

## **EPA ASSESSMENT OF FEDERAL AGENCIES’ 2012-13 CHESAPEAKE BAY WATER QUALITY PROGRESS, WIP SUPPORT and 2014-15 MILESTONES**

The U.S. Environmental Protection Agency (EPA) is providing an assessment of the progress made by federal agencies toward meeting the 2012-2013 water quality milestones set forth under the Chesapeake Bay Executive Order 13508 (EO) Strategy and subsequent EO 13508 Action Plans. These activities support the Chesapeake Bay jurisdictions in meeting their 2012-13 two-year milestones and Watershed Implementation Plan (WIP) commitments that are part of the accountability framework established by the Chesapeake Bay Total Maximum Daily Load (Bay TMDL). This assessment also provides an overview of 2014-2015 federal two-year milestone commitments and ideas for future improvements to federal agency coordination with the Bay jurisdictions. A detailed summary of the 2012-2013 EO programmatic water quality milestone achievements can be reviewed at: <http://executiveorder.chesapeakebay.net/>.

Section 117(f) of the Clean Water Act (CWA) directs federal agencies that own or operate a facility within the Chesapeake Bay watershed to participate in regional and sub-watershed planning and restoration programs. In addition, federal agencies committed in the EO Strategy to participate in pollutant reduction programs and to implement policies and programs to comply with Section 438 of the Energy Independence and Security Act (EISA 438) to achieve the goal of a restored Chesapeake Bay. In 2011, EPA issued the Guide for Federal Lands and Facilities’ Role in Chesapeake Bay Jurisdictions’ Phase II Watershed Implementation Plans, which describes EPA’s expectations for federal agency coordination with the Bay jurisdictions and participation in WIP implementation. EPA also developed the Guide for Chesapeake Bay Water Quality Two-year Milestones, which describes EPA’s expectations for federal agency development of numeric and programmatic water quality milestones and coordination with the Bay jurisdictions in the development of such milestones for individual federal facilities.

Progress made during the Phase II WIP development process to engage the Bay jurisdictions and federal agencies continues as described below; however more interaction and coordination is needed.

### **Cross-Sector Activities and Support of State WIP and Milestone Commitments 2012-2013 Achievements**

- EPA managed the Bay TMDL accountability framework, including working with the Bay jurisdictions as they submitted progress reports related to 2012-2013 milestone commitments, evaluating those commitments, working with the Bay jurisdictions to assess the load reductions resulting from best management practices (BMPs) that the Bay jurisdictions annually report to EPA, and assessing milestone and WIP implementation progress. EPA conducted an interim assessment of 2012-2013 milestone progress in 2013.
- EPA worked with federal agencies to develop a BMP planning tool known as the Bay Facility Assessment Scenario Tool (BayFAST), which allows federal agencies to estimate current loads from individual facilities and the pollutant reductions that would result from various BMP scenarios. The tool will facilitate federal agency reporting of planned BMPs to the Bay jurisdictions for inclusion in future milestones.

- The U.S. Geological Survey (USGS) developed a prototype for an online editor tool that would allow federal property managers to update facility boundaries and maintain the inventory of federal properties in the watershed. An online tool would allow federal agency representatives to efficiently update the inventory of federal facilities in the Bay watershed, including improving data on land cover. The data is expected to be used in the Phase 6 watershed model to inform the evaluation of federal progress.
- In 2013, federal agencies increased their BMP implementation progress reporting compared to 2012. Data was submitted to the jurisdictions by the Smithsonian, National Park Service (NPS), NASA-Langley, Fish and Wildlife Service (FWS), Department of Defense (DoD), National Institute of Standards and Technology (NIST), and the General Services Administration (GSA).
- Several federal agencies submitted information related to future BMPs for 2014-2015 two-year milestones, including NPS, NASA-Langley and GSA. DoD submitted information on programmatic milestones.
- A summary of how the Bay jurisdictions integrated federal facility data into their 2013 implementation progress submissions appears at the end of this report.

#### **2012-2013 Milestones Missed**

- No cross-sector milestones missed.

#### **2014-2015 Milestone Strengths**

- EPA evaluated results of 2012-2013 jurisdiction and federal milestones related to Bay TMDL and WIP implementation, as well as new jurisdictional and federal 2014-2015 two-year milestone commitments. EPA will continue to evaluate milestone progress and commitments annually, including a mid-term evaluation of 2014-2015 milestone progress.
- EPA and its partners will deliver the working draft of the Phase 6 Chesapeake Bay Watershed Model and accompanying Scenario Builder to the Chesapeake Bay Program (CBP) partnership according to priorities set by the partnership and will begin calibration in September 2015. The Phase 6 watershed model and Scenario Builder are being developed for use during the 2017 midpoint assessment of the Bay TMDL.
- EPA will provide funding to support expert BMP panels to develop and/or update effectiveness estimates for nutrient and sediment controls simulated by the CBP models.
- DoD will continue to work with key partners to support WIPs, update installation land use information and improve available tools for installations to determine and plan for future load targets and expected load reductions.

#### **Key Areas to Address in the 2014-2015 Milestone Period**

- EPA expects improved coordination with the Bay jurisdictions on setting milestone commitments and reporting progress.

#### **Urban/Suburban Stormwater**

##### **2012-2013 Milestone Achievements**

- DoD continued to work with the Bay jurisdictions to comply with their National Pollutant Discharge Elimination System (NPDES) permits for municipal separate storm sewer systems

(MS4s), construction and industrial stormwater. For example, DoD facilities completed Chesapeake Bay Pollution Reduction Plans (CBPRPs) required by Pennsylvania’s Phase II MS4 General Permit.

- DoD continued to complete stormwater assessments in Fiscal Year 2013 at many installations in the Bay watershed to identify appropriate stormwater management controls to reduce pollutant loadings and develop reduction plans and other actions required by MS4 permits.
  - The Department of Army provided oversight and completed the National Defense Center of Energy and Environment (NDCEE) ‘Chesapeake Bay TMDL Watershed Best Management Practices’ project at 12 installations throughout the Bay watershed, which included a pre-design phase along with estimates of their implementation costs and load reduction potential. The Army additionally completed BMP Opportunities Assessments at multiple locations within the watershed.
  - The Navy completed four and initiated five BMP Opportunities Assessments, including an inventory of existing stormwater BMPs and an assessment of opportunities to implement stormwater BMPs.
  - The Navy completed Stormwater Improvement Plan projects at 10 installations, which included: 1) determining the amount of treated and untreated impervious and regulated pervious surfaces at each installation to verify and/or update land use data; 2) inventorying existing stormwater BMPs; 3) estimating pollutant reductions provided by existing BMPs; 4) calculating the remaining nutrient reductions needed to meet permit requirements; and 5) identifying opportunities for future BMP placement.
- USDA improved two major streams that cross the Beltsville Agricultural Research Center (BARC). The Indian Creek project restored approximately 1,900 linear feet of stream, and the Little Paint Branch project restored approximately 1,200 linear feet of stream.
- FWS, NASA, GSA, DoD, and NPS reported that they had considered the EISA standard across a total of approximately 174 construction projects in the watershed.
- During Fiscal Years 2012 and 2013, EPA reviewed 7 stormwater-related (municipal, industrial and construction) general permits, 1 Phase II MS4 individual permit and 13 Phase I individual MS4 permits. EPA objected, at least initially, to 15 of those permits.
- During Fiscal Years 2012 and 2013, EPA Region 3 NPDES Enforcement Branch conducted 8 stormwater inspections at federal facilities.

#### **2012-13 Milestones Missed**

- EPA has deferred action on revisions to a national stormwater rule. As an alternative, EPA will provide incentives, technical assistance and tools to communities to encourage them to implement strong stormwater programs; leverage existing requirements to strengthen municipal stormwater permits; and continue to promote green infrastructure as an integral part of stormwater management.
- The DoD BMP Operations and Maintenance Policy was deferred to 2014-2015 to ensure the policy is focused on the results of the BMP assessments being completed.

#### **2014-15 Milestone Strengths**

- EPA, NPS, DoD, and GSA will continue to implement a Memorandum of Understanding (MOU) regarding stormwater in the District of Columbia (the District) signed in 2013. The

goal of this MOU is to promote collaboration among the District’s largest federal landowners to address stormwater management and assist the District in meeting their water quality objectives. The signatories expect to invite other federal agencies that own or operate facilities in the District to join the effort and demonstrate federal leadership by example.

- DoD will continue to participate in and support Chesapeake Bay jurisdictions’ MS4 regulation development in order to ensure installations are prepared to be responsive to any applicable permit requirements.
- EPA will work with the jurisdictions to ensure all federal facilities within the Chesapeake Bay watershed are identified and have appropriate NPDES stormwater permit coverage.
- Federal agencies will continue to work to evaluate and pay appropriate stormwater fees in all Bay jurisdictions in accordance with existing law and policy. For example, Naval District Washington is collaborating with D.C. Water to address discrepancies related to property boundaries at several facilities within the District. Once resolved, the Navy will pay all appropriate stormwater fees within the District in accordance with existing law and policy.
- EPA will provide timely requests to the federal community to identify information sources for tracking EISA Section 438 implementation to evaluate the extent of implementation.
- EPA plans to propose actions to strengthen the national stormwater program in 2014 and 2015.

**Key Areas to Address in the 2014-2015 Milestone Period**

- The results of DoD's stormwater opportunity assessments and stormwater improvement plans are tools that will be used to develop pollution reduction plans and TMDL action plans that are required in Pennsylvania and Virginia and will eventually be required in Maryland's Phase II General MS4 permit.

**Wastewater Treatment Plants and Onsite Systems**

**2012-13 Milestone Achievements**

- EPA completed an analysis of wastewater data for the 9 municipal and 2 industrial significant federal wastewater treatment plants (WWTPs) in the Bay watershed. EPA’s analysis of trends of total flow, average concentration and total loads for the 11 plants from 2009 to 2013 indicates:
  - The majority of the plants have reduced concentrations through investments in enhanced nutrient removal upgrades;
  - At this time there are no nutrient load compliance issues at the 11 significant federal WWTPs; and
  - Due to the current low flow and concentrations, the total nitrogen and phosphorus loads of all the 11 plants combined in 2013 met the combined individual Bay TMDL wasteload allocations.
- During Fiscal Years 2012 and 2013, EPA reviewed permits for a total of 166 significant wastewater facilities and objected to three of the permits.
- During Fiscal Years 2012 and 2013, EPA Region 3 NPDES Enforcement Branch conducted 3 wastewater inspections at federally permitted WWTPs.
- In June 2013, EPA released a model program for onsite wastewater treatment systems in the Chesapeake Bay watershed. The model program is part of EPA’s effort to promote nitrogen

reductions from onsite systems through treatment technologies and improved design, installation, and management practices.

### **2012-2013 Milestones Missed**

- No wastewater milestones were missed.

### **2014-2015 Milestones Strengths**

- EPA will work with the Bay jurisdictions to develop a guide for streamlining and unifying the approval process of new advanced onsite wastewater treatment technologies. This guide will highlight each jurisdictions’ requirements to determine if any efficiencies can be made.

### **Key Areas to Address in the 2014-2015 Milestone Period**

- There are three significant WWTPs operated by DoD where effluent limits are not yet meeting 2025 WIP target concentrations. DoD should continue with the upgrades at those plants that are currently underway to achieve target effluent concentrations.

### **Atmospheric Nitrogen Deposition**

#### **2012-2013 Milestone Achievements**

- The 2013 target was to reduce EPA’s portion of air deposition load to tidal surface waters by an estimated 350,000 pounds during the 2012-2013 milestone period, for a total of approximately 2.5 million pounds of nitrogen reductions between 2009 and 2013. The 2013 result for this measure is 2.5 million pounds reduced between 2009 and 2013.
- The CBP partnership agreed to a procedure to credit air emission reductions obtained by the jurisdictions that go beyond the requirements of the Clean Air Act (CAA). In addition, refinements were made to the Community Multi-scale Air Quality Model (CMAQ) in order to better simulate ammonia deposition loads of nitrogen in the Chesapeake watershed.
- EPA finalized nitrogen oxides (NOx) and sulfur oxides (SOx) Secondary National Ambient Air Quality Standards on March 20, 2012.
- The final rule for EPA/Department of Transportation 2017-2025 Model Year Light-Duty Vehicle Green House Gas (GHG) Emissions and Corporate Average Fuel Economy (CAFE) Standards was issued on October 15, 2012. The CAFE standards will lower mobile source NOx over time as fleet turnover occurs and as CAFE standards increase.
- The final rule for Tier 3 Light-Duty Vehicle Emissions and Fuel Standards final rule was issued on April 28, 2014 and will reduce NOx, in addition to other pollutants, beginning in 2017.

### **2012-2013 Milestones Missed**

- No atmospheric deposition milestones missed.

### **2014-2015 Milestones**

- EPA will work with states to develop State Implementation Plan (SIP) revisions to reduce NOx emissions including:
  - Assist states in developing SIP revisions for nonattainment areas for the 2008 ozone standard.
  - Work with states to designate nonattainment areas for the 2012 PM2.5 standard.

- Oversee state implementation of Clean Air Act 129 rules. Once fully implemented, these rules will reduce emissions of NO<sub>x</sub>, as well as air toxics.

## **Agriculture**

### **2012-2013 Milestone Achievements**

- U.S. Department of Agriculture (USDA) completed stream restoration at the BARC. Restoration was achieved by the construction of three biofiltration areas on BARC near its dairy and swine facilities. Over the life of these structures, they are expected to store approximately 11 million pounds (5600 tons) of sediment.
- In 2013, USDA National Resources Conservation Service (NRCS) released the Conservation Effects Assessment Project (CEAP) report showing that voluntary conservation efforts on cultivated croplands is working in the Chesapeake Bay watershed.
- USDA established a network of Chesapeake Bay Water Quality Trading Conservation Innovation Grant awardees. Network participants include representatives from state and local government, non-governmental organizations, EPA and USDA.
- By funding construction of treatment and distribution facilities, USDA installed approximately 300 waste storage facilities in 2013.
- In Fiscal Year 2012, USDA, EPA and USGS developed and implemented tracking, reporting and verification mechanisms for voluntary conservation practices and other BMPs installed on agricultural lands.
- During 2012 and 2013, EPA reviewed a total of 50 individual Concentrated Animal Feeding Operations (CAFO) permits. In addition, the Pennsylvania NPDES General Permit for CAFO Operations (PAG-12) was issued, which represents more than 50% of NPDES CAFO-permitted facilities in Pennsylvania.
- In lieu of promulgating revised federal regulations, EPA agreed, as part of an amended settlement agreement with the Chesapeake Bay Foundation, to several actions focused on CAFO program assessments and assessments of CAFO permits and associated nutrient management plans as described below in 2014-2015 milestones.
- In Fiscal Year 2013, conservation practices were established on more than 271,000 unique acres of high priority working lands in the Bay watershed, bringing the total to approximately 1.3 million acres or 32 percent of USDA’s goal of 4 million acres by 2025.

### **2012-2013 Milestones Missed**

- A USDA report evaluating the Chesapeake Bay Watershed Initiative (CBWI) program contained in the Food, Conservation, and Energy Act of 2008 was not completed in 2013 but will be completed in 2014.

### **2014-2015 Milestones Strengths**

- Federal partners will implement conservation practices that protect the watershed’s soil and water resources while maintaining productive working lands.
- USDA will pilot the Conservation Delivery Streamlining Initiative’s Conservation Desktop for national use; integrate resource concerns, selected inventory and analysis tools, electronic signature, and geospatial information into conservation planning tools.
- USGS will assess progress made in the showcase watersheds including information on water quality conditions and changes.

- USDA will continue to pursue the development of agricultural certainty programs in Bay jurisdictions.
- EPA will conduct animal feeding operation (AFO) reviews in two Bay jurisdictions.
- EPA will conduct six AFO/CAFO Program Assessments.
- EPA will review two CAFO permits and associated nutrient management plans.

**Key Areas to Address in the 2014-2015 Milestone Period**

- No issues due to limited acres of federal land in agricultural land use.

**Summary Points and Next Steps**

- Federal agencies should ensure BMPs are properly installed, maintained, tracked and reported. USDA NRCS will support voluntary actions by farmers and landowners by providing financial and technical assistance through several funding programs.
- EPA will work to formalize federal facility data calls across all Bay jurisdictions for 2014 to ensure information needed to complete assessments of BMP progress is obtained. Currently, there is limited information available on which to complete an assessment of federal facility BMP progress.
- The CBP Federal Facilities Team, coordinated by EPA, will provide a forum for agency environmental coordinators to communicate with EPA, each other and the Bay jurisdictions to achieve clarity of TMDL-related expectations and find the most efficient way to manage the collection and provision of needed information.
- The CBP partnership is developing verification protocols in order to ensure that practices implemented are achieving the anticipated pollutant load reductions and are appropriately credited by the CBP models. These protocols will address the source of BMP implementation data and under-reported and non-cost-shared practices and will include guidelines for identifying and removing duplicate records and addressing expired, failed, or removed practices. Federal facilities will be expected to report verified implementation data to the jurisdictions in a timeframe that can be incorporated into annual progress runs.

**Summary of Federal Facility Data in 2013 Progress**

Below are examples of BMPs implemented on federal land during 2013 that were reported to the jurisdictions and credited for progress toward achieving reduction targets.

**District of Columbia** - 12 total acres of urban lands treated by stormwater BMPs reported by four different federal agencies. DDOE plans to continue to work with federal partners to collect historic BMP implementation and maintenance data in 2014.

**Delaware** – No federally managed land in the jurisdiction’s portion of the watershed.

**Maryland** - 355 acres of federal implementation completed by several agencies. Maryland Department of Environment plans to continue to work with federal facilities to gather more implementation data in 2014.

**New York** - No BMPs reported by the jurisdiction.

**Pennsylvania** – No BMPs reported by the jurisdiction.

**Virginia** - 8 acres of stormwater BMPs as well as street sweeping from NASA-Langley Research Center, and 558 acres of forest harvesting practices on National Forest Service lands.

**West Virginia** - 5 acres of tree planting on the FWS’s National Conservation Training Center.

#### **Issues with 2013 Federal Facility Progress Data**

- Some BMPs were reported outside the valid time period - only BMPs installed from 2006 through 2013 were available for credit in 2013 Progress.
- One jurisdiction did not specifically track implementation on federal lands or report implementation for 2013 Progress.
- Some reported practices were not BMPs approved by CBP.
- Some information submitted by federal agencies was incomplete and did not contain sufficient information for reporting.
- Some data were received too late in the reporting process.

#### **Ideas for Future Improvement in Federal Facility Progress Data**

- In 2013, there was an overall lack of quality data from federal facilities and agencies on BMP implementation through 2013 and commitments for 2014-2015. This could have been because many facilities are unfamiliar with the process for reporting data to CBP and were unable to provide all necessary information. Issues were particularly apparent in the District of Columbia, Maryland and Virginia. Each of these jurisdictions supplied detailed data templates for the federal agencies and facilities to complete, but in some cases the data were not available or the templates were not used.
- Federal agencies and Bay jurisdictions should proactively work to improve communication on data collection methods for 2014 Progress and beyond. Maryland, Virginia and the District of Columbia either have begun or have committed to begin formal processes for coordination and for collecting data from federal facilities and agencies. Other jurisdictions with federally owned land are encouraged to establish formal coordination mechanisms.
- Federal agencies should submit federal facility data in a way that will enable the jurisdictions and CBP partnership to clearly identify federal and non-federal data in the National Environmental Information Exchange Network (NEIEN).
- Federal agencies should review and correct data on BMP implementation across all sectors, including wastewater, and report to jurisdictions and CBP by fall 2015 as part of CBP’s midpoint assessment in 2017.

#### **Recommended Federal Actions and Assistance**

- EPA is working with the U.S. Army Corps of Engineers Baltimore District, other consulting federal agencies, state and local government representatives, NGOs and stream restoration practitioners to improve the efficiency of the permitting process for stream restoration. This includes addressing technical issues and concerns, such as developing siting criteria and defining monitoring, assessment and performance parameters. Land-holding federal agencies



should work with the jurisdictions to identify stream restoration opportunities, participate in project planning and allow expedient access to restoration sites.

- EPA will continue to develop and offer training on planning and decision-support tools including BayFAST ([www.BayFAST.org](http://www.BayFAST.org)).
- EPA will continue to lead or help to lead the organization of coordination teams such as the Federal Facilities Team, the CBP Watershed Technical Workgroup and the DC MOU team.
- EPA will continue to assess options for developing methods to track progress in reducing the release of nitrogen, phosphorus and sediment pollutants from federal lands and facilities. Progress assessment will continue to provide accountability and inform future federal activities that are intended to support the jurisdictions’ WIPs and the TMDL.
- EPA will work with federal partners to provide leadership and coordinate with the jurisdictions on WIP and milestone implementation to reduce pollution from federal lands and meet the Bay TMDL, consistent with the EO 13508 Strategy.