

# Army Chesapeake Bay Total Maximum Daily Loads Pilot (Task N.0715)

## Statement of Need

In response to Executive Order 13508, Strategy for Protecting and Restoring the Chesapeake Bay Watershed, the U.S. Environmental Protection Agency (EPA) is working with its partner states to set restrictions on nitrogen, phosphorus, and sediment pollution through a Total Maximum Daily Load (TMDL) to restore the Chesapeake Bay and its network of local rivers, streams, and creeks. The partner states include Maryland, Virginia, Pennsylvania, Delaware, New York, and West Virginia, as well as the District of Columbia (DC). The TMDL has been divided among the states and DC, which will further divide the pollution loadings among local sources, improving their ability to target and achieve reductions. In December 2010, the six states and DC submitted Final Phase I Watershed Implementation Plans (WIPs) indicating how they will achieve their shares of the TMDL, identifying specific pollution reduction targets by geographic location and source sector to achieve allowable loadings, and providing a description and schedule of actions to be taken to achieve the reductions. In addition, the six states and DC will be developing Draft Phase II WIPs for submittal to the EPA in December of 2011 to document how reduction targets will be sub-allocated within the States, including allocations for federal facilities. On April 29, 2011, EPA released the "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 DC) in the development of their WIPs. In response to TMDL implementation and the EPA April 2011 Guide, Army facilities will need to establish baseline loads for nutrients and sediments and work with local decision-makers, the states or DC, and EPA to negotiate their individual allocations, which will be used to set their maximum pollutant loads associated with existing and future permits. In addition, Army installations will need to be prepared to negotiate their share of loadings during the development of state WIPs.

## Technical Approach

This task evaluated a diverse group of Army facilities, including Aberdeen Proving Ground, MD; Fort A.P. Hill, VA; Fort Belvoir, VA; Fort Meade, MD; Fort Detrick, MD; Fort Indiantown Gap Army National Guard, PA; Letterkenny Army Depot, PA; and Scranton Army Ammunition Plant, PA. The purpose of this task was to prepare Army facilities for compliance with the Chesapeake Bay TMDL by calculating facility nutrient and sediment loads, evaluating load reductions from existing storm water best management practices (BMPs), conducting an opportunity assessment for future BMPs, and providing a guidebook and training sessions so that the pilot process could be transferred for use by other Army facilities in the Chesapeake Bay Watershed.

To complete this Task, the NDCEE identified existing information sources related to the TMDL at eight Army facilities and developed a TMDL Gap Analysis to identify missing data and information that are necessary to establish baseline loading conditions for point and nonpoint sources at Army Facilities. The NDCEE then calculated baseline nitrogen, phosphorus, and sediment loads at Army Facilities using available Geographic Information System (GIS) data, outputs from EPA's Chesapeake Bay Watershed Model, and spreadsheet models developed by the NDCEE. A Watershed Implementation Plan Model and TMDL Monitoring Strategy were then developed

for Army facilities to evaluate load reductions from existing BMPs, conduct a future BMP opportunity assessment, document BMP tracking and reporting requirements, and assess any potential requirements for storm water sampling. Lastly, the NDCEE developed a guidance document and delivered training to Army facilities that outlined the pilot process developed during this task in order to transfer the process for use by other Army facilities within the Chesapeake Bay Watershed. This task required coordination within a large project team, including the Assistant Secretary of the Army for Installations, Energy and Environment (ASA(IE&E)), Deputy Assistant Secretary of the Army for Environment, Safety, and Occupational Health (DASA-ESOH), Assistant Chief of Staff for Installation Management (ACSIM), Installation Management Command (IMCOM), Army Materiel Command (AMC), Army National Guard (ARNG), Medical Command (MEDCOM), eight Army facilities, and appropriate Federal and State regulatory agencies.

**Government POC**  
Amy Alton, ASA(IE&E)

**Status**  
Completed

## Results and Benefits

The outcome was a pilot process that used GIS to compile land cover data in coordination with current county, state, and EPA TMDL modeling, calculation of nutrient and sediment loads for various Army facilities, and a prioritization of Army point and non-point source opportunities to comply with the proposed Chesapeake Bay TMDL. Implementation of the pilot process was documented in the TMDL Gap Analysis Cumulative Report, TMDL Baseline Assessment Reports, and Watershed Implementation Plan Model and TMDL Monitoring Strategy documents. A detailed outline of the steps taken to implement the pilot process was documented in a Guidebook and presented during training sessions.

## Technology Transfer and Outreach

Using the Guidebook, the pilot process was transferred to the Army via delivery of four training sessions to various Army personnel throughout the Chesapeake Bay Watershed. This guidebook and training will assist Army facilities in participating in the development of State Watershed Implementation Plans and developing baseline loading and BMP assessments in preparation for meeting the TMDL requirements as individual load allocations are developed and assigned.

*The Bay TMDL will be the largest and most complex ever developed, involving six states and DC and the impacts of pollution sources throughout the 64,000-square-mile watershed. (Figure from <http://www.baygateways.net/gatewaymap.cfm>)*

