



DEPARTMENT OF THE ARMY
U.S. ARMY INSTALLATION MANAGEMENT COMMAND
US ARMY GARRISON, FORT BELVOIR
DIRECTORATE OF PUBLIC WORKS
9430 JACKSON LOOP, SUITE 100
FORT BELVOIR, VIRGINIA 22060-5116

REPLY TO
ATTENTION OF

September 26, 2013

Directorate of Public Works

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

Dear Mr. Thomas:

Enclosed is the Annual Report for the Fort Belvoir MS4 Permit (Permit #VAR040093) for the period July 1, 2012 – June 30, 2013 and a proposed revision of the MS4 Program Plan which incorporates the new requirements of the General Permit that was issued on July 1, 2013.

"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 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 is Ms. Pamela Couch, MS4 Permit Compliance, at 703-806-3406 or email: pamela.j.couch2.civ@mail.mil.


Bill Sanders
Director

Enclosure

"LEADERS IN EXCELLENCE"

**VIRGINIA POLLUTANT DISCHARGE ELIMINATION SYSTEM (VPDES)
SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4) PERMIT
FORT BELVOIR ANNUAL REPORT
JULY 1, 2012 – JUNE 30, 2013**

Information provided in this annual report is required as outlined in 4VAC50-60-1240, Section II, E.3.a.-n. "Annual Reports".

a. Background Information (4VAC50-60-1240, Section II, 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, 2012 – June 30, 2013

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:

During the reporting period of July 1, 2012 – June 30, 2013, there were 18 new outfalls added with an associated acreage of 3.66 acres for PL27 Dogue Creek and 57.78 acres for PL30. See Appendix A for a complete listing of outfalls. In addition, during preparation of this report, it was discovered that outfalls for last year were inadvertently left out of the report. Appendix A also contains a complete listing of outfalls for July 1, 2011 – June 30, 2012.

5) Signed Certification: Certification statement is incorporated in the transmittal letter for this report.

b. The status of compliance with permit conditions, an assessment of appropriateness of the identified best management practices and progress towards achieving the identified measurable goals for each of the minimum control measures (4VAC50-60-1240, Section II, E.3.b)

1) Status of compliance with permit conditions -Total Maximum Daily Load (TMDL) (4VAC50-60-1240 Section I, B.1-9)

A. 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, and an update on the Schedule of Implementation is provided below in Table 1.

Based on historic records reviewed in June 2012 for the Final *Virginia Pollutant Discharge Elimination System (VPDES) MS4 Permit, Fort Belvoir PCB TMDL Action Plan, March 2013* that was prepared by Tidewater, Inc. all known PCBs storage sites have either been remediated in accordance with Resource Conservation and Recovery Act (RCRA) standards or are under investigation (one location, Bldg 1495, Hazardous Waste Storage Building, EPA permit ID #VA7213720082) in accordance with RCRA standards. Based on an outfall reconnaissance completed in November 2012, two outfalls were identified that require sampling for characterization of stormwater runoff. As required by the new general permit (4VAC50-60-1240, Section 1.B.5.a.) issued on July 1, 2013, a copy of the action plan is

enclosed and *Table 1. PCB TMDL Schedule for Implementation* below and Table 3 in the MS4 Program Plan have been updated.

Table 1. PCB TMDL Schedule for Implementation

MS4 Permit Citation	Action	Schedule	Status
Section 1.B.1	Update the MS4 Program Plan to include PCBs TMDL allocations.	Completed September 2013	Completed September 2013 as part of the Annual Report.
Section 1.B.2	Document historical use of PCBs at Fort Belvoir to determine extent of drainage of PCBs storage areas to impaired waters (Accotink Creek, Dogue Creek, Pohick Creek and Gunston Cove).	Completed March 2013	Historical use documented in the Final <i>Virginia Pollutant Discharge Elimination System MS4 Permit, Fort Belvoir PCB TMDL Action Plan</i> prepared by Tidewater, Inc. dated March 2013.
Section 1.B.3	Integrate an awareness campaign into its existing public education and outreach program that promotes methods to eliminate and reduce discharges of the pollutant identified in the WLA.	May 2014	Contract awarded in August 2013 to develop training module for illicit discharges. PCBs to be included in training module.
Section 1.B.4	Incorporate applicable Best Management Practices (BMPs) identified in the TMDL implementation plan.	Completed September 2013	Incorporated into the MS4 Program Plan as part of the MS4 Annual Report.
Section 1B.5	Perform an outfall reconnaissance inventory (ORI).	November 2012	A survey of ten sites was completed and results are documented in the Final <i>Virginia Pollutant Discharge Elimination System MS4 Permit, Fort Belvoir PCB TMDL Action Plan</i> prepared by Tidewater, Inc. dated March 2013.
Section 1.B.6.a-b.	Characterize runoff (Conduct fall/spring sampling) of areas where PCBs are currently stored, has been transferred, transported or historically disposed of in a manner that would expose it to precipitation.	October 2013 – December 2014	Based on the ORI results, two outfalls were identified that require sampling for characterization of runoff. Funding for sampling was received in FY2013. Contract to be awarded by 30 September 2013.

MS4 Permit Citation	Action	Schedule	Status
Section 1.B.6.c	Determine if BMPs currently being used are sufficient to address PCBs issues. If not, develop and implement a schedule to minimize the discharge of PCBs. Include findings in 2012 Annual report.	Once the new MS4 permit becomes effective (July 2013), review new permit requirements and incorporate recommended BMPs into the MS4 Program Plan.	Completed in December 2012.
Section 1.B.7	Conduct annual characterization for each impaired water segment, as necessary, once characterization of runoff has been completed.	2015	Requirement to conduct annual characterization to be determined once characterization of runoff has been completed for two outfalls.
Section 1.B.8	Update MS4 Program Plan to include any new information regarding the TMDL.	Updated when new information becomes available.	Future revisions of MS4 Program Plan to be updated as needed.
Section 1.B.9.a-b	Annual reporting requirements for the PCB TMDL to be included in the 2013 Annual Report.	October 1, 2013	Completed October 1, 2013 as part of the MS4 Annual Report.

B. Chesapeake Bay TMDL

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) 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 is currently under development.

Phase II of the USACE project will include the Chesapeake Bay TMDL Action Plan which is scheduled for FY2014. The Virginia Department of Environmental Quality issued a Draft "Guidance for the Chesapeake Bay TMDL Action Plans" and comments were due on August 30, 2013. The Chesapeake Bay TMDL Action Plan is due by July 1, 2015. The Department of the Army will continue to work with VADEQ in the development of Chesapeake Bay TMDL Action Plans for Virginia Army Installations.

In addition, on July 1, 2012, Fort Belvoir implemented the requirement to utilize the Runoff Reduction Method as outlined in the stormwater design criteria (4VAC50-60) for all new projects requiring stormwater design.

- 2) **Assessment of appropriateness of the identified best management practices and progress towards achieving the identified measurable goals for each of the minimum control measures.** Individual status summaries for Best Management Practices (BMPs) for each of the six Minimum Control Measures (MCM) are provided below. Where noted, supplemental supporting information is provided in appendices.

A. MCM#1 Public Education and Outreach on Stormwater Impacts

BMP 1.1 Support Accotink Bay Wildlife Refuge Environmental Education Center

- Measurable Goal: Support one activity per year on the effects of stormwater discharge
- Status Update: Fort Belvoir met this goal for the reporting period July 1, 2012 – June 30, 2013 by conducting one activity as follows:

On April 19, 2012, as part of the Earth Day events at the Accotink Bay Wildlife Refuge Environmental Education Center, there was an interactive display erected with handouts regarding stormwater discharges and pollutants. The handout was from EPA and entitled, "After the Storm: A Citizens Guide to Understanding Stormwater" (EPA 833-B-03-002, January 2003). Additionally, this display demonstrated the effects of erosion on water quality and was staffed through the entire day's celebration and activities and over 200 handouts were distributed to residents of Fort Belvoir. The event was a field trip for several local public schools and over 700 students and teachers were in attendance. A copy of the article, "Students Learn How to Protect Environment, Natural Resources", printed in the April 25, 2013 Belvoir Eagle is provided in Appendix C.

BMP 1.2 Present Stormwater and Watershed Information on the Fort Belvoir website

- Measurable Goal: Present information regarding stormwater discharge to receiving waters and general watershed data on the Fort Belvoir website.
- Status Update: Fort Belvoir met this goal for the reporting period July 1, 2012 – June 30, 2013. 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. A draft website is expected to be completed in 2014 and 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.

BMP 1.3 Present Information on Watershed Protection to School Groups

- **Measurable Goal:** Attend Fort Belvoir Elementary School's Annual Career Day. Set up displays and make presentations addressing native vegetation and how it contributes to reduction of nutrient runoff and erosion and to the reduction of stormwater runoff and pollution to Chesapeake Bay tributaries.
- **Status Update:** Fort Belvoir met this goal for the reporting period July 1, 2012 – June 30, 2013. On November 1, 2012, five staff members from Fort Belvoir Directorate of Public Works (DPW), Environmental and Natural Resource Division (ENRD) attended Career Day at the Fort Belvoir Elementary School. Two staff members 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 material were taken to the school that included the U.S. EPA brochure entitled, "After the Storm: A Citizens Guide to Understanding Stormwater" (EPA 833-B-03-002, January 2003). Over 150 students attended and approximately 50 copies of the brochure were distributed and discussed.

BMP 1.4 Maintain General Watershed Information on the Fort Belvoir Website

- **Measureable Goal:** Update the watershed data to reflect changes or new information.
- **Status Update:** Fort Belvoir met this goal for the reporting period July 1, 2012 – June 30, 2013. For the Fort Belvoir DPW ENRD website, an extensive update is underway. Once this website is completed, it will be reviewed annually and maintained.

B. MCM#2 Public Involvement/Participation

BMP 2.1 Support Volunteer Stream "Clean Up"

- **Measureable Goal:** Hold one volunteer stream clean up activity to police areas around streams to collect debris or trash, remove dead branches, and note any obvious signs of deterioration or pollution. Involve tenant agencies, schools, community partners and other members of the public.
- **Status Update:** Fort Belvoir exceeded this goal for the reporting period July 1, 2012 – June 30, 2013.

The Potomac River Watershed Cleanup Day was held on April 14, 2013. Approximately 150 volunteers from a number of organizations participated in the Cleanup which yielded 16 tires and about 150 bags of plastic, glass and metal. Volunteers came from the Society of American Military Engineers, Loudoun County High School National Honor Society Students, Boy Scouts, Girl Scouts, Belvoir Waterfowl Hunters, Belvoir Bow Hunters, Fort Belvoir Community Residents and Fort Belvoir's DPW and MWR. A copy of the article, "Volunteers Beautify Belvoir During Clean Up of Watershed", printed in the April 28, 2013 Belvoir Eagle is provided in Appendix C.

The Route 1 (Richmond Highway) Clean-up was held on April 20, 2013. Approximately 65 volunteers participated in cleaning up the Route 1 corridor through Belvoir. Route 1 is a major roadway that runs through the Fort Belvoir property and much of the stormwater from the roadway discharges into local streams including Accotink Creek. The effort yielded 70 bags of trash which included plastic, paper, glass and some metal. A copy of the article "Community Members Help Clean Richmond Highway" printed in the April 25, 2013 Belvoir Eagle is provided in Appendix C.

On April 27, 2013, Cub Scout Pack 118 partnered with Fort Belvoir ENRD staff, Fairfax County and Pinnacle Housing and completed a community service project which involved labeling 98 storm drains in 2 of the 15 Fort Belvoir housing areas (Woodlawn Village and River Village). In addition, approximately 500 flyers were distributed to educate residents on the storm drain labeling project and what they can do to help with water quality in their neighborhoods. A copy of the flyer is provided in Appendix C.

BMP 2.2 Support Family Housing Orientation

- **Measurable Goal:** Develop and distribute materials about dumping waste oil and chemicals in stormwater systems to new housing residents and new tenant facilities.
- **Status Update:** Fort Belvoir met this goal for the reporting period July 1, 2012 – June 30, 2013. In January 2013, stormwater quality flyers on Pet Waste, Automobile Maintenance and Car Care Tips for Homeowners and Lawn Care, Fertilizer and Pollution were incorporated into "The Villages at Fort Belvoir Resident Responsibility Guide" which are distributed to all housing residents at Fort Belvoir. Copies of the flyers are provided in Appendix C.

BMP 2.3 Implement Fort Belvoir Pollution Complaint "Hot Line"

- **Measurable Goal:** Establish a phone listing accessible to persons living or working of Fort Belvoir in order for them to notify Fort Belvoir personnel of concerns, questions, or perceived environmental issues. Provide the "Hot Line" number(s) on the Fort Belvoir website and/or publish in the *Belvoir Eagle*.
- **Status Update:** Fort Belvoir met this goal for the reporting period July 1, 2012 – June 30, 2013. Fort Belvoir maintains several avenues that can be utilized by anyone to raise a question or complaint regarding environmental protection and are as follows: The Fort Belvoir website maintains a Garrison Staff Directory with the Commander's Hotline phone number and an email address; The Fort Belvoir Quick Telephone Directory is also maintained on the Fort Belvoir website; As required by Army Regulation, Fort Belvoir holds quarterly Environmental Quality Coordination Committee meetings comprised of representatives of each installation tenant activity and is headed by the Garrison Commander and provides a forum for discussion of environmental issues; Fort Belvoir's Facebook site is a frequently used site where comments are posted and this site is monitored by a DPW ENRD staff person twice a day for comments posted that would be of environmental concern.

BMP 2.4 Publish the MS4 Program Plan and Annual Reports

Note: This is a new BMP added during this reporting period to track a requirement of the General Permit (4VAC50-60-1240 Section II, B. 2a.(2)(a) and 2d.(1)).

- Measurable Goal: Post copies of the MS4 Program Plan on the Fort Belvoir webpage at a minimum of once a year and within 30 days of submittal of the annual report to the Department of Environmental Quality. Post copies of each annual report on the Fort Belvoir webpage within 30 days of submittal to the Department of Environmental Quality and retain copies of annual reports online for the duration of the MS4 permit.
- Status Update: Copies of the MS4 Program Plan and Annual Reports may be currently found at: <https://www.belvoir.army.mil/environdocssection.asp>

C. MCM#3 Illicit Discharge Detection and Elimination

BMP 3.1 Develop, Implement, Update and Support GIS layers

- Measurable Goal: Develop, implement, update and support GIS data layers for stormwater systems (to include outfalls and stormwater management facilities), watershed/sub-watershed boundaries, utility data and other information pertinent to stormwater management to reflect changes or new information.
- Status Update: Fort Belvoir met this goal for the reporting period July 1, 2012 – June 30, 2013. In September 2012, work began on a desktop audit to identify outfalls in the existing stormwater facility database and update the GIS data layer to include new outfalls. This work is currently ongoing.

BMP 3.2 Develop Methods to Detect Illicit Discharges

- Measurable Goal: 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.
- Status Update: Fort Belvoir met this goal for the reporting period July 1, 2012 – June 30, 2013. An internal audit was conducted which utilized U.S. Environmental Protection Agency MS4 Program Evaluation Guidance dated January 2007, EPA-833-R-07-003, Illicit Discharge Worksheet and noted that Fort Belvoir needed formal written procedures. When possible illicit discharges are reported, informal procedures in place currently include a field visit to verify if the discharge is illicit. Field verification involves utilization of a GIS-generated stormwater utility map book to determine utility location, flow direction and watershed should it discharge to storm and not sanitary.

BMP 3.3 Inform Installation Staff of Hazards Associated with Illicit Discharges

- Measurable Goal: Provide Information to installation staff and operations on the identification and effects of illicit discharges via an article, newsletter, presentation or by displaying information at appropriate facility locations or on the Fort Belvoir website.

- Status Update: Fort Belvoir met this goal for the reporting period July 1, 2012 – June 30, 2013. As part of the ongoing extensive update to an existing DPW ENRD website, information is being developed that will be presented to the public on the Fort Belvoir website about the effect of illicit discharges on water quality.

BMP 3.4 Maintain Compliance with Existing Virginia Pollutant Discharge Elimination System (VPDES) Registrations

- Measurable Goal: Operate VPDES-registered systems in accordance with system design parameters and the registration statement, prevent and/or mitigate significant permit deviations.
- Status update: Fort Belvoir met this goal for the reporting period July 1, 2012 – June 30, 2013. Three VPDES General Permits were active during the reporting period for Fort Belvoir:
 1. Davison Army Airfield (VAR051080). This permit is for an Industrial Stormwater General Permit which has quarterly visual monitoring for the permitted outfalls. Analytic sampling is not required for this permit unless the airfield de-icing operations meets a threshold for usage. Monitoring requirements were in compliance with the permit.
 2. Main Post – Building 1124 (VAG830286). This permit is for discharges from a petroleum-contaminated site from a new remediation system (dual-phase extraction system) at building 1124. Monitoring requirements were in compliance with the permit.
 3. Main Post – Building 3161 (VAG830091). This permit is for discharges from a petroleum-contaminated site from a new remediation system (dual-phase extraction system) at building 3161. Monitoring requirements are in compliance with the permit.

BMP 3.5 Evaluate Storm Drain Outfalls

- Measurable Goal: Perform inspection of 5% of identified outfalls for nuisance species or other indicators that would indicate illicit discharge into the storm drain system.
- Status Update: Fort Belvoir met this goal for the reporting period July 1, 2011 – June 30, 2012. In May 2013, the report, “*Technical Report Industrial Stormwater and Wastewater Survey*”, was reviewed and findings prioritized based on high risk for potential illicit discharge so that outfalls may be prioritized for outfall reconnaissance inventory inspections. Information from this report will be used with the ongoing outfall survey to identify high risk outfalls that require outfall reconnaissance inventory inspections for 2013-2014.

In addition, during the biweekly erosion and sediment control (ESC) inspections, ESC inspectors conducted a visual inspection for any illicit discharges and noted improper storage of construction materials (to include petroleum products on construction sites).

The Annual Comprehensive Compliance Inspection conducted March 18-20, 2013 for the Davison Army Airfield Industrial Stormwater General Permit (VAR051080) evaluated for all stormwater related issues to include illicit discharges. All quarterly inspections were completed and compliant during this monitoring period.

BMP 3.6 Perform Illicit Discharge Detection and Mitigation Procedures

- Measurable Goal: Perform previously developed illicit discharge detection procedures at five installation facilities with the potential for illicit discharge, develop recommendations for potential mitigation actions.
- Status Update: Fort Belvoir met this goal for the reporting period July 1, 2011 – June 30, 2012. Table 2. Summarizes facilities' investigations.

Table 2. Facility Investigations for Illicit Discharges

Date	Facility Location	Deficiency	Corrective Action
September 2012	Bldg 182 – Indoor Pool	Surge chamber overflow	Immediate: Purchased dechlorination mat and sodium bisulfate tablets to place in surge chamber.
February 2013	Bldg 2304 – Shoppette	Improper storage of spent halogen bulbs	Disposal request submitted to Hazardous Waste for proper disposal
February 2013	Bldg 2473 – Mosby Reserve Maintenance	Oil sheen in vehicle storage lot.	Immediate: Utilized absorbant pads to collect oil on pavement. Long-term: Amended operating procedures to immediately respond to 1 drop of oil spillage
March 2013	1984 Tactical Washrack and Containment Basin	Improper offloading of stormwater inlet cleaning materials.	Called the operations and maintenance contractor and spillage was cleaned up by end of day and proper offloading was re-addressed with all operators.
May 2013	Bldg 331	Cleaning crew poured floor stripper down interior drain and backed it up	No corrective action required other than cleaning out drain because upon investigation, material went to sanitary sewer, not storm sewer.

BMP 3.7 Develop a Plan for Operations That May Affect Stormwater

- Measurable Goal: Develop an assessment plan to identify and evaluate other routine operations such as waterline flushing, golf course irrigation, basement drains and condensation drains which may have an impact on stormwater quality.
- Status Update: Fort Belvoir met this goal for the reporting period July 1, 2012 – June 30, 2013. The "Fort Belvoir Golf Club Nutrient Management Plan" was completed in June 2012 in accordance with the Urban Nutrient Management Handbook that was funded by VADCR. This management plan is valid until June 2015 and recommends BMPs to be implemented during golf course maintenance that will protect water quality.

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 de-chlorination table feeder (bisulfate tablets). They also purchased several dechlorination mats to cover large large stormwater grates during hydrant flushing which are also utilized during in the event of large drinking waterline break to protect streams.

BMP 3.8 Perform Routine Operation Assessments and Develop BMPs

- Measureable Goal: Implement the assessment plan to identify potential impacts to stormwater quality from various routine operations. Develop BMPs or engineering controls to address identified non-stormwater discharges. Incorporate engineering controls or implement BMPs to address identified non-stormwater discharges that impact stormwater quality; implement by the end of the fourth year. Perform inspections and necessary maintenance on engineering controls or BMPs to ensure functionality; implement by the end of the fifth year.
- Status Update: Fort Belvoir met this goal for the reporting period July 1, 2012 – June 30, 2013. See BMP 3.7.

BMP 3.9 Evaluate Potential Combined Sewer Overflow Connections

- Measurable Goal: Conduct and/or evaluate studies of potential combined sewer overflow connections, develop recommendations and or mitigation actions.
- Status Update: Fort Belvoir met this goal for the reporting period July 1, 2012 – June 30, 2013. There are no known combined sewer and storm sewer lines. However, should a connection be found, funding will be requested to evaluate and correct.

BMP 3.10 Evaluate Stormwater Sampling

- Measurable Goal: Evaluate the stormwater system for the potential development of a sampling strategy and, if appropriate, develop a detailed sampling plan and perform sampling in accordance with plan (as needed).
- Status Update: Fort Belvoir met this goal for the reporting period July 1, 2012 – June 30, 2013. Under 4VAC50-60-1240 Section I, B., a sampling strategy may be required when TMDLs are approved by the State Water Control Board. For the PCBs TMDL, based on an outfall reconnaissance completed in November 2012, two outfalls were

identified that require sampling for characterization of runoff. A copy of this report is provided in Appendix B and *Table 3. PCB TMDL Schedule for Implementation* in the MS4 Program Plan has been updated.

BMP 3.11 Develop and Provide an Integrated Annual Training Program

- **Measurable Goals:** Conduct annual training for military and civilian personnel, Fort Belvoir operations and maintenance contractors, Fort Belvoir partnering contractors and Fort Belvoir specialized contractors performing related industrial practices to increase awareness of the implications of illicit discharges and improper waste disposal.
- **Status Update:** Fort Belvoir met this goal for the reporting period July 1, 2012 – June 30, 2013. 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 postponed due to sequestration and reduced staffing levels of the target audience, and is currently rescheduled for October 2013. This training consists 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, as part of the ongoing extensive update to an existing DPW ENRD website, funding was provided in June 2013 to develop an illicit discharge training module which will be posted on the Fort Belvoir website which will be available for personnel training. Because of sequestration/subsequent furloughs and funding delays, the contract was not awarded until August 2013. This training module will be completed and operational on the website by May 2014.

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 education is provided during inspections on proper construction material storage (ie. fuel cans, hydraulic fluid, oil, Quikrete) and equipment fueling procedures.

D. MCM#4 Construction Site Stormwater Runoff Control

BMP 4.1 Establish a construction Project Review Procedure

- **Measurable Goal:** Establish a procedure to review construction projects to evaluate the project's potential to impact water quality, and the project's compliance with MS4 and Stormwater Management Plan. Procedure will include: requiring signature of the design engineer attesting that the construction plans and design documents were prepared in accordance with the MS4 Permit and incorporates the minimum standards of the Virginia Erosion and Sediment Control Handbook (VESCH), Virginia Stormwater

Management Handbook (VSWH) and Fairfax County Public Facilities Manual (FCPFM); copies of design analyses, design plans and erosion control plans will be routed to appropriate experienced staff at Fort Belvoir for review; each iteration in the design process must maintain the minimum standards of the VESCH, VSWH, and FCPFM and is subject to additional review; and deficient or non-compliant documents and will be returned to designers for modification and resubmission. Review 100% of construction requirements of the MS4, erosion & sediment control, VSWH and FCPFM.

- Status Update: Fort Belvoir met this goal for the reporting period July 1, 2012 – June 30, 2013. Fort Belvoir MS4 staff maintained certificates of competence for Combined Administrators or Inspectors or are Licensed Professional Engineers in accordance with the requirements (4VAC50-50) administered by the Virginia Department of Environmental Quality . In accordance with this BMP, MS4 staff reviewed construction plans for projects disturbing areas of 2,500 square feet and greater to determine if the design plans are in compliance with the VESCH, FCPFM, VSMH, Section 438 of the Energy Independence and Security Act and Virginia Stormwater and Erosion and Sediment Control Regulations. (See Appendix D for DPW ENRD review procedures.)

BMP 4.2 Communicate the Requirements of the Stormwater Program

- Measurable Goal: Distribute MS4 permit requirements to designers during initial planning phases of construction projects. All construction contract packages (including designs and specifications) shall incorporate a requirement to conform to the conditions of the MS4 Permit and Program Plan.
- Status Update: Fort Belvoir met this goal for the reporting period July 1, 2012 – June 30, 2013. Fort Belvoir developed a Bulletin entitled “Stormwater Design, Review and Plan Approval Procedures and Erosion and Sediment Control (ESC) Compliance Procedures During Construction” which was provided to A/E firms producing construction plans and documents that detailed requirements for the design and implementation of stormwater and erosion and sediment control measures as well as construction contractors. For all projects where initial planning is done locally, ENRD provided guidance to the project proponent regarding MS4 Permit compliance requirements. A copy of the bulletin is provided in Appendix D.

Upon request, 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 may be of interest (i.e EISA 438).

MS4 permit compliance design requirements were incorporated into the Draft Installation Planning Standards (Title changed from Installation Design Guide which is a component of the Installation Master Plan) which is scheduled for finalization in 2014.

The portion of the Installation Planning Standards pertaining to stormwater design will then be published on the Fort Belvoir DPW ENRD website once the document is final.

BMP 4.3 Develop a Tracking System

- **Measurable Goal:** Establish a tracking system to ensure review comments are adequately addressed; include number and acreage of disturbed land. Develop in conjunction with National and Environmental Policy Act (NEPA) and Environmental Management System (EMS) regulation and policies.
- **Status Update:** Fort Belvoir met this goal for the reporting period July 1, 2012 – June 30, 2013. Fort Belvoir ENRD maintained an Excel Spreadsheet for Project Status which tracks the date that plans were approved, when the land disturbance letter was issued, the construction start date, construction end date, area of disturbance (acres), the plan reviewer and inspector for the project and the project status (ie what stage in the design/construction process the project is in). The Project Status spreadsheet was updated quarterly. (See Appendix D for Project Status spreadsheet.)

BMP 4.4 Obtain Registration under Virginia Stormwater Management Permit (VSMP) for Construction Projects

- **Measurable Goal:** Construction projects that disturb one or more acres of land must obtain permit registration under the general VSMP permit for construction projects and must adhere to the requirements of the permit. Incorporate a procedure under the utility clearance permit process to determine construction-VSMP applicability and verify existence of required erosion control plans prior to utility clearance permit approval.
- **Status Update:** Fort Belvoir met this goal for the reporting period July 1, 2012 – June 30, 2013. Fort Belvoir required all projects disturbing 2,500 square feet or more of land surface to obtain registration under the general Virginia Stormwater Management Program (VSMP) Permit through the Virginia Department of Conservation and Recreation. DPW ENRD staff required the contractors to provide a copy of the VSMP Registration Statement submitted to the VADCR along with a copy of the check used to pay the fee before the Land Disturbance Letter could be signed authorizing commencement of the construction project.

BMP 4.5 Initiate Periodic Site Inspections.

- **Measurable Goal:** Establish periodic inspection procedures to determine adherence to the approved design plan and the construction VSMP permit (as applicable) and to evaluate performance of BMPs and/or engineering controls. Require site inspectors to be Virginia Certified Stormwater Inspectors. Any deficiencies identified during inspection shall be rectified immediately. In the event that the same deficiency is noted during re-inspections an immediate report shall be filed with the Virginia Department of Conservation and Recreation and site operations shall cease until the deficiency is corrected. Perform site inspections of 100% construction projects.

- Status Update: Fort Belvoir met this goal for the reporting period July 1, 2012 – June 30, 2013. 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 VSMP permit. DPW ENRD inspectors worked with contracting representatives and contractors to correct deficiencies that were noted. Because of reoccurring deficiencies with construction site dewatering, the technical bulletin was reviewed and there were no changes required for this reporting cycle. This technical bulletin was distributed to construction contractors. (See Appendix D for blank inspection report and dewatering technical bulletin.)

BMP 4.6 Evaluate Emerging Technologies

- Measurable Goal: Review or evaluate one new product or engineering control designed to reduce soil erosion, consider possibility of use and potential effectiveness.
- Status Update: Fort Belvoir met this goal for the reporting period July 1, 2012 – June 30, 2013. Two DPW ENRD personnel attended StormCon 2012 to review new technology designed to reduce soil erosion that was presented by vendors. Specifically, data was obtained on the use and maintenance of the Filterra tree box system and Triton Underground Detention Systems.

E. MCM#5 Post-Construction Stormwater Management in New Development

BMP 5.1 Establish a Construction Project Review Procedures

- Measurable Goal: All construction contract packages (including designs and specifications) shall incorporate a requirement to conform to the conditions of this MS4. Establish a procedure to review projects to evaluate proposed structural and non-structural BMPs and project compliance with MS4 and Stormwater Management Plan. Procedure will include: requiring signature of the design engineer attesting that the project was prepared in accordance with the MS4 Permit and incorporates the minimum standards of the VESCH, VSWH and FCPFM; copies of design analyses, design plans and information regarding stormwater control structures will be routed to appropriate, experienced staff at Fort Belvoir for review; each iteration of the design process must maintain the minimum standards of the VESCH, VSWH, and FCPFM and is subject to additional review; and deficient designs or noncompliant project documents will be returned to designers for modification and resubmission.
- Status Update: Fort Belvoir met this goal for the reporting period July 1, 2012 – June 30, 2013. See BMP 4.1

BMP 5.2 Develop a Tracking System.

- **Measurable Goal:** Establish a tracking system to include information regarding the type of BMP, the location, the receiving waters, the number of acres treated by the BMP, and inspection and maintenance information.
- **Status Update:** Fort Belvoir met this goal for the reporting period July 1, 2012 – June 30, 2013. DPW ENRD staff reviewed the associated MS4 Survey Database that was developed in conjunction with the field survey completed in January 2012 and determined that it did not track the number of acres treated by the BMP and continued work to integrate new information into the database.

BMP 5.3 Initiate Periodic Site Inspections

- **Measurable Goal:** Establish periodic inspection procedures to determine adherence to the approved design plans and to observe status of BMP. Establish periodic inspection procedures to determine adherence to the approved design plans and to evaluate performances of BMPs and/or engineering controls. Requires site inspectors to be Virginia Certified Stormwater Inspectors. Perform site inspections of 100% of active construction projects and 10% of post-construction projects (per year).
- **Status Update:** Fort Belvoir met this goal for the reporting period July 1, 2012 – June 30, 2013. During the final construction phase on projects that were completed during the reporting period, stormwater management facilities were inspected to determine adherence to the approved design plan. Prior to turnover of facility to Fort Belvoir, stormwater management facilities were inspected to insure that they were functioning properly. When deficiencies were noted on the final inspection, the contractor was required to fix any deficiencies prior to the facility being turned over to Fort Belvoir for use and possession. Three DPW ENRD personnel attended the Basic Stormwater Management Course that was conducted by DEQ on June 24 – 25th at the Spotsylvania County School Board Building in Fredericksburg.

BMP 5.4 Provide Training Component on the Fort Belvoir DPW ENRD website on Low Impact Development (LID)

- **Measurable Goal:** Develop and maintain a training module on Low Impact Development on the Fort Belvoir DPW ENRD website that focuses on designing for low impact and sustainable development.
- **Status Update:** Fort Belvoir met this goal for the reporting period July 1, 2012 – June 30, 2013. Work began in May 2012 on the material to be posted for the stormwater component on the DPW ENRD website and because of the approval process to post information on the website, the update of the website was delayed and is now scheduled to be completed in 2014.

In addition, on April 26, 2013, three representatives from Fort Belvoir Directorate of Public Works (DPW), Environmental and Natural Resource Division (ENRD) participated in Fairfax

County's *Springfest* and presented information on Natural Resources at Fort Belvoir. Displays included information on Low Impact Development practices that are being used at Fort Belvoir to treat stormwater and the requirement for the design and construction of new projects to focus on water quality and quantity. Information was also given on how the general public can help to prevent contaminants from entering stormwater and contaminating surrounding waterways. The event had over 25,000 attendees from Fairfax County and Fort Belvoir. A copy of the article, "Fairfax County Hosts Springfest", printed in the May 2, 2013 Belvoir Eagle is included in Appendix C.

BMP 5.5 Audits of Existing Conditions

- Measurable Goal: Perform an audit of the existing conditions of stream channels and banks, outfalls, etc. to include a visual inspection and collection of photographic documentation to allow visual comparisons of existing and future conditions.
- Status Update: Fort Belvoir met this goal for the reporting period July 1, 2012 – June 30, 2013. DPW ENRD staff obtained funding in June 2013 and developed a contract to perform a visual inspection with photographic documentation for 5 streams that were located within the Accotink Creek Watershed and Dogue Creek Watershed. A contract was awarded in August 2013 and the audit is to be completed by Spring 2014.

BMP 5.6 Corrections of Existing Watersheds

- Measureable Goal: Systematically correct watershed damages caused by existing conditions, poor design of control structures, or inadequate maintenance of control structures. Program and implement an investment program where 10% of identified requirements are executed each year.
- Status Update: Fort Belvoir met this goal for the reporting period July 1, 2013 – June 30, 2013. DPW ENRD staff reviewed the associated MS4 Survey Database and prioritized stormwater management structures and lines to be repaired based on the condition noted during the field survey that was completed in January 2012. Operations and Maintenance Funding was provided to repair approximately 525 feet of damaged storm sewer line and approximately 25 curb inlets.

F. MCM#6 Pollution Prevention/Good Housekeeping for Municipal Operations

BMP 6.1 Develop Installation Operations and Maintenance Training Materials

- Measurable Goal: Develop a training program for installation personnel and partners regarding pollutant runoff reduction as it applies to various installation operations such as building and road maintenance, storm system maintenance, landscaping activities, etc.
- Status Update: Fort Belvoir met this goal for the reporting period July 1, 2012 – June 30, 2013. As part of the ongoing extensive update to an existing DPW ENRD website, funding was provided in June 2013 to develop an illicit discharge training module which will be

posted on the Fort Belvoir website which will be available for personnel training. Because of sequestration/subsequent furloughs and funding delays, the contract was not awarded until August 2013. This training module will be completed and operational on the website by May 2014.

BMP 6.2 Support Recycling and HAZMAT Programs

- **Measurable Goal:** Support of these programs facilitates appropriate waste management. Accomplish by providing relevant information to the public through monthly periodicals or Fort Belvoir website.
- **Status Update:** Fort Belvoir met this goal for the reporting period July 1, 2012 – June 30, 2013. 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. All industrial hazardous waste generated by garrison tenants (non-family housing residence) is removed with a DLA contract mechanism for proper disposal.

Information about this program was communicated to the residents of Fort Belvoir through information flyers located at the Fort Belvoir Community Center, recycling center, newcomers' briefings, and annual installation training (mandatory for all installation employees). Additionally DPW ENRD staff educated personnel and encouraged support of these programs during semi-annual hazardous waste handler refresher training provided through the Fort Belvoir ENRD Hazardous Waste Management Program. A copy of recycling information that was incorporated into "The Villages at Fort Belvoir Resident Responsibility Guide" and published in the Fort Belvoir 2013 Post Guide and Telephone Directory is provided in Appendix C.

BMP 6.3 Support Street Sweeping Activities

- **Measurable Goal:** Develop street sweeping operations and maintenance standards to evaluate the effectiveness of sweeping activities; and inspect 10% of the total street sweeping area for visible pollutants.
- **Status Update:** Fort Belvoir met this goal for the reporting period July 1, 2012 – June 30, 2013. 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. Annually, 6,168,127 square yards of roadway and 6,821,433 square yards of parking lots are swept under this program.

BMP 6.4 Implement Periodic Inspections and Clean Out of Catch Basins

- **Measureable Goal:** Develop catch basin operations and maintenance clean out standards and perform inspections to evaluate the effectiveness of maintenance activities; and evaluate 25% of the catch basins for clean out effectiveness.
- **Status Update:** Fort Belvoir met this goal for the reporting period July 1, 2012 – June 30, 2013. The U.S. Army Corps of Engineers (USACE) was contracted to develop 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 is currently still under development and once completed, will be a valuable tool for managing maintenance activities.

BMP 6.5 Ensure Functionality of Existing Storm Water Management Structures

- **Measurable Goal:** Develop an operations and maintenance plan to ensure functionality of existing stormwater management ponds, infiltration swales and other stormwater engineering structures by identifying structures, and developing required maintenance tasks and associated activity completion schedules and inspect 20% of stormwater management structures for general condition and functionality.
- **Status Update:** Fort Belvoir met this goal for the reporting period July 1, 2012 – June 30, 2013. A contract was awarded in April 2013 to develop a “General Plan for Stormwater Management Facility Inspection and Maintenance”. This document is scheduled to be completed by 30 September 2013 and will be used to conduct inspections of stormwater management facilities in FY2014.

BMP 6.6 Maintain Spill Response Vehicle/Trailer

- **Measureable Goal:** Maintain a minimum of one spill response trailer equipped with appropriate equipment and absorbents; ensure appropriate training of spill response personnel.
- **Status Update:** Fort Belvoir met this goal for the reporting period July 1, 2012 – June 30, 2013. Fort Belvoir has a Spill Response Plan and maintained a spill response trailer at the North Post Fire Station (Building 2119) and a large quantity of spill response supplies at the 90-Day Temporary Hazardous Waste Storage Facility (Building 1495). Davison Army Airfield, Building 3161, maintained a spill response cabinet and the base operations maintenance contractor has spill-related supplies at Buildings 1114 and 1419.

An 8-hour spill response training class will be conducted in Fall 2013.

- c. **Results of 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, Fort Belvoir is completing sampling and analysis for 24 outfall locations throughout the installation. The permit application with sampling data for 21 outfalls was submitted to VADEQ, Northern Regional Office in Woodbridge, Virginia in June 3, 2013. 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 remaining three outfalls is still underway and the analysis is available upon request.
- d. **Summary of stormwater activities to be undertaken during the next reporting cycle:** See Appendix E
- e. **Changes in any identified best management practices or measurable goals for any of the minimum control measures including steps to be taken to address any deficiencies:** BMPs identified in the MS4 Program Plan dated April 2013 were reviewed after the issuance of the new general permit on July 1, 2013 to determine adequacy of BMPs and to identify new BMPs needed to ensure compliance with the new permit conditions. The following changes to the MS4 Program Plan are requested.

MCM#1 Public Education and Outreach on Stormwater Impacts

(1) Fort Belvoir proposes to combine "BMP 1.4 Maintain General Watershed Information on the Fort Belvoir Website" with BMP 1.2 to eliminate redundancy.

- **BMP 1.2 Present and Maintain Stormwater and General Watershed Information on the Fort Belvoir Website**

The Fort Belvoir website, <http://www.belvoir.army.mil/default.asp> will be utilized to present stormwater and watershed information.

- **Measurable Goal:** In permit year 1, revise information presented regarding impacts of stormwater discharge to receiving waters and general watershed data on the Fort Belvoir DPW ENRD website (<http://www.belvoir.army.mil/dpw/enrd/enrdMain.asp>), a sub-site of the main Fort Belvoir website. In permit years 2 - 5, review and revise, as needed, annually.
- **Reporting and Record Keeping:** In the annual report, include a copy of the website address and content. If revisions were made, include the date(s) that the website was revised.
- **Responsible Party:** DPW ENRD will coordinate with the Public Affairs Office (PAO) and the Network Enterprise Center (NEC) to make revisions to the website.

(2) Fort Belvoir proposes to add a new BMP to meet conditions of the new permit:

BMP 1.4 Develop and Implement A Public Outreach Plan

- **Measurable Goal:** In permit year 1, develop a Public Outreach Plan in accordance with the conditions set forth in 4VAC50-60-1240 Section II, B.1. In permit years 2 - 5, annually conduct sufficient education and outreach activities designed to reach an equivalent of 20% of each high-priority issue target audience.

- **Reporting and Record Keeping:** 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
- **Responsible Party:** DPW ENRD will coordinate with the Public Affairs Office (PAO) to develop a Public Outreach Plan. DPW ENRD will conduct sufficient education and outreach activities.

MCM#2 Public Involvement/Participation

(1) Replace "BMP 2.1 Support Volunteer Stream Clean Up Event" with BMP 2.1 as follows to meet conditions outlined in the new permit:

- **BMP 2.1 Public Participation**
 - **Measurable Goal:** In permit years 1 -5, participate, through promotion, sponsorship or other involvement, in a minimum of four local activities annually. Examples of possible activities include: Potomac River Cleanup, Richmond Highway (Route 1) Cleanup, community service projects with scout groups, hazardous waste cleanup days, etc. Involve tenant agencies, schools, community partners and other members of the public with the goal of increasing public participation to reduce stormwater pollutant loads, improve water quality and support local restoration and clean-up projects, programs, groups, meetings or other opportunities for public involvement.
 - **Reporting and Record Keeping:** In the annual report, include information on the event to include date the activity was held, any photographs taken, and approximate number of participants.
 - **Responsible Party:** DPW ENRD

(2) Fort Belvoir proposes to move existing BMP 2.2 Support Family Housing Orientation and BMP 2.3 Implement Fort Belvoir Pollution Complaint "Hot Line" to the "Minimum Control Measure #3: Illicit Discharge Detection and Elimination" Section of the MS4 Program Plan since these two BMPs are designed to minimize and report illicit discharges.

(3) Fort Belvoir proposes to add two new BMPs to meet conditions outlined in the new permit:

BMP 2.2 Publish the MS4 Program Plan and Annual Reports on the Fort Belvoir Website

- **Measurable Goal:** Update the MS4 Program Plan at a minimum once per year and in conjunction with the annual report. Post copies of the MS4 Program Plan on the Fort Belvoir webpage at a minimum of once a year and within 30 days of submittal of the annual report to the Department of Environmental Quality (DEQ). Post copies of each annual report on the Fort Belvoir webpage within 30 days of submittal to DEQ and retain copies of annual reports online for the duration of the MS4 permit.

- **Reporting and Record Keeping:** In the annual report, provide the web link to the MS4 Program Plan and annual reports.
- **Responsible Party:** DPW ENRD will coordinate with the Public Affairs Office (PAO) and the Network Enterprise Center (NEC) to make revisions to the website.

BMP 2.3 Provide for Public Notification and Receipt of Comments on the MS4 Program Plan

- **Measurable Goal:** In permit year 5, prior to submittal of the registration statement, provide for a public notification of a 30-day review and comment period of the MS4 Program Plan which may include a notice in the *Belvoir Eagle* and/or posting of the notice on the Fort Belvoir Facebook site and/or posting of the notice on the Fort Belvoir website.
- **Reporting and Record Keeping:** As part of the reapplication, address how comments received were considered in the development of the MS4 Program Plan.
- **Responsible Party:** DPW ENRD will coordinate with the Public Affairs Office (PAO) and/or the Network Enterprise Center (NEC) to post notices.

Minimum Control Measure #3: Illicit Discharge Detection and Elimination

(1) Fort Belvoir proposes to delete "BMP 3.4 Maintain compliance with existing Virginia Pollutant Discharge Elimination System (VPDES) registrations". Fort Belvoir has evaluated this BMP and has determined that because the VPDES permits have reporting requirements that are mandatory by law, this BMP does not accomplish additional stormwater quality protection and is redundant.

(2) Revise "BMP 3.3 Inform Installation Staff of Hazards Associated with Illicit Discharge" to provide clarity on the difference between BMP 3.3 and BMP 3.11 Develop and Provide an Integrated Training Program.

(3) Revise "BMP 3.5 Evaluate Storm Drain Outfalls" as follows to align goals of this BMP with a permit requirement of performing an outfall reconnaissance inventory of 50 outfalls annually.

(4) Fort Belvoir proposes to move existing BMP 2.2 Support Family Housing Orientation and BMP 2.3 Implement Fort Belvoir Pollution Complaint "Hot Line" to the "Minimum Control Measure #3: Illicit Discharge Detection and Elimination" Section of the MS4 Program Plan since these two BMPs are designed to minimize and report illicit discharges and renumber this section accordingly.

(5) Because BMP 3.4 was proposed for deletion, BMPs 3.5 – 3.11 were renumbered to BMP 3.4 – BMP 3.10

MCM#4 Construction Site Stormwater Runoff Control

Revise BMPs 4.1 – 4.5 to include:

- Clarification that Fort Belvoir staff responsible for construction plan review are Virginia Certified Erosion and Sediment Control Plan Reviewers;
- Clarification that the design engineer is a Virginia Professional Engineer;
- Clarification of what construction submittals are required by DPW prior to issuance of the Land Disturbance Letter;
- Clarification that construction designs are to comply with Virginia Erosion and Sediment Control and Stormwater Management regulations;
- Update of annual reporting requirements for site inspections.

MCM#5 Post-Construction Stormwater Management in New Development

- (1) Revise "BMP 5.1 Establish a Construction Project Review Procedure" to clarify that stormwater design engineer must be Virginia Profession Engineer and training requirements for DPW ENRD personnel responsible for stormwater design review.
- (2) Revise "BMP 5.2 Develop a Stormwater management Facility Tracking System" to include information listed in 4VAC50-60-1240, Section II, B.5.e.
- (3) Revise the existing "BMP 5.4 Present Sustainable Development Considerations/New Technologies" Measurable Goal of "develop and maintain a **training module** on Low Impact Development on the Fort Belvoir ENRD website that focuses on designing for low impact and sustainable development" with "develop and maintain **information** on the Fort Belvoir ENRD website that focuses on designing for low impact and sustainable development."
- (4) Revise the existing "BMP 5.6 Corrections of Existing Watersheds" Reporting and Recordkeeping requirements to clarify that for the annual report, Fort Belvoir will provide a narrative description of activities for the reporting period and update the EXCEL database for the stormwater management facility inventory to reflect work conducted.
- (5) Recommend revising and moving "BMP 6.4 Implement Periodic Inspection and Clean Out of Catch Basins and "BMP 6.5 Ensure Functionality of Existing Stormwater Management Structures" to Section 5 since these BMPs involve operations and maintenance of stormwater management facilities/BMPs and are a function of Minimum Control Measure #5, "Post-Construction Runoff Control". Renumber BMPs under MCM#5 accordingly.

MCM#6 Pollution Prevention/Good Housekeeping for Municipal Operations

- (1) Revise "BMP 6.1 Develop Installation Operations and Maintenance Training Materials" to reflect training requirements identified in 4VAC50-60-1240, Section II B.6.d.
- (2) Revise "BMP 6.3 Support Street Sweeping Activities" Reporting and Recordkeeping requirements to clarify that for the annual report, a narrative description of street sweeping activities will be provided.

(3) Recommend revising and moving “BMP 6.4 Implement Periodic Inspection and Clean Out of Catch Basins and “BMP 6.5 Ensure Functionality of Existing Stormwater Management Structures” to Section 5 since these BMPs involve operations and maintenance of stormwater management facilities/BMPs and are a function of Minimum Control Measure #5, “Post-Construction Stormwater Runoff Control”. Renumber BMPs under MCM#6 accordingly.

(4) Add the following BMPs to incorporate new permit requirements:

- **BMP 6.7 Develop and Implement Nutrient Management Plans**

- **Measureable Goal:** In permit year 1, identify all applicable lands where nutrients are applied to a contiguous area of more than one acre. In permit year 2, 15% of all identified acres will be covered by nutrient management plans. In permit year 3, 40% of identified acres will be covered by nutrient management plans. In permit year 4, 75% of identified acres will be covered by nutrient management plans. In permit year 5, 100% of identified acres will be covered by nutrient management plans.

- **Reporting and Record Keeping:** In the annual report, provide a summary that includes: location (latitude and longitude) of each piece of land requiring nutrient management plans, total acreage of lands where turf and landscape nutrient management plans are required and acreage of lands upon which turf and landscape nutrient management plans have been implemented.

- **Responsible Party:** DPW ENRD

- **BMP 6.8 Develop and Implement Stormwater Pollution Prevention Plans (SWPPP)**

- **Measureable Goal:** In permit year 1, identify all municipal high priority facilities to include: composting facilities, equipment storage and maintenance facilities, materials storage yards, pesticide storage facilities, public works yards, recycling facilities, salt storage facilities, solid waste handling and transfer facilities and vehicle storage and maintenance yards. In permit year 2, develop and implement SWPPPs for all high-priority facilities identified in permit year 1.

- **Reporting and Record Keeping:** In the annual report for permit year 1, provide types of high priority facilities identified and locations (latitude and longitude) of each facility requiring a SWPPP. In the annual report for permit year 2, provide a summary of the development and implementation of required SWPPPs. In the annual report for permit years 3 - 5, provide a summary of the implementation of required SWPPPs.

- **Responsible Party:** DPW ENRD

- f. **Notice that the operator is relying on another government entity to satisfy some of the permit obligations:** Not applicable.
- g. **Approval status of any programs pursuant to Section IIC (if appropriate), or the progress towards achieving full approval of these programs:** Not applicable.
- h. **Information required pursuant to Section I B 9:** Historic use of PCBs, outfall reconnaissance inventory, characterization of runoff and BMP effectiveness is in the process of being analyzed as discussed under PCBs TMDL, pages 1-3 of this report. Once these tasks are completed, then the quantity of PCBs discharged in stormwater by Fort Belvoir can be calculated.
- i. **The number of illicit discharges identified and the narrative on how they were controlled or eliminated pursuant to Section II B 3 f:** One illicit discharge was reported to Virginia Department of Environmental Quality and Department of Conservation and Recreation for a discharge that occurred on September 7, 2012. During a filter backwash at Benyaurd Indoor Pool, Building 182, the sanitary drain overflowed and went into a grate which discharges outside and into a stream. Backwash procedures evaluated to eliminate overflow of sanitary drain. A long-term solution is underway to disconnect the surge chamber drain from the storm sewer and connect the drain to the sanitary sewer.
- j. **Regulated land-disturbing activities data tracked under Section II 4 c:**
From July 1, 2012 to June 30, 2013, there were a total of 24 land disturbing activities that were required to obtain a VSMP permit with an associated disturbed acreage of 289.91 acres.
- k. **All known permanent stormwater management facility data tracked under Section II B 5 b (6) submitted in a database format as prescribed by the department. Upon filing of this list, subsequent reports shall only include those new stormwater management facilities that have been brought online:** See Appendix A for new stormwater management facilities that were brought online during this reporting period. In addition, the July 1, 2011 – June 30, 2012 was updated as more information became available post construction and is also provided in Appendix A.
- l. **A list of any new or terminated signed agreements between the operator and any applicable third parties where the operator has entered into an agreement in order to implement minimum control measures or portions of minimum control measures:** Not applicable.
- m. **Copies of any written comments received during the public comment period regarding the MS4 Program Plan or any modifications:** No comments received.

**U.S. Army, Fort Belvoir, Virginia
Municipal Separate Storm Sewer Systems
(MS4) Program Plan**

For

**Virginia General Permit for Small Municipal
Separate Storm Sewer Systems
VPDES Permit #VAR040093**



Proposed Revision: September 2013

**Regulated Small MS4: Fort Belvoir Military Installation
Fairfax County, Virginia**

**Regulated Small MS4 Operator: U.S. Army Garrison,
Fort Belvoir
9820 Flagler Road
Fort Belvoir, Virginia 22060**

1. BACKGROUND

In accordance with the requirements set forth in the Virginia Stormwater Management Act and the Virginia Stormwater Management Program (VSMP) Permit regulations, this MS4 Program Plan identifies the minimum control measures to be implemented at properties owned and operated by the U.S. Army Garrison Fort Belvoir (USAG, FB) (Fort Belvoir, Fort Belvoir North Area).

Rivanna Station, located north of Charlottesville, Virginia, is owned by USAG, FB. As stated in 4VAC50-60-1210 Section A.1, operators of MS4s are regulated if they operate a small MS4 located in an urbanized area as determined by the latest Decennial Census by the Bureau of Census. The 2010 Census Urbanized Area Reference Map for Charlottesville, Virginia shows that Rivanna Station is not located within an area designated as "Urbanized Area" or "Urban Cluster". Therefore, USAG, FB is not required to obtain an MS4 permit for Rivanna Station.

Humpreys Engineer Center (HEC) is immediately adjacent to Fort Belvoir on the northeastern corner (approximately 585 acres) and is owned and operated by U.S. Army Corps of Engineers and is not included in the Fort Belvoir MS4 permit.

This plan details the framework for a comprehensive program to minimize stormwater pollution by identifying the best management practices (BMPs), measurable goals, and responsible parties for achieving compliance in accordance with 4VAC50-60-1240, Section IIB of the VSMP Phase II MS4 General Permit. Unless specifically noted, the minimum control measures described within this stormwater program plan will be implemented on a regional scale at the above referenced properties.

2. HYDROLOGIC UNIT CODES

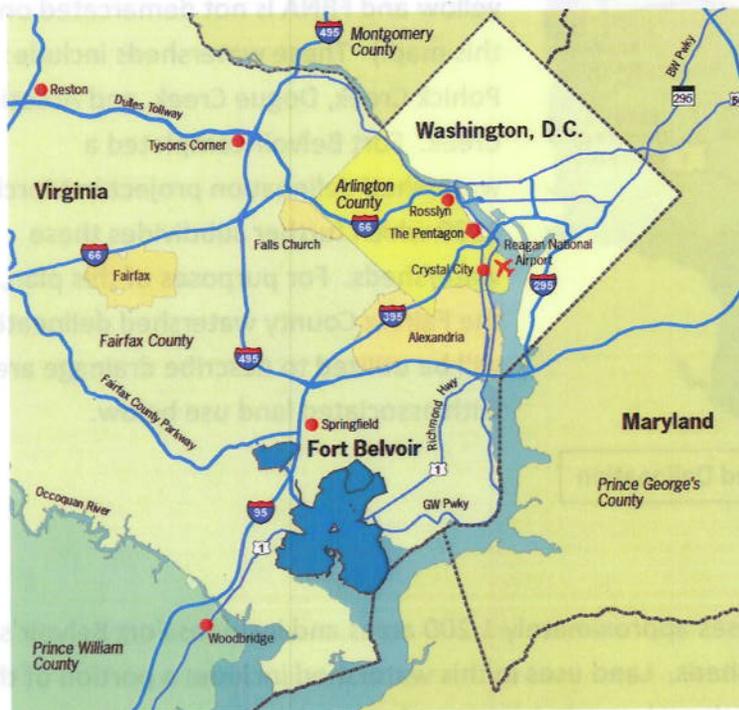
The Hydrologic Unit Codes (HUC) identified in the most recent version of Virginia's 6th Order National Watershed Boundary Dataset as receiving discharges or have the potential to receive discharges from the Fort Belvoir MS4 are as follows:

- PL27 Dogue Creek
- PL28 Potomac River – Little Hunting Creek
- PL29 Pohick Creek
- PL30 Accotink Creek

These areas were determined by using the Virginia Department of Conservation and Recreation (VADCR) Interactive Map of Virginia Hydrologic Units found at:

<http://dswcapps.dcr.virginia.gov/htdocs/maps/HUExplorer.htm>. All stormwater discharges from Fort Belvoir eventually enter the Potomac River.

3. ESTIMATED DRAINAGE AREA AND LAND USE



Fort Belvoir consists of approximately 8,500 acres and is divided into two broad land areas: Main Post and Fort Belvoir North Area (FBNA) with Main Post being located west of I-95 and FBNA being located east of I-95 (Figure 3-1. Location Map) **Note:** HEC is also shaded as bright blue in the north-eastern corner of Fort Belvoir but is not included in this MS4 Permit.



Figure 3-2. Fairfax County Watershed Delineation

Based on the Fairfax County watershed mapping, Fort Belvoir has three watersheds as delineated by Fairfax County. (Fort Belvoir is shaded in light yellow and FBNA is not demarcated on this map.) These watersheds include: Pohick Creek, Dogue Creek, and Accotink Creek. Fort Belvoir completed a watershed delineation project in March 1999 which further subdivides these watersheds. For purposes of this plan, the Fairfax County watershed delineation will be utilized to describe drainage areas with associated land use below.

Pohick Creek Watershed encompasses approximately 1,200 acres and includes Fort Belvoir’s Pohick Creek and Pohick Bay watersheds. Land uses in this watershed include: a portion of the Accotink Bay Wildlife Refuge, undeveloped wooded areas and operational ranges for engineer/troop training.

Accotink Creek Watershed encompasses approximately 4,005 acres and includes FBNA (approximately 800 acres). FBNA land uses include a campus for a major mission partner and associated support facilities with approximately 300 acres that are undeveloped. On Fort Belvoir Main Post, this watershed includes major mission partners requiring secure campuses, Davison Army Airfield (DAAF), two 18-hole golf courses, an elementary school, administration facilities and a clustering of community facilities (post exchange, commissary, convenience store, gas station, bank and chapel) and a portion of the Accotink Bay Wildlife Refuge.

Dogue Creek Watershed encompasses approximately 3,880 acres and includes Fort Belvoir’s Dogue Creek, Accotink Bay, Potomac River and Gunston Cove watersheds. Land uses in this watershed include: Jackson Miles Abbott Wetland Refuge, a family housing area, and Humphreys Engineer Center to the north of U.S. Route 1, and family housing areas, administration facilities, medical services, education, research and development,

community/recreational facilities, the T-17 Wildlife Refuge and a portion of the Accotink Bay Wildlife Refuge to the south of U.S. Route 1.

4. IMPAIRED WATERS

Based on a review of the 2012 Draft *Water Quality Assessment and Impaired Waters Integrated Report*, Virginia Department of Environmental Quality, dated March 2012, the Fort Belvoir MS4 discharges into the impaired receiving surface waters listed in Table 1.

Table 1. Impaired Receiving Surface Waters

Cause Group Code <i>Impaired Use</i>	Water Name <i>Cause</i>	Cause Category	Initial List Date	TMDL Development Date
A15R-01-PCB <i>Fish Consumption</i>	Accotink Creek <i>PCB in Fish Tissue</i>	5A	2010	2022
A15E-01-PH <i>Aquatic Life</i>	Pohick Bay <i>pH</i>	5A	2012	2024
A16E-01-BZOKFL <i>Fish Consumption</i>	Pohick Creek <i>Benzo{k}fluoranthene</i>	5A	2002	2014
A16R-01-BAC <i>Recreation</i>	Pohick Creek <i>Escherichia coli</i>	5A	2006	2018
A12E-01-PCB <i>Fish Consumption</i>	Potomac River Embayments <i>PCB in Fish Tissue</i>	4A	2006	9/28/2007 Rev. 10/31/2007
A15R-01-BAC <i>Recreation</i>	Accotink Creek <i>Escherichia coli</i>	4A	2004	2016

5. TOTAL MAXIMUM DAILY LOAD (TMDLs) Waste Load Allocation (WLA)

The special conditions found within the Phase II MS4 Program requirement at 4VAC50-60-1240 Section I. B. states:

“B. Special conditions. A total maximum daily load (TMDL) approved by the State Water Control Board may include a wasteload allocation to the regulated small MS4 that identified the pollutant for which stormwater controls are necessary for the surface water to meet water quality standards. The pollutant identified in a wasteload allocation as of the effective date of this permit must be addressed through the measurable goals of the MS4 Program Plan. A wasteload allocation does not establish that the operator of a regulated small MS4 is in or out of compliance with the conditions of this permit.”

If a WLA has been assigned to an MS4, the operator of the MS4 must provide schedules and strategies to ensure the MS4 Program is “consistent with the assumptions of the TMDL WLA, within 18 months of permit coverage.”

Table 2 lists TMDLs that have been issued and their applicability to Fort Belvoir MS4.

Table 2. TMDLs Issued

Name of document	Date Issued	Waste Load Allocation (WLA) for Regulated Stormwater (MS4)	Percent Reduction (%)
<i>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</i>	September 28, 2007; revised October 31, 2007	Accotink Creek 0.0992 g PCBs/year Dogue Creek 20.2 g PCBs/year Gunston Cove 0.517 g PCBs/year Pohick Creek 7.58 g PCBs/year	92.0 65.7 87.1 61.2
<i>Bacteria TMDL for the Lower Accotink Creek Watershed</i>	September 2008	1.73E+12 cfu/year	97.00
<i>TMDL for Benthic Impairments in the Accotink Watershed (Fairfax County, City of Fairfax and Town of Vienna, Virginia)</i>	April 18, 2011	This TMDL established by the United States Environmental Protection Agency, Region III was overturned in the U.S. District Court on January 3, 2013 and is not applicable.	N/A
<i>*Chesapeake Bay Total Maximum Daily Load for Nitrogen, Phosphorous and Sediment</i>	December 29, 2010	N/A	N/A

* Fort Belvoir was not assigned an individual WLA for the Chesapeake Bay TMDL.

5.1 Polychlorinated Biphenyls (PCBs) TMDL

A review of the Virginia Department of Environmental Quality (VADEQ) Approved and Draft Implementation Plans Listing found on the VADEQ website (<http://www.deq.state.va.us/Programs/Water/WaterQualityInformationTMDLs/TMDL/TMDLImplementation/TMDLImplementationPlans.aspx>) was conducted. A PCB TMDL implementation plan was not listed on the VADEQ website.

The "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" dated September 30, 2007 states under the section titled "Implementation Plan Development" that:

"The WLA component of the TMDL is implemented through the NPDES permit program."

At the request of VADCR, a PCBs TMDL Schedule for Implementation was provided in a letter dated May 30, 2012, and an update on the Schedule of Implementation is provided below in Table 3.

Table 3. PCB TMDL Schedule for Implementation

MS4 Permit Citation	Action	Schedule	Status
Section I.B.1	Update the MS4 Program Plan to include PCBs TMDL allocations.	Completed September 2013	Completed September 2013 as part of the Annual Report.
Section I.B.2	Document historical use of PCBs at Fort Belvoir to determine extent of drainage of PCBs storage areas to impaired waters (Accotink Creek, Dogue Creek, Pohick Creek and Gunston Cove).	Completed March 2013	Historical use documented in the Final <i>Virginia Pollutant Discharge Elimination System MS4 Permit, Fort Belvoir PCB TMDL Action Plan</i> prepared by Tidewater, Inc. dated March 2013.
Section 1.B.3	Integrate an awareness campaign into its existing public education and outreach program that promotes methods to eliminate and reduce discharges of the pollutant identified in the WLA.	May 2014	Contract awarded in August 2013 to develop training module for illicit discharges. PCBs to be included in training module.
Section 1.B.4	Incorporate applicable Best Management Practices (BMPs) identified in the TMDL implementation plan.	Completed September 2013	Incorporated into the MS4 Program Plan as part of the MS4 Annual Report.
Section 1B.5	Perform an outfall reconnaissance inventory (ORI).	November 2012	A survey of ten sites was completed and results are documented in the Final <i>Virginia Pollutant Discharge Elimination System MS4 Permit, Fort Belvoir PCB TMDL Action Plan</i> prepared by Tidewater, Inc. dated March 2013.
Section	Characterize runoff (Conduct fall/spring	October 2013 –	Based on the ORI results,

Fort Belvoir Municipal Separate Storm Sewer Systems (MS4) Program Plan

MS4 Permit Citation	Action	Schedule	Status
1.B.6.a-b.	sampling) of areas where PCBs are currently stored, has been transferred, transported or historically disposed of in a manner that would expose it to precipitation.	December 2014	two outfalls were identified that require sampling for characterization of runoff. Funding for sampling was received in FY2013. Contract to be awarded by 30 September 2013.
Section 1.B.6.c	Determine if BMPs currently being used are sufficient to address PCBs issues. If not, develop and implement a schedule to minimize the discharge of PCBs. Include findings in 2012 Annual report.	Once the new MS4 permit becomes effective (July 2013), review new permit requirements and incorporate recommended BMPs into the MS4 Program Plan.	Completed in December 2012.
Section 1.B.7	Conduct annual characterization for each impaired water segment, as necessary, once characterization of runoff has been completed.	2015	Requirement to conduct annual characterization to be determined once characterization of runoff has been completed for two outfalls.
Section 1.B.8	Update MS4 Program Plan to include any new information regarding the TMDL.	Updated when new information becomes available.	Future revisions of MS4 Program Plan to be updated as needed.
Section 1.B.9.a-b	Annual reporting requirements for the PCB TMDL to be included in the 2013 Annual Report.	October 1, 2013	Completed October 1, 2013 as part of the MS4 Annual Report.

The Final Fort Belvoir PCB TMDL Action Plan was completed in March 2013 which includes documentation for actions in Table 3 that have been annotated as completed. In addition, the Plan recommended BMPs that can be addressed under the MS4 permit to minimize discharge of PCBs as well as a sampling plan for outfalls that were identified in the ORI to characterize annual runoff. The complete PCB TMDL Action Plan is incorporated into the MS4 Program Plan by reference and is available upon request. The recommended BMPs from the final PCB Action Plan have been incorporated into the MS4 Program Plan below:

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

Information to be included in information sheet is as follows: basic facts about PCBs and the PCB TMDL, summary of where PCBs were historically found at Fort Belvoir, what has been done to eliminate PCB contamination and what an individual should do if they encounter an old transformer.

- ✚ **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.

- ✚ **Reporting and Record Keeping:** In the annual report, provide a narrative on the progress of development and include copies of education materials that have been developed during the reporting period

- ✚ **Responsible Party:** DPW ENRD will coordinate with various departments to insure widest dissemination of information to include (PAO, NEC, The Michaels' Group, etc.).

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

- ✚ **Measurable Goal:** Annually update and maintain a GIS Data Layer that includes the locations of past and present PCB sites.

- ✚ **Reporting and Record Keeping:** In the annual report, provide a narrative on updates conducted during the reporting period.

- ✚ **Responsible Party:** DPW ENRD will coordinate with GIS department for maintenance of data layer.

- **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.

- ✚ **Reporting and Record Keeping:** In the annual report, provide a narrative on the progress of development and include sampling results and characterization of runoff.

- ✚ **Responsible Party:** DPW ENRD

- **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 of possible PCB leaks. In permit years 3-5, implement training plan.

- ✚ **Reporting and Record Keeping:** In the annual report, provide a narrative on the progress of development and include copies of education materials that have been developed during the reporting period.

- ✚ **Responsible Party:** DPW ENRD

- **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.

- ✚ **Reporting and Record Keeping:** In the annual report, provide a narrative on the site visits and progress of remediation.

- ✚ **Responsible Party:** DPW ENRD

5.2 Bacteria TMDL – Accotink Creek

A review of the VADEQ Approved and Draft Implementation Plans Listing found on the VADEQ website

(<http://www.deq.state.va.us/Programs/Water/WaterQualityInformationTMDLs/TMDL/TMDLImplementation/TMDLImplementationPlans.aspx>) was conducted. A Bacteria TMDL implementation plan has not been developed by the Commonwealth of Virginia.

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" are to be updated by 36 months after permit coverage. A Fort Belvoir Bacteria TMDL Action Plan will be updated by 1 July 2016.

5.3 Chesapeake Bay TMDL for Nitrogen, Phosphorous and Sediment

The *Chesapeake Bay TMDL for Nitrogen, Phosphorous and Sediment* dated December 29, 2010 did not assign an individual WLA to Fort Belvoir. In response to this TMDL, the U.S. Environmental Protection Agency required the individual States to submit Watershed Implementation Plans. The Commonwealth of Virginia developed and submitted the following watershed implementation plans (WIP) to address the Chesapeake Bay TMDL:

- Phase I Chesapeake Bay TMDL Watershed Implementation Plan , November 29, 2010
- Phase II Chesapeake Bay TMDL Watershed Implementation Plan, March 30, 2012

The Phase II WIP identified strategies for federal facilities which included:

- In accordance with Executive Order (EO) 13514, Section 438 of Energy Independence and Security Act (EISA) and EO 13508, all federal facilities are to demonstrate leadership and commitment to controlling pollution, leveraging expertise and resources to contribute significantly to improving the health of the Chesapeake Bay.
- Virginia, Department of Defense and other federal agencies will jointly develop a Memorandum of Understanding to formalize commitment to leading by example in meeting Chesapeake Bay water quality goals and achieving the necessary reductions.
- Virginia will utilize MS4 permits to ensure that BMP implementation on existing developed regulated federal lands achieves nutrient and sediment reductions equivalent to Level 2 scoping run reductions by 2025. Level 2 (L2) implementation equates to an average reduction of 9 percent of nitrogen loads, 16 percent phosphorous loads and 20 percent of sediment loads from impervious regulated acres and 6 percent of nitrogen loads, 7.25 percent of phosphorous loads and 8.75 percent sediment loads beyond 2009 progress loads for pervious regulated acreage.
- Federal MS4 operators will be given three full permit cycles (15 years) to implement the necessary reductions to meet the L2 implementation levels.

The U.S. Army Corps of Engineers (USACE) 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 is currently under development.

Phase II of the USACE project will include the Chesapeake Bay TMDL Action Plan which is scheduled for FY2014. The Virginia Department of Environmental Quality issued a Draft

"Guidance for the Chesapeake Bay TMDL Action Plans" and comments were due on August 30, 2013. The Chesapeake Bay TMDL Action Plan is due by July 1, 2015. The Department of the Army will continue to work with VADEQ in the development of Chesapeake Bay TMDL Action Plans for Virginia Army Installations.

In addition, on July 1, 2012, Fort Belvoir implemented the requirement to utilize the Runoff Reduction Method as outlined in the stormwater design criteria (4VAC50-60) for all new projects requiring stormwater design.

6. MINIMUM CONTROL MEASURES

The Phase II MS4 Program requirement found in 4VAC50-60-1240 Section II.A states:

"The operator of a small MS4 must develop, implement, and enforce a MS4 Program designed to reduce the discharge of pollutants from the small MS4 to the maximum extent practicable (MEP), to protect water quality, to ensure compliance by the operator with water quality standards, and to satisfy the appropriate water quality requirements of the Clean Water Act and its attendant regulations. The MS4 Program must include the minimum control measures described in paragraph B of this section. Implementation of best management practices consistent with the provisions of an iterative MS4 Program required pursuant to this section constitutes compliance with the standard of reducing pollutants to the "maximum extent practicable", protects water quality in the absence of a TMDL wasteload allocation, ensures compliance by the operator with water quality standards, and satisfies the appropriate water quality requirements of the Clean Water Act and regulations in the absence of a TMDL WLA."

The six minimum control measures described in 4VAC50-60-1240 Section II.B are:

- Public education and outreach on stormwater impacts
- Public involvement and participation
- Illicit discharge detection and elimination
- Construction site stormwater runoff control
- Post-construction stormwater management in new development or redevelopment
- Pollution prevention/good housekeeping for military operations

6.1 Minimum Control Measure #1: Public Education and Outreach on Stormwater Impacts

The educational materials and/or public outreach program(s) implemented will inform staff, residents and contractors about the steps that can be taken to reduce stormwater pollution to the maximum extent practicable (MEP). BMPs identified in this plan as BMP 1.1 through BMP

1.3 will be executed to satisfy the public education and outreach requirements set forth by Section II.B.1 of the General Permit (VAR04) found in 4VAC50-60-1240. Recommended revisions to the BMPs were proposed in the 2013 Annual Report to incorporate new permit requirements which took effect on July 1, 2013.

- **BMP 1.1 Support Accotink Bay Wildlife Refuge Environmental Education Center**

The Accotink Bay Wildlife Refuge Environmental Education Center will provide activities to reach children attending Fort Belvoir Elementary with educational topics on stormwater pollution and prevention.

- ✚ **Measurable Goal:** Support one activity per year, in permit years 1 through 5 to reach children attending Fort Belvoir Elementary on the effects of stormwater discharge on water quality.

- ✚ **Reporting and Record Keeping:** In the annual report, include a copy of all educational materials distributed and number of people in attendance for each activity.

- ✚ **Responsible Party:** DPW ENRD

- **BMP 1.2 Present Stormwater and General Watershed Information on the Fort Belvoir Website**

The Fort Belvoir website, <http://www.belvoir.army.mil/default.asp> will be utilized to present stormwater and watershed information.

- ✚ **Measurable Goal:** In permit year 1, revise information presented regarding impacts of stormwater discharge to receiving waters and general watershed data on the Fort Belvoir DPW ENRD website (<http://www.belvoir.army.mil/dpw/enrd/enrdMain.asp>), a sub-site of the main Fort Belvoir website. In permit years 2 - 5, review and revise, as needed, annually.

- ✚ **Reporting and Record Keeping:** In the annual report, include a copy of the website address and content. If revisions were made, include the date(s) that the website was revised.

- ✚ **Responsible Party:** DPW ENRD will coordinate with the Public Affairs Office (PAO) and the Network Enterprise Center (NEC) to make revisions to the website.

- **BMP 1.3 Present Information on Watershed Protection to School Groups**

Attend Fort Belvoir Elementary School's Annual Career Day. Set up displays and make presentations regarding protection of the Chesapeake Bay watershed.

- ✚ **Measurable Goal:** In permit years 1 - 5, attend Fort Belvoir Elementary School's Annual Career Day.

- ✚ **Reporting and Record Keeping:** In the annual report, include a copy of all educational materials distributed and number of people in attendance for Career Day.

- ✚ **Responsible Party:** DPW ENRD

- **BMP 1.4 Develop and Implement A Public Outreach Plan**

- ✚ **Measurable Goal:** In permit year 1, develop a Public Outreach Plan in accordance with the conditions set forth in 4VAC50-60-1240 Section II, B.1.

In permit years 2 - 5, annually conduct sufficient education and outreach activities designed to reach an equivalent of 20% of each high-priority issue target audience.

- ✚ **Reporting and Record Keeping:** 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.

- ✚ **Responsible Party:** DPW ENRD will coordinate with the PAO to develop a Public Outreach Plan. DPW ENRD will conduct sufficient education and outreach activities.

6.2 Minimum Control Measure #2: Public Involvement/Participation

The BMPs identified in this plan as BMP 2.1 through BMP 2.3 will be executed to satisfy the public education and outreach requirements set forth by Section II.B.2 of the General Permit (VAR04) found in 4VAC50-60-1240. Recommended revisions to the BMPs were proposed in the 2013 Annual Report to incorporate new permit requirements which took effect on July 1, 2013.

- **BMP 2.1 Public Participation**

- **Measureable Goal:** In permit years 1 -5, participate, through promotion, sponsorship or other involvement, in a minimum of four local activities annually. Examples of possible activities include: Potomac River Cleanup, Richmond Highway (Route 1) Cleanup, community service projects with scout groups, hazardous waste cleanup days, etc. Involve tenant agencies, schools, community partners and other members of the public with the goal of increasing public participation to reduce stormwater pollutant loads, improve water quality and support local restoration and clean-up projects, programs, groups, meetings or other opportunities for public involvement

- **Reporting and Record Keeping:** In the annual report, include information on the event to include date the activity was held, any photographs taken, and approximate number of participants.

- **Responsible Party:** DPW ENRD

- **BMP 2.2 Publish the MS4 Program Plan and Annual Reports on the Fort Belvoir Website**

- **Measureable Goal:** Update the MS4 Program Plan at a minimum once per year and in conjunction with the annual report. Post copies of the MS4 Program Plan on the Fort Belvoir webpage at a minimum of once a year and within 30 days of submittal of the annual report to the Department of Environmental Quality (DEQ). Post copies of each annual report on the Fort Belvoir webpage within 30 days of submittal to DEQ and retain copies of annual reports online for the duration of the MS4 permit.

- **Reporting and Record Keeping:** In the annual report, provide the web link to the MS4 Program Plan and annual reports.

- **Responsible Party:** DPW ENRD will coordinate with the PAO and the NEC to make revisions to the website.

- **BMP 2.3 Provide for Public Notification and Receipt of Comments on the MS4 Program Plan**

- **Measurable Goal:** In permit year 5, prior to submittal of the registration statement, provide for a public notification of a 30-day review and comment period of the MS4 Program Plan which may include a notice in

the Belvoir Eagle and/or posting of the notice on the Fort Belvoir Facebook site and/or posting of the notice on the Fort Belvoir website.

✚ **Reporting and Record Keeping:** As part of the reapplication, address how comments received were considered in the development of the MS4 Program Plan.

✚ **Responsible Party:** DPW ENRD will coordinate with the PAO and/or the NEC to post notices.

6.3 Minimum Control Measure #3: Illicit Discharge Detection and Elimination

The BMPs identified in this plan as BMP 3.1 through BMP 3.12 will be executed to satisfy the Illicit discharge detection and elimination requirements set forth by Section II.B.3 of the General Permit (VAR04). Recommended revisions to the BMPs were proposed in the 2013 Annual Report to incorporate new permit requirements which took effect on July 1, 2013.

- **BMP 3.1 Develop, Implement, Update and Support Geospatial Information System (GIS) layers**

Fort Belvoir manages GIS data for all watersheds and sub-watersheds including storm sewer utilities and stormwater best management practices. The GIS aids Fort Belvoir in determining the spatial location of stormwater system components and enhances Fort Belvoir's ability to locate the receiving waters of a particular stormwater system in the event that a spill or an illicit discharge is identified.

✚ **Measurable Goal:** In permit year 1, review existing GIS data layers to determine if existing layers are updated and identify additional data layers needed, if any. In permit years 2 -5, develop, implement, update and support GIS data layers containing stormwater systems (to include outfalls and stormwater management facilities), watershed/sub-watershed boundaries, utility data and other information pertinent to stormwater management to reflect changes or new information.

✚ **Reporting and Record Keeping:** In the annual report, provide a narrative on what GIS data layers were updated or added. Maintain GIS Stormwater Mapbook for reference.

✚ **Responsible Party:** The Directorate of Public Works, Environmental and Natural Resources Division will coordinate with The Directorate of Public Works, GIS office.

- **BMP 3.2 Develop Methods to Detect Illicit Discharges**

Develop standardized procedures and processes to perform evaluations of various facility or installation operations in order to identify illicit discharges.

- ✚ **Measurable Goal:** In permit year 1, 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.

- ✚ **Reporting and Record Keeping:** Document activities conducted and in the annual report, provide a summary of activities that were conducted to identify illicit discharges.

- ✚ **Responsible Party:** DPW ENRD

- **BMP 3.3 Inform the Public of Water Quality Impacts Associate with Illicit Discharges**

Use various communication media (articles, newsletters, presentations, training modules, website etc.) to provide educational information on illicit discharge awareness.

- ✚ **Measurable Goal:** In permit year 1 - 5, provide information to the Fort Belvoir public on the identification and water quality effect of illicit discharges.

- ✚ **Reporting and Record Keeping:** In the annual report, document dates and the communication media used, and provide copies of the information presented.

- ✚ **Responsible Party:** DPW ENRD

- **BMP 3.4 Evaluate Storm Drain Outfalls**

By performing a reconnaissance inventory inspection on identified outfalls during dry weather, illicit discharges can be detected and measures can be taken to eliminate illicit discharges.

- ✚ **Measurable Goal:** In permit years 1 - 5, perform an outfall reconnaissance inventory of 50 identified outfalls to detect illicit discharges utilizing methodology noted in the U.S. Environmental Protection Agency's Illicit Discharge Detection and Elimination Guidance Manual dated October 2004.

- ✚ **Reporting and Record Keeping:** Maintain file copies on inspection sheets, photographs and comprehensive map of outfalls inspected. In

the annual report, provide how many outfall inspections were conducted and findings.

✚ **Responsible Party:** DPW ENRD

- **BMP 3.5 Perform Illicit Discharge Detection and Mitigation Procedures**

✚ **Measurable Goal:** In permit years 2 - 5, perform previously developed illicit discharge detection procedures (BMP 3.1) at five installation facilities with the potential for illicit discharge, develop recommendations for potential mitigation actions.

✚ **Reporting and Record Keeping:** Maintain file copies of illicit discharge detection procedures that were performed and locations. In the annual report, provide locations and findings.

✚ **Responsible Party:** DPW ENRD

- **BMP 3.6 Develop a Plan for Operations That May Affect Stormwater**

✚ **Measurable Goal:** In permit year 1, develop an assessment plan to identify and evaluate other routine operations such as waterline flushing, golf course irrigation, basement drains and condensation drains which may have an impact on stormwater quality

✚ **Reporting and Record Keeping.** In the annual report, provide narrative on progress of the development of the assessment plan.

✚ **Responsible Party:** DPW ENRD

- **BMP 3.7 Perform Routine Operation Assessments and Develop BMPs**

✚ **Measurable Goal:** By the end of permit year 4, implement the assessment plan (developed for BMP 3.7) to identify potential impacts to stormwater quality from various routine operations. Develop BMPs or engineering controls to address identified non-stormwater discharges. Incorporate engineering controls or implement BMPs to address identified non-stormwater discharges that impact stormwater quality. In permit year 5, perform inspections and necessary maintenance on engineering controls or BMPs to ensure functionality.

✚ **Reporting and Record Keeping:** In the annual report, provide narrative on implementation of assessment plan to include identification of any impacts to stormwater quality from various routine operations, identification of any BMPs or engineering controls that were developed to address identified non-stormwater discharges that impact stormwater

quality and a summary of the number of inspections and associated maintenance that were performed.

🚧 **Responsible Party:** DPW ENRD

- **BMP 3.8 Evaluate Potential Combined Sewer Overflow Connections.**

🚧 **Measurable Goal:** Conduct and/or evaluate studies of potential combined sewer overflow connections, develop recommendations and or mitigation actions.

🚧 **Reporting and Record Keeping:** In the annual report, provide narrative on any combined sewer overflow connections that were identified and recommendations and/or mitigation actions that were made to correct deficiencies noted.

🚧 **Responsible Party:** DPW ENRD and Operations and Maintenance (O&M) Division will coordinate with American Water, the privatized water/wastewater provider, to collect data on combined sewer overflow connections.

- **BMP 3.9 Evaluate Stormwater Sampling**

🚧 **Measurable Goal:** Evaluate the stormwater system for the potential development of a sampling strategy and, if appropriate, develop a detailed sampling plan and perform sampling in accordance with plan (as needed).

🚧 **Reporting and Record Keeping:** In the annual report, provide narrative on evaluation of stormwater sampling.

🚧 **Responsible Party:** DPW ENRD

- **BMP 3.10 Develop and Provide an Integrated Annual Training Program**

🚧 **Measurable Goals:** In permit years 1 - 5, conduct annual training for military and civilian staff, Fort Belvoir operations and maintenance contractors, Fort Belvoir partnering contractors and Fort Belvoir specialized contractors performing related industrial practices to increase awareness of the implications of illicit discharges and improper waste disposal.

🚧 **Reporting and Record Keeping:** In the annual report, summarize training dates, number of staff trained and provide a copy of the information used.

🚧 **Responsible Party:** DPW ENRD

- **BMP 3.11 Support Family Housing Orientation**
Develop and distribute materials about dumping waste oil and chemicals in stormwater systems to new housing residents.
 - ✚ **Measurable Goal:** In permit years 1 -5, develop and distribute materials to new housing residents.
 - ✚ **Reporting and Record Keeping:** In the annual report, include a copy of the education materials.
 - ✚ **Responsible Party:** DPW ENRD will coordinate with the housing maintenance contractor.

- **BMP 3.12 Implement Fort Belvoir Pollution Complaint “Hot Line”**
Establish a phone listing accessible to persons living or working on Fort Belvoir in order for them to notify Fort Belvoir staff of concerns, questions, or perceived environmental issues.
 - ✚ **Measurable Goal:** In permit year 1, develop consolidated list of various avenues used for the public to raise a question or concern about environmental protection and publish on the DPW ENRD website and/or in the *Belvoir Eagle*. In permit years 2 - 5, monitor concerns and provide responses to individuals raising questions or concerns.
 - ✚ **Reporting and Record Keeping:** In the annual report, provide a copy of the web posting or newspaper articles and a list of reported concerns and follow-up responses.
 - ✚ **Responsible Party:** DPW ENRD

6.4 Minimum Control Measure #4: Construction Site Stormwater Runoff Control

The BMPs identified in this plan as BMP 4.1 through BMP 4.6 will be executed to satisfy the construction site runoff control requirements set forth by Section II.B.4 of the General Permit (VAR04) found in 4VAC50-60-1240. Recommended revisions to the BMPs were proposed in the 2013 Annual Report to incorporate new permit requirements which took effect on July 1, 2013.

- **BMP 4.1 Establish a Construction Project Review Procedure**
DPW ENRD staff issues a Land Disturbance Letter to construction applicants only after plans have been approved by the Director of Public Works (DPW). DPW requires all construction projects to submit an excavation permit; DPW ENRD staff reviews all excavation permits and

request approved, stamped construction drawings for all projects that disturb more than 2,500 square feet.

🚧 **Measurable Goal:** 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 and state and federal regulations. Procedure will include: requiring signature of a licensed Virginia Professional Engineer attesting that the construction plans and design documents were prepared in accordance with the MS4 Permit and incorporate the minimum standards of the Virginia Erosion and Sediment Control Handbook (VESCH), Virginia Stormwater Management Handbook (VSWH) and Fairfax County Public Facilities Manual (FCPFM) and the Virginia Erosion and Sediment Control and Stormwater Management Regulations. Copies of stormwater design analyses, design plans and erosion and sediment control plans will be routed to Virginia-certified staff at Fort Belvoir for review. Each iteration in the design process must maintain the minimum standards of the VESCH, VSWH, FCPFM and state and federal (Energy Independence and Security Act, Section 438 (EISA 438) regulations and is subject to additional review and deficient or non-compliant documents will be returned to designers for modification and resubmission. Review 100% of construction projects 2500 square feet or greater.

🚧 **Reporting and Record Keeping:** In the annual report, provide a spreadsheet of all construction projects under design review and a copy of the written procedure.

🚧 **Responsible Party:** DPW ENRD

- **BMP 4.2 Communicate the Requirements of the Stormwater Program**

DPW ENRD staff has a checklist that details requirements for stormwater and erosion and sediment control measures and provides the checklist and a copy of the MS4 permit to all design engineers prior to the 35% design submittal. DPW ENRD staff review all construction project plans that are submitted to the DPW. The plans are evaluated for compliance with the MS4 permit, Virginia erosion and sediment control and stormwater management regulations and the Fairfax County Public Facilities Manual.

🚧 **Measurable Goal:** Distribute MS4 permit requirements to designers during initial planning phases of construction projects. All construction

contract packages (including designs and specifications) shall incorporate a requirement to conform to the conditions of the MS4 Permit and Program Plan and Virginia Erosion and Sediment Control and Stormwater Management regulations.

🚧 **Reporting and Record Keeping:** In the annual report, provide a distribution log tracking recipients of MS4 permit requirements and a copy of materials distributed.

🚧 **Responsible Party:** DPW ENRD

- **BMP 4.3 Develop a Tracking System**

All construction packages are required to reference the MS4 Permit on the plans and in the specifications. References are checked before plans are approved and signed by the DPW. The DPW uses the Excavation Permit to track all major and minor construction projects on the installation. Each project is assigned a tracking number and the project description and acreage are recorded in the database.

🚧 **Measurable Goal:** Establish a tracking system to ensure review comments are adequately addressed; include number and acreage of disturbed land. Develop in conjunction with National and Environmental Policy Act (NEPA) and Environmental Management System (EMS) regulation and policies.

🚧 **Reporting and Record Keeping:** In the annual report, provide a copy of the tracking spreadsheet.

🚧 **Responsible Party:** DPW ENRD

- **BMP 4.4 Obtain Registration under Virginia Stormwater Management Permit (VSMP) for Construction Projects**

All construction projects are required to obtain a project-specific VSMP Permit prior to construction. A copy of the registration statement, the stormwater pollution and prevention plan, payment verification and mailing receipt, and Responsible Land Disturber certification is required to be submitted by the construction contractor to the DPW prior to DPW issuing a Land Disturbance Letter and Excavation Permit.

🚧 **Measurable Goal:** Construction projects that disturb 2,500 square feet or greater of land must obtain permit registration under the general VSMP permit for construction projects and must adhere to the requirements of the permit. Incorporate a procedure under the utility clearance permit process to determine construction-VSMP applicability

and verify existence of required erosion control plans prior to utility clearance permit approval.

🚧 **Reporting and Record Keeping:** In the annual report, provide a list of all of the registration statements.

🚧 **Responsible Party:** DPW ENRD

- **BMP 4.5 Initiate Periodic Site Inspections.**

DPW ENRD staff maintains certification as Virginia Erosion and Sediment Control Inspectors and inspect active construction sites once every two weeks. Large construction projects may be supported by contract staff that submits reports to DPW ENRD and the project construction supervisor.

🚧 **Measurable Goal:** Establish periodic inspection procedures to determine adherence to the approved design plan and the construction VSMP permit (as applicable) and to evaluate performance of BMPs and/or engineering controls. Require site inspectors to be Virginia Certified Erosion and Sediment Control Inspectors. Any deficiencies identified during inspection shall be rectified immediately. In the event that the same deficiency is noted during re-inspections an immediate report shall be filed with the Virginia Department of Environmental Quality and site operations shall cease until the deficiency is corrected. Perform site inspections of 100% of construction projects.

🚧 **Reporting and Record Keeping:** In the annual report, submit a copy of the inspection form used and the number of inspections conducted.

🚧 **Responsible Party:** DPW ENRD

- **BMP 4.6 Evaluate Emerging Technologies**

Fort Belvoir continues to evaluate new technology for both erosion and sediment control and stormwater management. The installation is a proponent for Low Impact Development (LID) and advocates for including LID technology in all new developments.

🚧 **Measurable Goal:** Review or evaluate one new product or engineering control designed to reduce soil erosion, consider possibility of use and potential effectiveness.

🚧 **Reporting and Record Keeping:** In the annual report, submit photographs of any LID projects implemented and a list of new technologies evaluated and/or implemented.

🚧 **Responsible Party:** DPW ENRD

6.5 Minimum Control Measure #5: Post-Construction Runoff Control

The BMPs identified in this plan as BMP 5.1 through BMP 5.8 will be executed to satisfy the post-construction runoff control requirements set forth by Section II.B.5 of the General Permit (VAR04) found in 4VAC50-60-1240. Recommended revisions to the BMPs were proposed in the 2013 Annual Report to incorporate new permit requirements which took effect on July 1, 2013.

- **BMP 5.1 Establish a Construction Project Review Procedure**

Fort Belvoir DPW ENRD staff issues a Land Disturbance Letter to construction contractors only after plans have been approved by the DPW. DPW requires all construction contractors to submit an excavation permit. DPW ENRD staff reviews all excavation permits and request approved, stamped construction drawings for all projects that disturb 2,500 square feet or greater. DPW ENRD staff conducts post-construction inspections to evaluate the adequacy of new stormwater management facilities.

✚ **Measurable Goal:** All construction contract packages (including designs and specifications) shall incorporate a requirement to conform to the conditions of the MS4 permit and state and federal regulations. Establish a procedure to review projects to evaluate proposed structural and non-structural BMPs and project compliance with MS4 and Stormwater Management Plan. Procedure will include: requiring signature of a licensed Virginia Professional Engineer attesting that the project was prepared in accordance with the MS4 Permit and incorporates the minimum standards of the VESCH, VSWH and FCPFM and the Virginia Erosion and Sediment Control and Stormwater Management regulations. Copies of stormwater design analyses, design plans and information regarding stormwater control structures will be routed to Virginia - certified staff at Fort Belvoir for review. Each iteration of the design process must maintain the minimum standards of the VESCH, VSWH, FCPFM and state regulations and is subject to additional review; and deficient designs or noncompliant project documents will be returned to designers for modification and resubmission.

✚ **Reporting and Record Keeping:** In the annual report, submit a spreadsheet of all land disturbance letters issued.

✚ **Responsible Party:** DPW ENRD

- **BMP 5.2 Develop a Stormwater Management Facility Tracking System**

The DPW uses the installation GIS and an associated EXCEL spreadsheet to track all permanent stormwater management facilities/BMPs on the installation. Each facility/BMP is assigned a unique identification number and the project description and drainage area are recorded in the database.

- **Measurable Goal:** Establish a tracking system to include information regarding the type of facility/BMP, the latitude and longitude, the total number of acres treated by the facility to include a breakdown of pervious and impervious acres, the date the facility was brought online, the sixth order hydrologic unit (HUC) code, the name of any impaired water segments within each HUC listed, inspection and maintenance dates/information.

- **Reporting and Record Keeping:** In the annual report, submit a spreadsheet of maps of new stormwater management facilities brought online during the reporting period.

- **Responsible Party:** DPW ENRD

- **BMP 5.3 Initiate Periodic Site Inspections**

Fort Belvoir staff is Virginia Certified Stormwater Inspectors and visits active construction sites once every two weeks. Large construction projects may be supported by contract staff and they submit reports to ENRD and the project construction supervisor.

- **Measurable Goal:** Establish periodic inspection procedures to determine adherence to the approved design plans and to observe status of the stormwater management facility/BMP. Establish periodic inspection procedures to determine adherence to the approved design plans and to evaluate performances of BMPs and/or engineering controls. In permit years 1 and 2, Fort Belvoir staff will complete training required for Virginia Certified Stormwater Inspectors. Perform site inspections of 100% of active construction projects and 10% of post-construction projects (annually year).

- **Reporting and Record Keeping:** In the annual report, submit a copy of the inspection form used and the total number of inspections completed.

- **Responsible Party:** DPW ENRD

- **BMP 5.4 Present Sustainable Development Considerations/New Technologies**

Fort Belvoir continues to evaluate new technology for both erosion and sediment control and stormwater management. The installation is a proponent for Low Impact Development (LID) and advocates for including LID technology in all new developments.

- ✚ **Measurable Goal:** Develop and maintain information on Low Impact Development on the Fort Belvoir DPW ENRD website that focuses on designing for low impact and sustainable development.

- ✚ **Reporting and Record Keeping:** In the annual report, include a copy of the website address and content.

- ✚ **Responsible Party:** DPW ENRD will coordinate with the Public Affairs Office (PAO) and the Network Enterprise Center (NEC) to make revisions to the website.

- **BMP 5.5 Audits of Existing Stream Conditions**

Fort Belvoir DPW ENRD staff inspects existing conditions of stream channels annually. Changes are noted and the GIS database is updated.

- ✚ **Measurable Goal:** Perform an audit of the existing conditions of stream channels and banks, outfalls, etc. to include a visual inspection and collection of photographic documentation to allow visual comparisons of existing and future conditions.

- ✚ **Reporting and Record Keeping:** In the annual report, provide a narrative of what inspections were conducted and changes made to the GIS database.

- ✚ **Responsible Party:** DPW ENRD

- **BMP 5.6 Corrections of Existing Watersheds**

Fort Belvoir has identified watershed problems and detailed them in a watershed study. The installation has coordinated with the Army Corps of Engineers Waterways Experiment Station for prescriptive fixes to common problems. Funding shortfalls limited repairs, but requests will be made each year of the permit cycle.

- ✚ **Measurable Goal:** Systematically correct watershed damages caused by existing conditions, poor design of control structures, or inadequate maintenance of control structures. Program and implement an investment program where 10% of identified requirements are executed each year.

- ✚ **Reporting and Record Keeping:** In the annual report, provide a narrative description on work that was accomplished for the reporting period. Update EXCEL database of stormwater management facility inventory to reflect work conducted.
- ✚ **Responsible Party:** DPW ENRD
- **BMP 5.7 Implement Periodic Inspections and Clean Out of Storm Drains**
 - ✚ **Measurable Goal:** Develop inspection and maintenance standards for cleaning of storm drains (curb inlets, yard inlets, storm pipes and concrete ditches) and disposal of collected waste material. Evaluate 25% of the maintenance activities for effectiveness.
 - ✚ **Reporting and Record Keeping:** In the annual report, provide a copy of the inspection and maintenance standards, maintenance log and a map depicting locations.
 - ✚ **Responsible Party:** DPW ENRD will work with the O&M Division to develop and control the base operations contract for reporting documents.
- **BMP 5.8 Ensure Functionality of Existing Storm Water Management Structures**

An inventory of stormwater structures was completed in January 2012 which prioritizes deficient stormwater structures.

 - ✚ **Measurable Goal:** Develop an inspection and maintenance plan to ensure functionality of existing stormwater best management practices (BMPs) to include: detention, retention, bioretention, filtration, infiltration and manufactured treatment devices using inspection schedules to identify routine, preventative and special maintenance requirements. Inspect 20% of stormwater BMPs annually to ensure they are functioning as designed.
 - ✚ **Reporting and Record Keeping:** In the annual report, provide a copy of the inspection and maintenance plan, inspection and maintenance logs and a map depicting BMP locations.
 - ✚ **Responsible Party:** DPW ENRD and O&M Division.

6.6 Minimum Control Measure #6: Pollution Prevention/Good Housekeeping for Municipal Operations

The BMPs identified in this plan as BMP 6.1 through BMP 6.8 will be executed to satisfy the pollution prevention/good housekeeping for municipal operations requirements set forth by Section II.B.6 of the General Permit (VAR04) found in 4VAC50-60-1240. Recommended revisions to the BMPs were proposed in the 2013 Annual Report to incorporate new permit requirements which took effect on July 1, 2013.

- **BMP 6.1 Develop and Implement Written Training Plan**

- ✚ **Measurable Goal:** In permit year 2, develop a written training plan in accordance with 4VAC50-60-1240, Section II, B.6.d. In permit years 3 - 5, implement the training plan for installation staff, support contractors and tenant commands.

- ✚ **Reporting and Record Keeping:** In the annual report, submit a summary to include a list of training events, the training date, the number of employees attending training and the objective of the training.

- ✚ **Responsible Party:** DPW ENRD

- **BMP 6.2 Support Recycling and HAZMAT Programs.**

Support of these programs through periodic publication of educational materials facilitates appropriate waste management.

- ✚ **Measurable Goal:** Provide relevant information to the public through monthly periodicals such as the *Belvoir Eagle* or Fort Belvoir website.

- ✚ **Reporting and Record Keeping:** In the annual report, provide copies of published materials and web postings.

- ✚ **Responsible Party:** DPW ENRD

- **BMP 6.3 Support Street Sweeping Activities.**

- ✚ **Measurable Goal:** Develop street sweeping operations and maintenance standards to evaluate the effectiveness of sweeping activities and inspect 10% of the total street sweeping area for visible pollutants.

- ✚ **Reporting and Record Keeping:** In the annual report, provide a narrative description of street sweeping activities.

- ✚ **Responsible Party:** DPW ENRD will work with the O&M Division to develop and control the base operations contract for reporting documents.

- **BMP 6.4 Maintain Spill Response Vehicle/Trailer**

Fort Belvoir has a spill response plan and maintains a spill response trailer at the Davison Army Airfield and at the main Fire Station.

 - ✚ **Measureable Goal:** Maintain a minimum of one spill response trailer equipped with appropriate equipment and absorbents; ensure appropriate training of spill response staff.
 - ✚ **Reporting and Record Keeping:** In the annual report, provide a copy of the training materials and a manifest of materials kept in the trailer.
 - ✚ **Responsible Party:** DPW ENRD and the Fire Department.

- **BMP 6.5 Support Stream Restoration**
 - ✚ **Measureable Goal:** Support one stream restoration project during the 5 year permit cycle, either on the installation or in partnership with the surrounding community for shared receiving water; advertise activity on the website or within the Belvoir Eagle to encourage public participation.
 - ✚ **Reporting and Record Keeping:** In the annual report, provide a narrative and photographs of the project.
 - ✚ **Responsible Party:** DPW ENRD

- **BMP 6.6 Support "Self Help" Programs**
 - ✚ **Measureable Goal:** Fort Belvoir provides access to facilities at which tenants perform crafts or auto repair or accept chemicals and equipment for lawn maintenance. Prior to participating in such programs, individuals must understand proper use of the facility and provided materials. Insert information about these programs into stormwater pamphlets and include information about "Self Help" programs on the Fort Belvoir website.
 - ✚ **Reporting and Record Keeping:** In the annual report, provide copies of the pamphlets and the web postings.
 - ✚ **Responsible Party:** DPW ENRD and Directorate of Family, Morale Welfare and Recreation.

- **BMP 6.7 Develop and Implement Nutrient Management Plans**
 - ✚ **Measureable Goal:** In permit year 1, identify all applicable lands where nutrients are applied to a contiguous area of more than one acre. In permit year 2, 15% of all identified acres will be covered by nutrient management plans. In permit year 3, 40% of identified acres will be covered by nutrient management plans. In permit year 4, 75% of identified acres will be covered by nutrient management plans. In permit

year 5, 100% of identified acres will be covered by nutrient management plans.

✚ **Reporting and Record Keeping:** In the annual report, provide a summary that includes: location (latitude and longitude) of each piece of land requiring a nutrient management plan, total acreage of lands where turf and landscape nutrient management plans are required and acreage of lands upon which turf and landscape nutrient management plans have been implemented.

✚ **Responsible Party:** DPW ENRD

- **BMP 6.8 Develop and Implement Stormwater Pollution Prevention Plans (SWPPP)**

✚ **Measureable Goal:** In permit year 1, identify all municipal high priority facilities to include: composting facilities, equipment storage and maintenance facilities, materials storage yards, pesticide storage facilities, public works yards, recycling facilities, salt storage facilities, solid waste handling and transfer facilities and vehicle storage and maintenance yards. In permit year 2, develop and implement SWPPPs for all high-priority facilities identified in permit year 1.

✚ **Reporting and Record Keeping:** In the annual report for permit year 1, provide types of high priority facilities identified and locations (latitude and longitude) of each facility requiring a SWPPP. In the annual report for permit year 2, provide a summary of the development and implementation of required SWPPPs. In the annual report for permit years 3 - 5, provide a summary of the implementation of required SWPPPs.

✚ **Responsible Party:** DPW ENRD