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US ARMY INSTALLATION MANAGEMENT COMMAND
HEADQUARTERS, UNITED STATES ARMY GARRISON, FORT BELVOIR
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FORT BELVOIR, VIRGINIA 22060-5928

REPLY TO
ATTENTION OF

October 1, 2012

Directorate of Public Works

Mr. Jeff Selengut
Department of Conservation and Recreation
Division of Stormwater Management
900 E. Main Street 8th Floor
Richmond, Virginia 23219

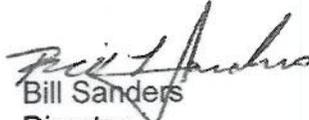
Dear Mr. Selengut:

Enclosed is the Annual Report for the Fort Belvoir MS4 Permit (Permit #VAR040093).

"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.

Sincerely,


Bill Sanders
Director

Enclosure

"LEADERS IN EXCELLENCE"

**VIRGINIA POLLUTANT DISCHARGE ELIMINATION SYSTEM (VDPE)
SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4) PERMIT
FORT BELVOIR ANNUAL REPORT**

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 2011 – June 2012

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:

Several construction projects were completed during this reporting period as a result of the Base Realignment and Closure (BRAC) initiative. New stormwater management facilities added to the Fort Belvoir inventory are presented in Appendix A.

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 Draft Historical Use of PCBs Report, 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.

MS4 Permit Citation	Action	Schedule	Status
Section 1.B.1	Update the MS4 Program Plan to include PCBs TMDL allocations.	June/July 2012	Completed October 1, 2012 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).	Draft June 2012	A draft report was completed in June 2012. Final to be completed in December 2012.
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.	N/A	Fort Belvoir's power utility was privatized in July 2007 and Dominion Virginia Power maintains the system. At this time, there are no transformers containing PCBs. Therefore since the PCBs source has been eliminated, there is not a need for an awareness campaign to eliminate and reduce discharges.
Section 1.B.4	Incorporate applicable Best Management Practices (BMPs) identified in the TMDL implementation plan.	N/A	Best management practices in reference to sediment erosion as a source of PCBs already exists in Minimum Control Measure #4 "Construction Site Stormwater Runoff Control.
Section 1B.5	Perform an outfall reconnaissance inventory (ORI).	July 2012	This date has been delayed based on funding availability for contracting work. In-house staff will perform inventory in November 2012 if funding is not received.

MS4 Permit Citation	Action	Schedule	Status
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.	January 2013 – December 2013	A review of the Resource Conservation and Recovery Act Closeout reports will be conducted by December 2012 to determine if sampling was conducted. If sampling was not completed in accordance with Section 1.B.6.a-b, then additional sampling will be conducted.
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.	October 1, 2012	To be 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.	2012/2013	2013
Section 1.B.8	Update MS4 Program Plan to include any new information regarding the TMDL.	As needed.	As needed.
Section 1.B.9.a-b	Annual reporting requirements for the PCB TMDL to be included in the 2012 Annual Report.	October 1, 2012	Completed October 1, 2012 as part of the MS4 Annual Report.

TABLE 1 (continued): PCB TMDL Schedule for Implementation.

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) has been contracted 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 . Beginning on July 1, 2012, Fort Belvoir will require utilization of the Runoff Reduction Method as outlined in the stormwater design criteria (4VAC50-60)

for all new projects requiring stormwater design. Fort Belvoir will continue to work with VADCR in 2012/2013 to establish BMPs required for compliance with the Chesapeake Bay TMDL that will be included in the registration statement to be submitted in April 2013 for renewal of the MS4 Permit.

C. Accotink Creek TMDL

Fort Belvoir requires construction projects to utilize U.S. Environmental Protection Agency's (USEPA) Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act (EISA 438) with the goal of maintaining pre-development site hydrology to the maximum extent technically feasible by retaining rainfall on-site through infiltration, evaporation/transpiration and/or re-use. In the USEPA document, "*TMDL for Benthic Impairments in the Accotink Watershed*" dated April 18, 2011 the Waste Load Allocation (WLA) assigned to Fort Belvoir is 25.9% reduction to the one-year, 24-hour flow. Fort Belvoir's assessment of EISA 438 is that the EISA 438 requirement exceeds the Accotink Creek TMDL.

In July 2012, Fairfax County and Virginia Department of Transportation filed a lawsuit against the USEPA and this TMDL is currently under litigation. Once litigation is settled, Fort Belvoir will reassess compliance with the Accotink Creek TMDL and implement measures as necessary to comply.

- 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 exceeded this goal for the reporting period July 1, 2011 – June 30, 2012 by conducting two activities as follows:

On November 3, 2011, three representatives from Fort Belvoir Directorate of Public Works (DPW), Environmental and Natural Resource Division (ENRD) attended Career Day at the Fort Belvoir Elementary School. One representative specifically discussed stormwater careers and what the children can do to keep their stormwater clean. Copies of stormwater educational material were taken to the school that included the handout from US EPA entitled, "After the Storm: A Citizens Guide to Understanding Stormwater." (EPA 833-B-03-002, January 2003) Over 150 students attended and approximately 75 copies of the pamphlet were distributed and discussed.

On April 20, 2012, as part of the Earth Day events at the Accotink Bay Wildlife Refuge Environmental Education Center, there was a specific 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) This display was staffed through the entire day's celebration and activities and over 20 handouts were distributed to residents of Fort Belvoir. Additionally, an interactive display model was set up for interaction with the public. The display model shows the impacts of different types of pollution on the stormwater and the streams it discharges into.

During Earth Day activities, held on or around April 20, 2012 at the Accotink Bay Wildlife Refuge Environmental Education Center and other locations on post, numerous public education activities were conducted (Attachment B). The activities included guided canoe and kayak trips at Tompkins Basin, the Potomac River Watershed Cleanup, educational displays by several media areas (Dominion Virginia Power, Recycling Program, Tree identification, etc.), planting of a native vegetation wildflower/pollinator wetland garden, children's activity to create environmentally friendly birdfeeders, a stormwater education display with handouts, general educational exhibits at the Accotink Bay Wildlife Refuge Education, and a family campout with a night fishing clinic. The dates, locations, and times for the events were listed in a poster developed by the DPW EMRD, the Directorate of Morale, Welfare and Recreation (MWR) and the US Army Child, Youth and School Services which was distributed via the Belvoir Eagle, MWR's Outdoor Recreation webpage and list serve and the Fort Belvoir Public Affairs Office's list serve. (Attachment B)

Approximately 100 people including pre-school and school-age children came to Tompkins Basin and the Accotink Bay Wildlife Refuge Environmental Education Center for the day's events and to witness the feeding of the Black Rat snakes, to observe and learn about non-native snakes, to look at some of the native fish species found in Accotink Bay, wildlife display mounts, preserved bug specimens, educational displays for the Accotink Bay Wildlife Refuge and the Jackson Miles Abbott Wetland Refuge, tree specimen displays and give-away.

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, 2011 – June 30, 2012. As reported in the 2010-2011 Annual Report, the MS4 Program Sharepoint Site was under construction and it has been determined that this site is not accessible to the public and is not reliable avenue for dissemination of stormwater/watershed information. 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 watershed information. A draft website is expected to be completed in October 2012 with the website being fully updated by January 2013.

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 reduction of stormwater runoff and pollution to Chesapeake Bay tributaries.
- **Status Update:** Fort Belvoir met this goal for the reporting period July 1, 2011 – June 30, 2012. Fort Belvoir DPW ENRD provided three staff members for the Fort Belvoir Elementary School's Career Day on November 3, 2011. Staff discussed watershed protection, native vegetation, wildlife and native habitat on post and the protection of all of the natural resources here on post. One representative specifically discussed stormwater careers and what the children can do to keep their stormwater clean and how that translates into keeping our adjacent waterways like the Potomac River and the Chesapeake Bay cleaner as well. Copies of stormwater educational material were taken to the school that included the handout from US EPA entitled, "After the Storm: A Citizens Guide to Understanding Stormwater" (EPA 833-B-03-002, January 2003). Over 150 students attended and approximately 75 copies of the pamphlet were distributed and discussed.

BMP 1.4 Maintain General Watershed Information on the Fort Belvoir Website

- **Measurable Goal:** Update the watershed data to reflect changes or new information.
- **Status Update:** Fort Belvoir met this goal for the reporting period July 1, 2011 – June 30, 2012. 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"

- **Measurable 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 met this goal for the reporting period July 1, 2011 – June 30, 2012. The Potomac River Watershed Cleanup Day was held on April 22, 2012. 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 "Community lends helping hand during Potomac Watershed cleanup" printed in the April 26, 2012 Belvoir Eagle and information on the public outreach events is included in Attachment B.

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 did not meet this goal for the reporting period July 1, 2011 – June 30, 2012. However, during the reporting period, on June 30, 2012 a Boy Scout partnered with Fort Belvoir ENRD staff, Fairfax County and Pinnacle Housing and completed his Eagle Scout project which involved labeling 118 storm drains in 5 of the 15 Fort Belvoir housing areas (Belvoir Village, Dogue Creek Village, Fairfax Village, Gerber Village and Jadwin Loop Village). In addition, he developed a brochure that was distributed to 556 homes entitled “STOP Non-Point Source Pollution!” A copy of the brochure is provided in Appendix B.

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, 2011 – June 30, 2012. 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 an DPW ENRD staff person twice a day for comments posted that would be of environmental concern.

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 containing stormwater systems, 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, 2011 – June 30, 2012. The installation-wide field survey to locate all existing stormwater management structures and facilities was completed in January 2012 and a final GIS data layer was uploaded to the Fort Belvoir GIS. A spreadsheet was produced identifying stormwater

structures/facilities that need repair and maintenance with a priority code assigned to each. DPW ENRD continued to work with DPW Operations and Maintenance Staff to program funding and schedules for maintenance and repair work.

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, 2011 – June 30, 2012. During the Annual Comprehensive Compliance Inspection at Davison Army Airfield (DAAF) for the VPDES Industrial Stormwater General Permit (VAR051080), a potential for an illicit discharge was noted at an exterior washrack used by aircraft. DPW-ENRD staff completed a dye test at the washrack on May 15, 2012 and adjacent stormwater structure to determine if there was any connection. The dye-test concluded that the stormwater structure was too close to the washrack. New procedures for aircraft washing were instituted immediately at DAAF to avoid release of washwater into the stormwater structure and a work request was submitted to DPW for a long term solution to the stormwater structures' proximity to the washrack drain.

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, 2011 – June 30, 2012. As part of the permit conditions for the VPDES General Permit VAR051080 for Industrial Stormwater Discharges at Davison Army Airfield, the annual training on the Stormwater Pollution Prevention Plan (SWPPP) was conducted on June 18 and 19, 2012. The training consisted of staff awareness of potential contamination from airfield operations to the stormwater system, BMPs and illicit discharge elimination.

In addition, as part of the ongoing extensive update to an existing DPW ENRD website, DPW ENRD staff has started developing training slides which will be made available to all Fort Belvoir personnel which will inform staff of hazards associated with illicit discharges. A draft of the training program is scheduled to be completed by October 2012 for inclusion on the Fort Belvoir DPW ENRD website.

During the pre-construction Erosion & Sediment Control inspections, inspectors provide construction contractors with copy of EPA's factsheet "*Stormwater Best Management Practice Concrete Washout*" to educate them on the proper management/disposal of concrete washout water.

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, 2011 – June 30, 2012. 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.

One VPDES General Permit was closed during the reporting period.

1. Main Post - Building 2291 (Former 2209/2217) VAG830400. This permit was for discharges from a petroleum-contaminated site from a new remediation system (dual-phase extraction system) at building 2291 (former buildings 2209/2217). Monitoring requirements were in compliance with the permit during the time the system operated: 5-July, 2011 through 30-March, 2012.

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 did not meet this goal for the reporting period July 1, 2011 – June 30, 2012. In October 2010, as part of a contract to locate and characterize industrial stormwater outfalls in preparation for submittal of an application for an installation-wide Industrial Major Stormwater VPDES Permit, survey work was also completed to investigate facilities for illicit discharges. This work was documented in *“Technical Report Industrial Stormwater and Wastewater Survey”*. During the 2012/2013 permit cycle, DPW ENRD staff plan to evaluate this report and establish identified outfalls and inspection frequencies.

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 April 9 – 11, 2012 for the Davison Army Airfield Industrial Stormwater General Permit (VAR051080) evaluated for all stormwater related issues to include illicit discharges.

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. In October 2010, as part of a contract to locate and characterize all industrial stormwater outfalls for preparation of an installation-wide Industrial Major Stormwater Virginia Pollutant Discharge Elimination System (VPDES) Permits, field survey work was also completed which involved visual inspections of a facility's interior and exterior, field verification of stormwater and wastewater infrastructure and potential pollutant sources. This work was documented in "*Technical Report Industrial Stormwater and Wastewater Survey*" dated October 2010. During the 2012/2013, DPW ENRD staff plan to evaluate this report and analyze and develop/implement recommendations for potential mitigation actions, as necessary.

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, 2011 – June 30, 2012. 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.

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, 2011 – June 30, 2012. The recommended BMPs identified in the Fort Belvoir Golf Club Nutrient Management Plan will be implemented over the next three years with re-evaluation and revision of the plan scheduled to occur in June 2015.

The Fort Belvoir sewer and water utilities were privatized in September 2009 and the system is maintained by American Water. American Water utilizes established protocol for routine waterline flushing to de-chlorinate and diffuse water prior to discharging into the storm sewer system.

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, 2011 – June 30, 2012. There are no known combined sewer and storm sewer lines; consequently this BMP does not apply to Fort Belvoir.

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, 2011 – June 30, 2012. 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, the necessity for a sampling strategy is currently being analyzed and will be completed by December 2012. Sampling, if required, will start in 2013.

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, 2011 – June 30, 2012. As part of the permit conditions for the VPDES General Permit VAR051080 for Industrial Stormwater Discharges at Davison Army Airfield, the annual training on the Stormwater Pollution Prevention Plan (SWPPP) was conducted on June 18 and 19, 2012. The training integrated education requirements under the VPDES General Permit as well

as MS4 permit requirements. This training provided staff with information on potential contamination from airfield operations to the stormwater system, good housekeeping BMPs that will eliminate illicit discharge to the stormwater system.

In addition, as part of the ongoing extensive update to an existing Fort Belvoir DPW ENRD, ENRD staff have started developing training slides which will be made available to all Fort Belvoir personnel which will inform staff of the environmental consequences associated with illicit discharges. A draft of the training program is scheduled to be completed by October 2012 for inclusion on the Fort Belvoir DPW ENRD website.

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, 2011 – June 30, 2012. Fort Belvoir MS4 staff maintained certificates of competence for Combined Administrators or Inspectors or are Licensed Professional Engineers in accordance with the requirements administered by the VADCR, 4VAC50-50. 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 & sediment control regulations. (See Appendix C 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, 2011 – June 30, 2012. Fort Belvoir provided guidance materials to the A/E firm producing construction plans and documents that details requirements for the design and implementation of stormwater and erosion and sediment control measures. For all projects where initial planning is done locally, ENRD provided guidance to the project proponent regarding MS4 Permit compliance requirements.

Upon request, DPW ENRD provided copies of the MS4 General Permit and Fort Belvoir's Registration Statement, as well as the URL address for Virginia Department of Conservation and Recreation (DCR) 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 Design Guide (A component of the Installation Master Plan) which is scheduled for finalization in 2013. The portion of the Installation Design Guide pertaining to stormwater design will then be published on the Fort Belvoir DPW ENRD website once it 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, 2011 – June 30, 2012. 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 once a month. (See Appendix C 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, 2011 – June 30, 2012. 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 for the 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, 2011 – June 30, 2012. 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, a technical bulletin was developed and was distributed to contractors. (See Appendix C 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, 2011 – June 30, 2012. BRAC construction projects evaluated and utilized a variety of Low Impact Development (LID) BMPs in stormwater management design to include: sand filters, porous pavement, cisterns, green roof, Filterra systems and bioretention facilities. See Appendix A for all new stormwater facilities that came on line during this reporting period as a result of BRAC construction.

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, 2011 – June 30, 2012. 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, 2011 – June 30, 2012. DPW ENRD staff reviewed the associated database that was developed in conjunction with the field survey completed in January 2012 (See BMP 3.1) and determined that it did not track the number of acres treated by the BMP and will work to integrate this information into the database in 2012/2013.

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, 2011 – June 30, 2012. During the final construction phase on BRAC construction projects, 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.

BMP 5.4 Present Sustainable Development Considerations/New Technologies.

- Measurable Goal: Hold one technical workshop for designers, inspectors, project managers, etc., on the implementation of BMPs; technological advances in control structure design, installation and operation; and designing for low impact and sustainable development.
- Status Update: Fort Belvoir did not meet this goal for the reporting period July 1, 2011 – June 30, 2012. As indicated in the Request for Information response that was provided to DCR on May 30, 2012, Fort Belvoir re-evaluated the effectiveness of this BMP and has determined that because this BMP continues to be unfunded by Department of Army, this BMP is no longer viable. Fort Belvoir is requesting that this BMP be substituted with a Measurable Goal of providing a training component on the Fort Belvoir DPW ENRD website on LID. The DPW ENRD website is scheduled to be completed in January 2013.

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, 2011 – June 30, 2012. DPW ENRD staff performed a visual inspection with photographic documentation for 16 streams that were located with the Accotink Creek Watershed and Dogue Creek Watershed. One stream was identified for restoration and a project to correct deficiencies was forwarded to Army Environmental Command for consideration for funding. A copy of the report is available on request.

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, 2011 – June 30, 2012. Two projects were completed along Poe Road which involved replacing improperly sized culverts with properly sized culverts that would accommodate low and high flow rain events. In addition, repair of the two road crossings involved installation of new headwalls and inlet and outlet protection (These crossings did not have headwalls nor inlet and outlet protection originally.)

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, 2011 – June 30, 2012. See training description under BMP 3.3. For the 2012-2013 reporting period, the training materials will be reviewed for adequacy and updates completed, as necessary.

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, 2011 – June 30, 2012. Fort Belvoir's household hazardous waste (HHW) program is managed by a privatized family housing contractor (Pinnacle) that is responsible for the collection of HHW and proper disposal. Pinnacle manages a designated drop-off location for residents HHW at 6034 16th Street, building 1108. 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.

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, 2011 – June 30, 2012. 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 used a mechanical street sweeper to keep parking lots clear of sediment and debris on an as-needed basis.

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, 2011 – June 30, 2012. 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 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, 2011 – June 30, 2012. The U.S. Army Corps of Engineers (USACE) has been contracted 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 and once completed, will be a valuable tool for managing maintenance activities.

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, 2011 – June 30, 2012. 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 the fall of 2012.

- 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. Once completed, the permit application with all accompanying data will be submitted to VADEQ, Northern Regional Office in Woodbridge, Virginia. 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 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 D
- 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:** As discussed in section b., page 15 of this annual report, Fort Belvoir is requesting that the BMP 5.4 Present Sustainable Development Considerations/New Technologies be substituted with a Measurable Goal of providing a training component on the Fort Belvoir DPW ENRD website on LID.
- 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 DCR for a discharge that occurred on January 18, 2012. A contractor vacuum truck discharged approximately 250 gallons of liquid and sediment/grit onto ground located south of the 21st Street Debris Collection Site within 30 feet of an un-named tributary to Gunston Cove after pumping

out and trench drains and a manhole inside a hanger/Building 3145 at Davison Army Airfield. A meeting was held with the contractor to discuss appropriate procedures for disposing of vacuum truck contents. DPW ENRD developed procedures to dispose of various waste streams generated from vacuum truck pumping operations.

j. Regulated land-disturbing activities data tracked under Section II 4 c:

From July 1, 2011 to June 30, 2012, there were a total of 36 land-disturbing activities that were required to obtain a VSMP permit with an associated disturbed acreage of 628.66 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.

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: Not applicable.

APPENDIX A

New Stormwater Management Facilities

July 1, 2011 – June 30, 2012

Fort Belvoir MS4 Annual Report

NEW STORMWATER MANAGEMENT FACILITIES FOR MS4 ANNUAL REPORT --- JULY 1, 2011 - JUNE 30, 2012, FORT BELVOIR, VIRGINIA

PROJECT NAME: Community Hospital, Belvoir Road, Fort Belvoir, Virginia

DISTURBED AREA (DA) WITHIN WATERSHED(S):
 Watershed 1 Dogue Creek 40.5± acres
 Watershed 2 Accotink Creek 27.8± acres
 TOTAL DISTURBED AREA = 68.3 acres

Stormwater Management Facilities

Facility ID #	Facility Type	Purpose	Acres Treated	Watershed	Receiving Waters	VAHUE Code	Approximate Latitude & Longitude at Center of Stormwater Facility
SWM1A	Bioretention Filter	Water Quantity & Quality	12.09	Dogue Creek, Outfall 1	Unknown tributary to Dogue Creek	PL27	38.706753°, -77.141951°
PP1A	Permeable open joint pavement blocks	Water Quantity & Quality	1.46	Dogue Creek, Outfall 1	Unknown tributary to Dogue Creek	PL27	38.7066373°, -77.142171°
SWM1C	Bioretention Filter	Water Quantity & Quality	12.08	Dogue Creek, Outfall 1	Unknown tributary to Dogue Creek	PL27	38.705431°, -77.141190°
PP1B	Permeable open joint pavement blocks	Water Quantity & Quality	1.46	Dogue Creek, Outfall 1	Unknown tributary to Dogue Creek	PL27	38.705627°, -77.141715°
TS1	Natural Open Space (Tree Save Area)	Water Quality	1.93	Dogue Creek, Outfall 1	Unknown tributary to Dogue Creek	PL27	38.706251°, -77.141179°
1-K2f	Filtering Structure-Filterra	Water Quality	0.19	Dogue Creek, Outfall 1	Unknown tributary to Dogue Creek	PL27	38.707859°, -77.142016°
1-K5F	Filtering Structure-Filterra	Water Quality	0.26	Dogue Creek, Outfall 1	Unknown tributary to Dogue Creek	PL27	38.707674°, -77.142166°
SWM2A	Sand Filter	Water Quality	6.96	Accotink Creek, Outfall 2	Unknown tributary to Accotink Creek	PL30	38.703802°, -77.143738°

PROJECT NAME: <u>Community Hospital, Belvoir Road, Fort Belvoir, Virginia - Continued</u>									
Stormwater Management Facilities									
Facility ID #	Facility Type	Purpose	Acres Treated	Watershed	Receiving Waters	VAHU6 Code	Approximate Latitude & Longitude at Center of Stormwater Facility		
SWM3B	Bioretention Filter	Water Quantity & Quality	7.33	Accotink Creek, Outfall 2	Unknown tributary to Accotink Creek	PL30	38.703597°,-77.143153°		
TS3	Natural Open Space (Tree Save Area)	Water Quality	0.87	Accotink Creek, Outfall 2	Unknown tributary to Accotink Creek	PL30	38.708051°,-77.144644°		
Cistern A	80,00 Gal. Cistern for irrigation	Water quantity & Quality, stormwater used for irrigation	1.12	Accotink Creek, Outfall 2	Unknown tributary to Accotink Creek	PL30	38.704338°,-77.142584°		
Cistern B	80,00 Gal. Cistern for irrigation	Water Quantity & Quality, stormwater used for irrigation	1.12	Accotink Creek, Outfall 3	Unknown tributary to Accotink Creek	PL30	38.706812°,-77.143872°		
3-B13F	Filtering Structure-Filterra	Water Quality	0.07	Accotink Creek, Outfall 3	Unknown tributary to Accotink Creek	PL30	38.706310°,-77.145234°		
3-B14F	Filtering Structure-Filterra	Water Quality	0.08	Accotink Creek, Outfall 3	Unknown tributary to Accotink Creek	PL30	38.706385°,-77.145342°		
3-B20AF	Filtering Structure-Filterra	Water Quality	0.20	Accotink Creek, Outfall 3	Unknown tributary to Accotink Creek	PL30	38.707875°,-77.14590°		
3-B21AF	Filtering Structure-Filterra	Water Quality	0.17	Accotink Creek, Outfall 3	Unknown tributary to Accotink Creek	PL30	38.707967°,-77.145889°		
SWM4	Sand Filter	Water Quality	1.85	Accotink Creek, Outfall 4	Unknown tributary to Accotink Creek	PL30	38.703685°,-77.144966°		
6-G3F	Filtering Structure-Filterra	Water Quality	0.26	Dogue Creek, Outfall 6	Unknown tributary to Dogue Creek	PL27	38.703907°,-77.139816°		
6-G4F	Filtering Structure-Filterra	Water Quality	0.25	Dogue Creek, Outfall 6	Unknown tributary to Dogue Creek	PL27	38.70379°,-77.139913°		

PROJECT NAME: <u>Community Hospital, Belvoir Road, Fort Belvoir, Virginia - Continued</u>						
Stormwater Management Facilities						
Facility ID #	Facility Type	Purpose	Acres Treated	Watershed	Receiving Waters	Approximate Latitude & Longitude at Center of Stormwater Facility
Green Roof	Green Roof	Water Quantity & Quality	0.80	Accotink Creek, Outfall 2	Unknown tributary to Accotink Creek	38.70528°,-77.143282°

PROJECT NAME: <u>PEO Soldiers Building, (300 Area) Burbeck Road, Fort Belvoir</u>						
DISTURBED AREA (DA) WITHIN WATERSHED(S):						
Watershed 1	Accotink Creek	DISTURBED AREA =	0.8 acres			
			TOTAL DISTURBED AREA =	0.8 acres		
Stormwater Management Facilities						
Facility ID #	Facility Type	Purpose	Acres Treated	Watershed	Receiving Waters	Approximate Latitude & Longitude at Center of Stormwater Facility
Cistern, North Tank	2,400 Gal. Cistern	Water Quantity	0.08	Accotink Creek	Unknown tributary to Accotink Creek	38.677524°,-77.141031°
Cistern, South Tank	2,400 Gal. Cistern	Water Quantity	0.08	Accotink Creek	Unknown tributary to Accotink Creek	38.677509°,-77.141018°
Filterra, located at the east end of building	Filtering Structure-Filterra	Water Quality	0.16	Accotink Creek	Unknown tributary to Accotink Creek	38.677522°,-77.141023°

PROJECT NAME: Main Post Infrastructure, Phase I – Belvoir and Pohick Roads

DISTURBED AREA (DA) WITHIN WATERSHED(S):

Watershed 1 Dogue Creek DISTURBED AREA = 6.6± acres

Watershed 2 Accotink Creek DISTURBED AREA = 8.1± acres

TOTAL DISTURBED AREA = 14.7 acres

Stormwater Management Facilities

Facility ID #	Facility Type	Purpose	Acres Treated	Watershed	Receiving Waters	VAHUG Code	Approximate Latitude & Longitude at Center of Stormwater Facility
Pond-1 (Belvoir Road across from Hospital entrance)	Extended detention dry pond	Both, water quantity and quality	5.72	Dogue Creek	Unknown tributary to Dogue Creek	PL27	38.704886°,-77.139537°
UDS-1 (Belvoir Road near Community Center and Surveyor Road)	Underground detention vault with infiltration	Both, water quantity and quality	9.87	Dogue Creek	Unknown tributary to Dogue Creek	PL27	38.707214°,-77.140932°
Pond-2 (Intersection of Pohick Rd & Sharon Lane)	Extended detention dry pond	Both, water quantity and quality	2.449	Accotink Creek	Unknown tributary to Accotink Creek	PL30	38.701127°,-77.155604°
UDS-2 (Pohick Road near Tulley Gate)	Underground detention vault	Both, water quantity and quality	12.117	Accotink Creek	Unknown tributary to Accotink Creek	PL30	38.69990°,-77.155786°
UDS-3 (Pohick Road near Pohick Loop Trail parking)	Underground detention vault	Both, water quantity and quality	1.266	Accotink Creek	Unknown tributary to Accotink Creek	PL30	38.703559°,-77.156006°
UDS-4 (Pohick Road near INX Poe Road)	Underground detention vault	Both, water quantity and quality	2.096	Accotink Creek	Unknown tributary to Accotink Creek	PL30	38.705749°,-77.157454°
UDS-5 (On easterly side of Pohick Road, 600' south of Route #1.	Underground detention vault	Both, water quantity and quality	1.484	Accotink Creek	Unknown tributary to Accotink Creek	PL30	38.707356°,-77.15801°

PROJECT NAME: USALSA, Administrative Building

DISTURBED AREA (DA) WITHIN WATERSHED(S):
 Watershed 1 Accotink Creek DISTURBED AREA = 4.57 acres
 TOTAL DISTURBED AREA = _____ 4.57 acres

Stormwater Management Facilities

Facility ID #	Facility Type	Purpose	Acres Treated	Watershed	Receiving Waters	VAHU6 Code	Approximate Latitude & Longitude at Center of Stormwater Facility
MC-4500 StormTech	Underground detention vault with infiltration	Both, water quantity and quality	5.012	Accotink Creek	Unknown tributary to Accotink Creek	PL30	38.706544°, -77.148796°

PROJECT NAME: Missile Defense Agency (MDA), Headquarters Command Center

DISTURBED AREA (DA) WITHIN WATERSHED(S):
 Watershed 1 Dogue Creek DISTURBED AREA = 10± acres
 TOTAL DISTURBED AREA = _____ 10± acres

Stormwater Management Facilities

Facility ID #	Facility Type	Purpose	Acres Treated	Watershed	Receiving Waters	VAHU6 Code	Approximate Latitude & Longitude at Center of Stormwater Facility
Underground Detention Structure, is located adjacent to the parking lot at the rear of the MDA-HDCC Building	Underground detention vault with infiltration	Both, water quantity and quality	7.00	Dogue Creek	Unknown tributary to Dogue Creek	PL27	38.694026°, -77.135906°

PROJECT NAME: <u>Dental Clinic and NARMC</u>									
DISTURBED AREA (DA) WITHIN WATERSHED(S):									
Watershed 1 Accotink Creek DISTURBED AREA = 0.93 acres									
Watershed 1 Dogue Creek DISTURBED AREA = 10.14 acres									
TOTAL DISTURBED AREA = 11.07 acres									
Stormwater Management Facilities									
Facility ID #	Facility Type	Purpose	Acres Treated	Watershed	Receiving Waters	VAHU6 Code	Approximate Latitude & Longitude at Center of Stormwater Facility		
F-A4	Filtering Structure-Filterra	Water Quality	0.18	Dogue Creek	Unknown tributary to Dogue Creek	PL27	38.708805°,-77.143003°		
F-A4A	Filtering Structure-Filterra	Water Quality	0.14	Dogue Creek	Unknown tributary to Dogue Creek	PL27	38.708855°,-77.142971°		
F-A5	Filtering Structure-Filterra	Water Quality	0.11	Dogue Creek	Unknown tributary to Dogue Creek	PL27	38.709541°,-77.143292°		
F-A6	Filtering Structure-Filterra	Water Quality	0.16	Dogue Creek	Unknown tributary to Dogue Creek	PL27	38.710027°,-77.143518°		
F-A6A	Filtering Structure-Filterra	Water Quality	0.11	Dogue Creek	Unknown tributary to Dogue Creek	PL27	38.710077°,-77.143453°		
F-A8	Filtering Structure-Filterra	Water Quality	0.18	Dogue Creek	Unknown tributary to Dogue Creek	PL27	38.71027°,-77.144204°		
F-A9	Filtering Structure-Filterra	Water Quality	0.19	Dogue Creek	Unknown tributary to Dogue Creek	PL27	38.710328°,-77.144215°		
F-A5A	Filtering Structure-Filterra	Water Quality	0.115	Accotink Creek	Unknown tributary to Accotink Creek	PL30	38.708177°,-77.145642°		
F-D5B	Filtering Structure-Filterra	Water Quality	0.115	Accotink Creek	Unknown tributary to Accotink Creek	PL30	38.708235°,-77.14561°		

PROJECT NAME: <u>Dental Clinic and NARMC - Continued</u>						
Facility ID #	Facility Type	Purpose	Acres Treated	Watershed	Receiving Waters	Approximate Latitude & Longitude at Center of Stormwater Facility
Bioretention Basin	Bioretention Basin	Both, water quantity and quality	5.87	Dogue Creek	Unknown tributary to Dogue Creek	38.709064°,-77.143486°
Permeable Pavement	Permeable Pavement	Water Quality	0.69	Accotink Creek	Unknown tributary to Accotink Creek	38.708612°,-77.145685°
Underground Detention Structure	Underground Detention Structure	Water Quantity	0.93	Dogue Creek	Unknown tributary to Dogue Creek	38.708512°,-77.145803°

PROJECT NAME: <u>144 Child Development Center, Between Franklin and Woodlawn Roads</u>						
DISTURBED AREA (DA) WITHIN WATERSHED(S):						
Watershed 1	Accotink Creek	DISTURBED AREA =	3.6 acres			
Stormwater Management Facilities			TOTAL DISTURBED AREA =	3.6 acres		
Facility ID #	Facility Type	Purpose	Acres Treated	Watershed	Receiving Waters	Approximate Latitude & Longitude at Center of Stormwater Facility
Extended detention dry pond	Extended detention dry pond	Both, water quantity and quality	2.72	Accotink Creek	Unknown tributary to Accotink Creek	38.718428°,-77.144320°

PROJECT NAME: Emergency Services Center, Fort Belvoir North Area

DISTURBED AREA (DA) WITHIN WATERSHED(S):

Watershed 1 Accotink Creek DISTURBED AREA = 6.05 acres

TOTAL DISTURBED AREA = 6.05 acres

Stormwater Management Facilities

Facility ID #	Facility Type	Purpose	Acres Treated	Watershed	Receiving Waters	VAHU6 Code	Approximate Latitude & Longitude at Center of Stormwater Facility
Emergency Services Center, Detention Pond w/ Forebay	Extended detention dry pond	Both, water quantity and quality	5.19	Accotink Creek	Unknown tributary to Accotink Creek	PL30	38.758195° -77.190682°

PROJECT NAME: Joint Use Intelligence Analysis Facility, Rivanna Station

DISTURBED AREA (DA) WITHIN WATERSHED(S):

Watershed 1 Accotink Creek DISTURBED AREA = 27.3 acres

TOTAL DISTURBED AREA = 27.3 acres

Stormwater Management Facilities

Facility ID #	Facility Type	Purpose	Acres Treated	Watershed	Receiving Waters	VAHU6 Code	Approximate Latitude & Longitude at Center of Stormwater Facility
Re-Constructed wet pond	Wet Pond	Both, water quantity and quality	Contributing area = 56.08 Acres, Quantity controls= 38.16 acres on site, Water quality controls provided = 35.15 acres, Current area developed =12.41 acres on site.	North Fork Rivanna River	Unknown tributary to North Fork Rivanna River	JR11	38.154719° -78.413935°

PROJECT NAME: <u>Warriors In Transition Complex</u>									
DISTURBED AREA (DA) WITHIN WATERSHED(S):									
Watershed 1		Accotink Creek	DISTURBED AREA =	18.3 acres					
TOTAL DISTURBED AREA = 18.3 acres									
Stormwater Management Facilities									
Facility ID #	Facility Type	Purpose	Acres Treated	Watershed	Receiving Waters	VAHU6 Code	Approximate Latitude & Longitude at Center of Stormwater Facility		
DC-780 StormTech	Underground detention vault with infiltration-infiltration-StormTech	Both, water quantity and quality	11.53	Accotink Creek	Unknown tributary to Accotink Creek	PL30	38.701853°, -77.143925°		
Filter #1	Bioretention Filter	Water Quality	0.41	Accotink Creek	Unknown tributary to Accotink Creek	PL30	38.702898°, -77.142107°		
Filter #2	Bioretention Filter	Water Quality	0.18	Accotink Creek	Unknown tributary to Accotink Creek	PL30	38.702659°, -77.142965°		
Filter #3	Bioretention Filter	Water Quality	0.25	Accotink Creek	Unknown tributary to Accotink Creek	PL30	38.701579°, -77.142992°		
	Hydrodynamic Separator	Water Quality	1.98	Accotink Creek	Unknown tributary to Accotink Creek	PL30	38.701835°, -77.143078°		

PROJECT NAME: <u>Fort Belvoir North Area</u>									
DISTURBED AREA (DA) WITHIN WATERSHED(S):									
Watershed 1		Accotink Creek		DISTURBED AREA =		NOT AVAILABLE		acres	
Stormwater Management Facilities									
Facility ID #	Facility Type	Purpose	Acres Treated	Watershed	Receiving Waters	VAHU6 Code	Approximate Latitude & Longitude at Center of Stormwater Facility		
West North Loop Road, Pond #1	Extended detention dry pond	Both, water quantity and quality	4.62	Accotink Creek	Unknown tributary to Accotink Creek	PL30	38.753916°,-77.203036°		
West North Loop Road, Pond #2	Extended detention dry pond	Both, water quantity and quality	30.75	Accotink Creek	Unknown tributary to Accotink Creek	PL30	38.749247°,-77.203878°		
Power Substation Pond	Extended detention dry pond	Both, water quantity and quality	7.57	Accotink Creek	Unknown tributary to Accotink Creek	PL30	38.747839°,-77.192262°		
South Loop Road Pond #1, Outfall #2	Extended detention dry pond	Both, water quantity and quality	21.40	Accotink Creek	Unknown tributary to Accotink Creek	PL30	38.754318°,-77.187967°		
South Loop Road Pond #2, Outfall #4	Extended detention dry pond	Both, water quantity and quality	16.31	Accotink Creek	Unknown tributary to Accotink Creek	PL30	38.748975°,-77.19169°		

PROJECT NAME: 338 Child Development Center (CDC)
 DISTURBED AREA (DA) WITHIN WATERSHED(S): Dogue Creek DISTURBED AREA = 4.57 acres
 Watershed TOTAL DISTURBED AREA = 4.57 acres

Stormwater Management Facilities							
Facility ID #	Facility Type	Purpose	Acres Treated	Watershed	Receiving Waters	VAHU6 Code	Approximate Latitude & Longitude at Center of Stormwater Facility
No ID on plan	Underground Infiltration / Detention System (StormTech SC-740)	Both, water quantity and quality	4.57	Dogue Creek	Unknown tributary to Dogue Creek	PL27	38.710542, -77.141098

PROJECT NAME: Office of the Chief Army Reserves (OCAR)
 DISTURBED AREA (DA) WITHIN WATERSHED(S): Accotink Creek DISTURBED AREA = 10.33 acres
 Watershed TOTAL DISTURBED AREA = 10.33 acres

Stormwater Management Facilities							
Facility ID #	Facility Type	Purpose	Acres Treated	Watershed	Receiving Waters	VAHU6 Code	Approximate Latitude & Longitude at Center of Stormwater Facility
Infiltration Basin	Infiltration / Detention Basin	Both, water quantity and quality	4.66	Accotink Creek	Unknown tributary to Accotink Creek	PL30	38.711839, -77.147992
Bioretention Basin 1	Bioretention Area	Water Quantity	0.81	Accotink Creek	Unknown tributary to Accotink Creek	PL30	38.713058, -77.148737
Bioretention Basin 2	Bioretention Area	Water Quantity	0.76	Accotink Creek	Unknown tributary to Accotink Creek	PL30	38.713204, -77.147407

PROJECT NAME: AAFES Shoppette							
DISTURBED AREA (DA) WITHIN WATERSHED(S):							
Watershed		Accotink Creek	DISTURBED AREA =	3.1 acres			
TOTAL DISTURBED AREA =				3.1 acres			
Stormwater Management Facilities							
Facility ID #	Facility Type	Purpose	Acres Treated	Watershed	Receiving Waters	VAHU6 Code	Approximate Latitude & Longitude at Center of Stormwater Facility
No ID on plan	Extended Detention Pond with Infiltration	Both, water quantity and quality	3.02	Accotink Creek	Unknown tributary to Accotink Creek	PL30	38.695973°,-77.145959°