicit discharge identification and notification procedures;</li> </ul>
BMP 3.3	Develop a Plan for Operations that May Affect Stormwater	Assessment plan will be part of the SWPPP Plan. Complete SWPPP Plan.
BMP 3.4	Perform Routine Operation Assessments and Develop BMPs	No action until permit year 4.
BMP 3.5	Evaluate Potential Combined Sewer Overflow Connections	As needed.

<b>Table 8. MS4 Permit Planned Activities (July 1, 2015 – June 30, 2016)</b>		
<b>BMP #</b>	<b>BMP Description</b>	<b>2015 – 2016 Planned Activities</b>
BMP 3.6	Develop and Provide an Integrated Annual Training Program	Conduct annual training.
BMP 3.7	Implement Fort Belvoir Pollution Complaint “Hot Line”	Monitor concerns reported and provide responses to individuals raising questions or concerns.
BMP 4.1	Establish a Construction Project Review Procedures	Review existing procedures and update as necessary.
BMP 4.2	Communicate the Requirements of the Stormwater Program	Update Bulletin 1: Stormwater Design, Review and Plan Approval Procedures and Erosion and Sediment Control (ESC) Compliance Procedures During Construction.
BMP 4.3	Develop a Tracking System	Update project status tracking spreadsheet biannually.
BMP 4.4	Obtain Registration under Virginia Stormwater Management Permit (VSMP) for Construction Projects	Require construction projects with land disturbance of an acre or greater to obtain a Construction General Permit (CGP) from VADEQ.
BMP 4.5	Conduct Periodic Site Inspections	Conduct Erosion and Sediment Control inspections with Virginia-certified Erosion and Sediment Control Inspectors on construction projects with CGP.
BMP 4.6	Evaluate Emerging Technologies.	Review or evaluate one new erosion product or engineering control.
BMP 4.7	Progressive Compliance Enforcement Strategy	Review strategy and revise, as necessary. Track number of enforcement actions.
BMP 5.1	Establish a Construction Project Review Procedure	Review existing procedures and update as necessary.
BMP 5.2	Develop a Stormwater Management Facility Tracking System	Maintain existing EXCEL database/ACCESS database and associated GIS layer for Stormwater Management Facilities.

**Table 8. MS4 Permit Planned Activities (July 1, 2015 – June 30, 2016)**

<b>BMP #</b>	<b>BMP Description</b>	<b>2015 – 2016 Planned Activities</b>
BMP 5.3	Conduct Periodic Site Inspections	Continue inspection procedures of newly constructed stormwater management facilities prior to facility being turned over to Fort Belvoir for use and possession. Continue to obtain certifications for Virginia Stormwater Management Inspector and Plan Reviewer.
BMP 5.4	Provide Training Component on the Fort Belvoir DPW ENRD website on Low Impact Development (LID)	Continue development of information on Low Impact Development on the Fort Belvoir website.
BMP 5.5	Audits of Existing Stream Conditions	Continue to perform an audit on existing stream conditions.
BMP 5.6	Corrections to Existing Watershed	Continue to utilize the audits of existing streams and the stormwater management facility inventory to identify projects to correct existing watersheds.
BMP 5.7	Implement Periodic Inspections and Clean Out of Storm Drains	Follow inspection and maintenance standards for cleaning of storm drains and disposal of collected material.
BMP 5.8	Ensure Functionality of Existing Stormwater Management Structures	Conduct inspections as outlined in the <i>General Plan for Stormwater Management Facility Inspection and Maintenance</i> .
BMP 5.9	Support Stream Restoration	Conduct one stream restoration project if funding is provided this fiscal year.
BMP 6.1	Develop and Implement Written Training Plan	Review draft SWPPP and complete SWPPP by December 2015. Continue to implement required training.
BMP 6.2	Support Recycling and HAZMAT Programs	Continue support.
BMP 6.3	Support Street Sweeping Activities.	Continue support.
BMP 6.4	Maintain Spill Response Vehicle/Trailer	Continue to maintain existing resources for spill response and cleanup.
BMP 6.5	Support “Self Help” Programs	Evaluate “Self Help” programs to determine which programs are still being implemented.

<b>Table 8. MS4 Permit Planned Activities (July 1, 2015 – June 30, 2016)</b>		
<b>BMP #</b>	<b>BMP Description</b>	<b>2015 – 2016 Planned Activities</b>
BMP 6.6	Develop and Implement Nutrient Management Plans	Complete required Nutrient Management Plans needed to meet permit year #3 goal of coverage of 40% of identified acreage.
BMP 6.7	Develop and Implement Stormwater Pollution Prevention Plans (SWPPPs)	Finalize draft SWPPP and begin implementation.
BMP PCB.1	Develop Information Sheet on PCBs	Develop information sheet.
BMP PCB.2	Maintain a GIS Data Layer	Coordinate with GIS on maintenance of PCB data layer.
BMP PCB.3	Develop and Implement Sampling Plan	Review sampling results and determine course of action.
BMP PCB.4	Incorporate PCB information into "BMP 6.1 Develop and Implement Written Training Plan	Completed.

**E. A change in any identified best management practices or measurable goals for any of the minimum control measure including steps to be taken to address any deficiencies; The following changes have been made in the MS4 Program Plan:**

- MCM#1: BMP 1.4 was revised to incorporate BMPs 1.1 – 1.3 and is renumbered to BMP 1.1 (See section B.1.d for exact wording of BMP 1.1);
- MCM#2: BMP 2.2 has been revised to incorporate VADEQ's requirement to update the MS4 Program Plan annually by 30 June.
- MCM#3: BMPs 3.2, 3.3, 3.4 and 3.9 were combined into BMP 3.2 Implement Illicit Discharge Detection and Elimination Plan. (See Section 3.e. for revised BMP 3.2.) In addition, BMP 3.11 Support Family Housing Orientation was incorporated into the Public Education and Outreach Plan (BMP 1.1) and no longer needs to be individually noted in the MS4 Program Plan because it is included in the implementation of BMP 1.1. Remaining BMPs were renumbered.
- MCM#4: BMP 4.1 was revised. (See Section 4.f for revised BMP 4.1.) A new BMP 4.7 was added to address enforcement actions.
- MCM#5: BMP 5.1 was revised. (See Section 5.c for revised BMP 5.1)
- MCM#6: No changes.

- F. Notice that the operator is relying on another government entity to satisfy some of the state permit obligations (if applicable):** Not applicable.
- G. The approval status of any programs pursuant to Section II.C of the general permit (if appropriate), or the progress towards achieving full approval of these programs:** Not applicable.
- H. Information required for any applicable TMDL special condition obtained in Section I of the general permit.**

**1. Polychlorinated Biphenyls (PCBs) TMDL**

A PCBs TMDL Schedule for Implementation was provided to Virginia Department of Conservation and Recreation (VADCR) in a letter dated May 30, 2012. *Table 3. PCB TMDL Schedule for Implementation* in the MS4 Program Plan (Appendix A) has been updated.

An assessment of the appropriateness of the best management practices that were identified in the PCB TMDL Action Plan and progress towards achieving the identified measurable goals are provided below.

**BMP PCB.1 Develop Information Sheet on PCBs**

- **Measurable Goal:** In permit year 2, develop an information sheet and make it available at Accotink Bay Wildlife Refuge Education Center, Fort Belvoir website, family housing resident guidelines, and other training avenues, as needed.
- **Status Update:** Fort Belvoir did not meet this goal for the reporting period July 1, 2014 – June 30, 2015. The information sheet will be developed in permit year 3.

**BMP PCB.2 Maintain a GIS Layer**

- **Measurable Goal:** Annually update and maintain a GIS data layer that includes the locations of past and present PCB sites.
- **Status Update:** Fort Belvoir met this goal for the reporting period July 1, 2014 – June 30, 2015. There were no updates required.

**BMP PCB.3 Develop and Implement PCB Sampling Plan**

- **Measurable Goal:** In permit year 1, develop a PCB sampling plan to comply with PCB TMDL requirements. In permit year 2, implement the sampling plan.

- Status Update: Fort Belvoir exceeded this goal for the reporting period July 1, 2013 – June 30, 2014. This BMP was completed ahead of schedule. The sampling plan was developed as part of the *Virginia Pollutant Discharge Elimination System MS4 Permit, Fort Belvoir PCB TMDL Action Plan* prepared by Tidewater, Inc. dated March 2013. Sampling in accordance with this plan was conducted in April 2015.

BMP PCB.4 Incorporate PCB information into “BMP 6.1 Develop and Implement Written Training Plan”

- Measurable Goal: In permit year 2, incorporate materials into the training plan which specifically highlight transformer storage and reporting possible PCB leaks. In permit years 3 – 5, implement training plan.
- Status Update: Fort Belvoir exceeded this goal for the reporting period July 1, 2014 – June 30, 2015. This BMP was completed ahead of schedule. An Illicit Discharge Training Module was completed in June 2014 for use in permit year 2 and includes PCB information. This training module was implemented this year instead of waiting for implementation in permit year 3.

BMP PCB.5 Site Specific BMP for Building 1495

- Measurable Goal: In permit years 1 – 5 periodically conduct site visits to confirm containment materials are intact and perform routine maintenance of structural BMPs until PCB contamination is remediated.
- Status Update: Fort Belvoir met this goal for the reporting period July 1, 2014 – June 30, 2015. Contaminated area of the parking lot was removed and repaved. This BMP is no longer applicable because the effected parking lot area was removed and repaved. This BMP has been deleted in the MS4 Program Plan.

## 2. Bacteria TMDL – Accotink Creek

The Bacteria TMDL for the Lower Accotink Creek Watershed was issued in September 2008. The *General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems, Permit #VAR040093* issued on July 1, 2013 requires that “TMDL Action Plans for applicable TMDLs approved between July 2008 and June 2013” be updated by 36 months after permit coverage. A Fort Belvoir Bacteria TMDL Action Plan will be developed by 1 July 2016.

### 3. Chesapeake Bay TMDL for Nitrogen, Phosphorous and Sediment

The Department of Army submitted information for all Virginia Army installations to the Commonwealth of Virginia during preparation of the Virginia Chesapeake Bay Phase I & II Watershed Implementation Plans. The U.S. Army Corps of Engineers (USACE), Baltimore District was contracted by Installation Management Command to put together a database that contains site specific information for each Virginia Army installation which will assist Fort Belvoir in tracking phosphorous, nitrogen and sediment loading for the Chesapeake Bay TMDL. In addition, the database will assist with maintenance of stormwater management facilities by identifying maintenance requirements and tracking when the maintenance was completed. This database was updated as part of the maintenance inspection effort this year.

Phase II of the USACE project included development of the Chesapeake Bay TMDL Action Plan. USACE completed the *“Chesapeake Bay Total Maximum Daily Load (TMDL) Study for Fort Belvoir* dated July 2015 and this document has been submitted separately to VADEQ.

- I. **Signed certification statement:** See Section A.5. of this report.

APPENDIX A.  
NEW STORMWATER MANAGEMENT FACILITIES







**DEPARTMENT OF THE ARMY**  
**US ARMY INSTALLATION MANAGEMENT COMMAND**  
**HEADQUARTERS, UNITED STATES ARMY GARRISON, FORT BELVOIR**  
**9820 FLAGLER ROAD, SUITE 213**  
**FORT BELVOIR, VIRGINIA 22060-5928**

REPLY TO  
ATTENTION OF

IMBV-PW

25 JUN 2014

MEMORANDUM FOR Mr. Bill Sanders, Director of Public Works, 9430 Jackson Loop, Fort Belvoir, VA 22060-5116

SUBJECT: Delegation of Signature Authority, Clean Water Act Storm Water Management Program, Municipal Separate Storm Sewer System (MS4) Correspondence

1. You are authorized to sign all routine correspondence related to the Installation's MS4 permit, effective upon submission of this delegation memorandum to the Virginia Department of Environmental Quality as required by 9VAC25-870-370.B.3.
2. Fort Belvoir's Storm Water Management (MS4) program is performed in accordance with the Clean Water Act (33 USC Sec. 1251), Virginia Storm Water Management Act (Va. Code Secs. 62.1-44.15:24 et seq.), and Virginia Storm Water Management Regulations (9VAC25-890-1 et seq.).
3. Routine correspondence includes:
  - a. Correspondence related to and including submittal of annual reports for the General Permit for Discharges of Storm Water from Small Municipal Separate Storm Sewer Systems (MS4 Permit).
  - b. Correspondence related to Requests for Information received from the Commonwealth of Virginia, Department of Environmental Quality.
4. Signatory authority for submittal of MS4 Permit registration statement remains with the Garrison Commander.
5. Submittal of routine correspondence described in 3.a. or b. shall include certification of reports or other information required under 9VAC25-890-30 and 9VAC25-870-370.B.
6. This delegation may be withdrawn at any time. Notice of withdrawal must be provided to the Virginia Department of Environmental Quality.
7. This delegation shall expire upon change of command or change of Director of Public Works.
8. Authority: AR 25-50 (Preparing and Managing Correspondence), paragraph 6-1.

  
MICHELLE D. MITCHELL  
Colonel, AG  
Commanding

**“LEADERS IN EXCELLENCE”**