

Federal Facility Implementation Plans for Fort Detrick and Forest Glen, MD (Task N.0778)

Statement of Need

The United States (U.S.) Environmental Protection Agency (EPA) is leading a major initiative to establish and oversee achievement of a strict "pollution diet" to restore the Chesapeake Bay and its network of local rivers, streams, and creeks. EPA is working with its state partners to set restrictions on nitrogen, phosphorus, and sediment pollution in the Chesapeake Bay through a Total Maximum Daily Load (TMDL), a regulatory tool of the Federal Clean Water Act (CWA) that is backed by a series of accountability measures to ensure cleanup commitments are met.

As part of TMDL implementation, the EPA is currently working with the State of Maryland (MD) and other jurisdictions within the Chesapeake Bay Watershed to develop an overall TMDL implementation framework. The Final Chesapeake Bay TMDL was released by EPA on December 29, 2010, and Maryland released its Final Phase I Watershed Implementation Plan (WIP) on December 3, 2010, which provided its preliminary plans for achieving its share of the TMDL. On April 29, 2011, EPA released its Guide for Federal Lands and Facilities' Role in Chesapeake Bay Jurisdictions' Phase II Watershed Implementation Plans. According to this guide, Federal agencies with property in the Chesapeake Bay Watershed are expected to work with the Bay jurisdictions (the states and the District of Columbia [DC]) in the development of their Phase II WIPs. In particular, jurisdictions and the Federal partners are expected to work together to establish storm water best management practice (BMP) implementation levels and pollutant (nutrient and sediment) reduction targets that Federal facilities will need to achieve. EPA's April 2011 Guide for Federal Lands and Facilities' Role in Chesapeake Bay Jurisdictions' Phase II Watershed Implementation Plans indicated that Federal agencies should provide TMDL relevant information for inclusion in the jurisdiction WIPs, and recommended that this information be submitted through the use of a Federal Facility Implementation Plan (FFIP).

The National Defense Center for Energy and Environment (NDCEE), operated by Concurrent Technologies Corporation (CTC), was tasked by the Environmental Management Office at U.S. Army Garrison Fort Detrick to develop FFIPs for Fort Detrick and Forest Glen Annex, MD. The U.S. Army Installation Management Command (IMCOM) is working with all of its facilities in the Chesapeake Bay Watershed to develop storm water best management practice (BMP) Opportunity Assessments in response to the TMDL. Because the contents of a FFIP and an Opportunity Assessment are similar, this FFIP will serve the Opportunity Assessment for Fort Detrick and Forest Glenn Annex. These FFIPs will act as the primary source of information for Fort Detrick and Forest Glen Annex for documenting compliance with the EPA's Chesapeake Bay Watershed TMDL.

Technical Approach

The FFIPs include the results of modeling total nitrogen (TN), total phosphorus (TP), and total suspended solids (TSS) loads from point and nonpoint sources. Inputs to the modeling effort included the facility's property boundary and land uses categories with the Chesapeake Bay Watershed Model pollutant loading rates. Load reductions were calculated based on existing storm water BMPs implemented as of July 2012.

The results of the modeling were compared against the two requirements that Maryland Department of Environment (MDE) has established as part of their state-wide Chesapeake Bay TMDL compliance strategy for all jurisdictions: 1) By 2017, jurisdictions must implement BMPs to treat 20% of their impervious urban acreage that was untreated in Baseline Year 2010; and 2) By 2025, jurisdictions must implement urban BMPs that will result in further reductions of TN and TP to meet Target Allocations for delivered urban loads.

Results and Benefits

For Detrick's progress toward the current goals based on MDE's criteria is summarized below:

- Fort Detrick does not yet meet its 2017 goal. Results of the

analyses conducted in the FFIP indicate that, when taking into account all existing and planned BMPs at Fort Detrick, the facility still needs to implement additional BMPs to treat 1.7 acres of currently untreated impervious land. It is recommended that Fort Detrick implement regular street sweeping activities at a minimum of 1.7 acres of paved parking lots (choosing parking lots which currently do not receive treatment from other existing BMPs) in order to achieve this goal. Fort Detrick must continue to implement regular street sweeping activities to maintain these credits.

- Fort Detrick does not yet meet its 2025 current MDE goals (Target Allocations) because the Fort Detrick Target Allocations, which were established by MDE and obtained from the MDE Reduction Calculator, are based on an incorrect value of 396 acres of urban land use at Fort Detrick per EPA data. Based on the evaluation completed in support of the FFIP, which used actual facility land use data, Fort Detrick has 887 acres described as urban land use. As a result of this data error the MDE Target Allocations for Fort Detrick were set extremely low, and when compared against actual urban land uses, are unachievable. At Fort Detrick's request, the NDCEE estimated Target Allocations based on the actual urban acreage at Fort Detrick. The results indicate that Fort Detrick would meet these Estimated 2025 Target Allocations, recalculated for the FFIP, when accounting for load reductions from existing BMPs.

Forest Glen's progress toward the current goals based on MDE's criteria and the goals estimated by the NDCEE is summarized below:

- Forest Glen Annex currently meets and exceeds its 2017 goal. In 2012 regular street sweeping activities were implemented on all streets and parking lots at Forest Glen, treating a total of 31.18 impervious acres that were not treated in 2010, exceeding its goal of 6.74 impervious acres treated. Forest Glen must continue to implement regular street sweeping activities to maintain these credits.
- Forest Glen Annex appears to meet its current MDE 2025 goal (Target Allocation) of 487 pounds/year of TN due to four existing structural BMPs and 2012 implementation of street sweeping activities; however this goal is based on inaccurately high urban acreage and may decrease. Forest Glen would not meet the recalculated 2025 TN goal estimated by the NDCEE for the FFIP with these BMPs. However, when planned and proposed structural BMPs are evaluated, then the lower estimated goal of 367 pounds/year of TN would be met.
- Forest Glen Annex does not meet its current MDE 2025 goal (Target Allocation) of 27 pounds/year of TP with four existing structural BMPs and 2012 implementation of street sweeping activities, nor its estimated 2025 goal (recalculated by the NDCEE) of 25 pounds/year of TP. These goals are also not met when the planned stream restoration project and four proposed structural BMPs are evaluated.

It is recommended that Fort Detrick coordinate with IMCOM and MDE on re-evaluating their Target Allocations, which MDE has based on incorrect facility boundaries and land uses.

Existing, planned, and proposed BMP maintenance inventories for Forest Glen were included in the FFIPs to ensure all BMPs were tracked and maintained. BMP maintenance schedules were developed and presented with tasks categorized by recommended frequency. This will assist facility managers with implementation of these critical tasks, which are necessary to maintain credits toward achieving goals associated with Chesapeake Bay TMDL compliance.

Technology Transfer and Outreach

These FFIPs will act as the primary source of information for Fort Detrick and Forest Glen Annex for documenting compliance with the EPA's Chesapeake Bay Watershed TMDL.

Government POC
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Status
Completed

