EPA EVALUATION OF FEDERAL AGENCY 2014-2015 CHESAPEAKE BAY TOTAL MAXIMUM DAILY LOAD PROGRESS and 2016-2017 WATER QUALITY MILESTONES

The U.S. Environmental Protection Agency (EPA) is providing an evaluation of federal agency progress toward meeting 2014-2015 programmatic milestones and reduction target commitments for the 2016-2017 milestone period. During 2014-2015, federal agencies and the Chesapeake Bay jurisdictions collaborated on development of protocols for setting federal facility pollutant reduction targets and targets were set for many federal facilities and lands in the Chesapeake Bay watershed. Following this collaboration, a joint federal and state Federal Facilities Workgroup was established to ensure continual and enhanced coordination among the jurisdictions and federal agencies.

Load Reduction Review

The outcomes listed in this section resulted from the activities of the Chesapeake Bay Program (CBP) partnership. They are listed in this report due to the responsibility of EPA and other federal agencies in the restoration effort.

2014-2015 Milestone Achievements

- 2012-2014 progress shows that 34 percent of the Bay tidal waters are attaining applicable water quality standards. This increase from the 2011-2013 level of 29 percent is mainly due to an improvement in dissolved oxygen especially for the open water, deep water and deep channel segments and implies a reasonable trajectory toward the goal of 45 percent attainment by 2018.
- Federal Fiscal Year (FY) 2015 progress (based on 2014 Progress Runs) indicate 71 percent of phosphorus reduction actions in place with an FY 2015 target of 37.5 percent.
- 173,684 acres of new conservation practices were applied on agricultural working lands in high priority watersheds.

2014-2015 Milestones Missed

• FY 2015 progress (based on 2014 Progress Runs) indicate 21 percent of nitrogen reduction actions in place with an FY 2015 target of 37.5 percent and 25 percent of sediment reduction actions in place with an FY 2015 target of 37.5 percent.

2016-2017 Milestones Strengths

• Federal agencies have committed to have practices and controls in place that are expected to achieve 60 percent of the nutrient and sediment pollutant load reductions necessary to achieve applicable water quality standards compared to 2009 levels.

Federal Facilities and Lands Implementation Activities

2014-2015 Milestone Achievements

• EPA and the Bay jurisdictions set nutrient and sediment pollution reduction targets for over 700 federal facilities throughout the watershed and federal agencies submitted facility-specific milestones for FY 2016-2017 (see Appendix C – lists by agency and state).

- For the specific purpose of setting federal facilities targets, Department of Defense (DoD) identified and provided a complete inventory of facilities in the watershed, updated and reported facility land uses, historical best management practice (BMP) implementation and FY 2015 BMP progress implementation to each Bay jurisdiction and the EPA Chesapeake Bay Program Office (CBPO).
- DoD completed a significant number of BMP Opportunity Assessments (e.g., 563 identified within Hampton Roads installations alone) and continues to design BMP concepts, develop construction documentation, and program for BMP retrofits and construction.
- EPA issued a new Chesapeake Bay Facility Assessment Scenario Tool (BayFAST) tool for facility-level BMP scenario planning (www.BayFAST.org) and completed multiple training webinars in 2014 and 2015.
- U.S. Army Corps of Engineers (USACE) issued the new Chesapeake Bay Total Maximum Daily Load (Bay TMDL) Regional General Permit (RGP) authorizing TMDL activities in waters of the U.S., including wetlands, within Maryland, the District of Columbia, and certain military installations of northern Virginia.
- EPA and the federal agencies owning most federal land in the Bay watershed formed a joint jurisdiction and federal workgroup under the CBP partnership's Water Quality Goal Implementation Team to coordinate advancement of federal involvement in implementing actions to meet Bay watershed implementation plans (WIP) commitments and Bay TMDL allocations. This demonstrates federal agencies' continued Executive Order 13508 commitment to support the Bay jurisdictions in their watershed implementation planning process.
- Federal agencies made progress in achieving more complete communication with the Bay jurisdictions regarding BMP implementation progress information in 2014-2015 (see Appendix A) and 2016-2017 programmatic and BMP-specific milestones (see Appendix B).

2014-2015 Milestones Missed

• None identified.

- EPA and the U.S. Geological Survey (USGS), with input from multiple federal agencies, committed to identify and map all federal land-holdings in the Chesapeake Bay watershed using the Federal Facilities Editor Tool in order to inform the CBP Phase 6 Watershed Model.
- Federal agencies with lands and facilities in the watershed that received 2017 and 2025 pollution reduction targets from EPA and the Bay jurisdictions committed to ensure that practices are in place to achieve an equivalent 60 percent reduction by the end of 2017 as described in the 2015 *Protocol for Setting Targets, Planning BMPs and Reporting Progress for Federal Facilities and Lands*.
- EPA committed to ensure BayFAST, a tool for facility-level planning, is enhanced to improve the usability of the tool, its functionality in supporting annual progress reporting and upgrade to be consistent with the partnership's CBP Phase 6 Watershed Model.

- DoD committed to continue to work with key partners to support WIPs, update information when needed, and assist with improving available tools for installations to determine/plan for future load allocations and expected load reductions.
- DoD planned 2016-2017 BMP implementation with an expected cost of approximately \$42M.

Key Areas to Address in 2016-2017 Milestone Period

- Federal agencies and the jurisdictions need to continue to improve the process related to reporting federal BMP progress data.
- Federal agencies need to improve the completeness of reported data. EPA notes instances of lapsing agency reporting activities (see Appendix A).
- Jurisdictions need to work with CBPO and federal agencies to ensure that reported data is entered into the National Environmental Information Exchange Network (NEIEN) so that the CBP Phase 6 Watershed Model reflects a more complete representation of implementation at the federal level.

Programmatic Support to TMDL/WIPs

2014-2015 Milestone Achievements

- EPA coordinated the first-ever CBP partnership Basinwide BMP Verification Framework effort including review of all seven Bay jurisdictions' verification program quality assurance plans.
- The Lower Susquehanna River Watershed Assessment¹ (LSRWA) was led by an interagency study team authorized to analyze the movement and impacts of sediment and associated nutrient loads from the lower Susquehanna watershed, including behind the Conowingo Dam, to the upper Chesapeake Bay. The LSRWA results led to a reevaluation of the role of reservoir infill in achieving applicable water quality standards. A follow-up multiagency research, monitoring, and modeling program focused on the dynamic infill of the Conowingo reservoir and its influence on Chesapeake Bay hypoxia is now underway and its findings will support management decisions during the 2017 Bay TMDL midpoint assessment.
- DoD and other federal agencies supported the CBP partnership development and approval of the Basinwide BMP Verification Framework establishing the protocol through which agency partners ensure practices, treatments and technologies resulting in reductions of nitrogen, phosphorus, and/or sediment pollutant loads are implemented and operating correctly. DoD uses the state programs for tracking, verifying and reporting BMPs.
- EPA completed provision of financial support to jurisdictions by maintaining funding, as authorized, through EPA's assistance programs including Clean Water Act (CWA) Section 319, State Revolving Fund (SRF), Chesapeake Bay Implementation Grants (CBIG) and Chesapeake Bay Regulatory and Accountability Program (CBRAP). 2014-2015 grant funds distributed to states; 2014 \$19 million for CBIG and CBRAP; 2015 \$23.7 million for CBIG and CBRAP. Also a new allocation of local government funding of \$5 million was provided to state and local governments in both 2014 and 2015.

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¹ http://dnr.maryland.gov/bay/LSRWA/report.htm

• EPA increased financial support to localities and other entities through the Innovative Nutrient and Sediment Reduction Grants and the Small Watershed Grants. In 2014 both programs received \$5 million each and in 2015 the programs received \$6 million each.

2014-2015 Milestones Missed

• None identified.

2016-2017 Milestones Strengths

- EPA committed to provide final Phase III WIP and two-year milestones expectations to the Bay jurisdictions and federal agencies.
- EPA committed to provide final Phase III WIP Planning Targets to the Bay jurisdictions and revised federal facilities targets based on revisions to the Chesapeake Bay Phase 6 Model.
- EPA committed to review and approve each Bay jurisdiction's Best Management Practice verification program contained within the CWA Section 117 grant Quality Assurance Project Plans.
- EPA committed to continue to provide financial support to Bay jurisdictions, as authorized, through EPA's assistance programs including CWA Section 319, SRF, CWA Section 117 CBIG and CBRAP.
- EPA committed to continue to provide financial support to localities and other entities through the Innovative Nutrient and Sediment Reduction Grants and the Small Watershed Grants, as authorized.

Monitoring and Science Support

2014-2015 Milestone Achievements

- USGS released a report entitled *Understanding Nutrients in the Chesapeake Bay Watershed and Implications for Management and Restoration The Eastern Shore* ² about nutrient trends on the Eastern Shore, which revealed worsening conditions in some areas.
- USGS completed updates of nutrient and sediment trends in the Bay watershed as part of CBP partnership's midpoint assessment of the Bay TMDL.
- USGS and EPA worked with Chesapeake Conservancy on approaches to acquire high-resolution land cover information. Chesapeake Conservancy is working to supply the updated information in 2016 that will be useful to better focus restoration efforts. USGS also worked with the Bay jurisdictions to reclassify land cover information that will be used in the CBP partnership's Phase 6 Watershed Model.
- EPA and USGS worked with the CBP partners to enhance land cover classifications, enhance sediment information, and represent groundwater effects on nutrients in the CBP partnership's Phase 6 Watershed Model as part of the Bay TMDL midpoint assessment.
- EPA worked with CBP Scientific, Technical Assessment & Reporting (STAR) team Climate Change Workgroup on approaches to analyze and address effects of climate change on water quality.
- EPA with USGS and the Bay jurisdictions made progress in developing a strategy for Building and Sustaining Integrated Networks (BASIN) for estuary and watershed

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² http://pubs.usgs.gov/circ/1406/

monitoring programs for the Bay TMDL and associated water quality standards to 2025. A report was completed by the CBP STAR team "Building Environmental Intelligence: Leading the Future of Water-quality Monitoring." Recommendations were presented to CBP managers and actions are being developed to implement the strategy in 2016.

2014-2015 Milestones Missed

• None identified.

- EPA and USGS, working with University of Maryland Center for Environmental Science (UMCES), committed to summarize patterns of attainment of applicable water quality standards for Bay tidal waters over time from 1985-2014.
- EPA and USGS, working with UMCES, committed to provide an update describing temporal and regional patterns in water quality standards attainment of dissolved oxygen, water clarity/submerged aquatic vegetation (SAV) and chlorophyll-a.
- EPA and USGS committed to publish a new Ambient Water Quality Criteria Technical Addendum to provide updated guidance on water quality standards attainment assessment methods for the tidal Bay jurisdictions.
- EPA, USGS, UMCES and other CBP partners, working through the STAR team, committed to begin to implement recommendations based upon the water quality-focused *Building Environmental Intelligence* report to expand monitoring with non-traditional partners. The first activity will be to integrate the role of Citizen Science to address gaps in water-quality-related monitoring and assessment needs.
- UMCES, EPA, Maryland Department of Natural Resources (DNR), and Virginia
 Department of Environmental Quality (DEQ) committed to implement new process for
 quantifying trends in tidal water-quality parameters. The new process incorporates
 advances in methods to provide more information on trends in water-quality patterns over
 time.
- USGS, working with the Bay jurisdictions and EPA, committed to provide updates on nutrient and sediment load trends in the Bay watershed to help assess progress toward meeting applicable water quality standards. Updates of loads at the River-Input Monitoring (RIM) stations will be provided annually with results from additional stations in the non-tidal network provided every two years.
- USGS, EPA, and USACE committed to provide support to CBP partnership efforts to
 enhance the CBP water quality models to support decision-making for the midpoint
 assessment and Phase III WIPs. The monitoring information and land use data is being
 used to enhance the CBP partnership's Watershed Model and estuary water-quality
 model.
- EPA committed to work with National Oceanographic and Atmospheric Administration (NOAA) to utilize information from the Chesapeake Bay Interpretive Buoy System (CBIBS) data to enhance tidal results.
- EPA committed to complete ChesapeakeProgress, one of a suite of ChesapeakeStat tools that will provide progress on all 2014 Chesapeake Bay Watershed Agreement to oversight stakeholders and ChesapeakeDecisions, a second in the suite of ChesapeakeStat tools that will allow decision-makers to make better decisions based on adaptive management.

• EPA committed to continue to update the TMDL Tracker and make it available through the ChesapeakeProgress³ and the future ChesapeakeDecisions (under development) websites.

Agriculture

2014-2015 Milestone Achievements

- U.S. Department of Agriculture (USDA) National Resource Conservation Service (NRCS) approved eight Regional Conservation Partnership Program (RCPP) project agreements in the Chesapeake Bay watershed. Through those eight agreements, approximately \$45 million in USDA funding will be available to agricultural producers over the next five years. Partner contributions associated with these projects total over \$35 million.
- Delaware, New York, Virginia, and West Virginia have each been approved for an
 additional \$1 million under the USDA Conservation Reserve Enhancement Program
 (CREP) to increase or maintain acres enrolled in Chesapeake Bay Riparian Forest Buffer
 conservation. USDA challenged the states to craft a proposal during a Chesapeake Bay
 summit in Washington, D.C. (June 2014). In addition to the increased incentives for
 landowners in other states, Farm Service Agency offices in Maryland and Pennsylvania
 will receive support to partner with stakeholders for improved outreach and technical
 assistance.
- USDA completed ongoing work to pilot the Conservation Delivery Streamlining Initiative's Conservation Desktop for national use and conservation planning tools integrate resource concerns, selected inventory and analysis tools, electronic signature, and geospatial information.
- USDA provided direct support to development of agricultural certainty programs in Bay watershed states. Virginia's program launched in 2014. Maryland's program launched in 2015. Delaware developed legislation to support a program.
- EPA conducted animal feeding operation (AFO) sub-watershed reviews in two Bay jurisdictions.

2014-2015 Milestones Missed

• None identified.

- USDA committed to apply 472,000 acres of conservation practices in conjunction with USDA High Priority Performance Goals.
- USDA NRCS committed to pilot the first incremental releases of Conservation Desktop that will enable a new user interface for Protracts in Conservation Desktop and replace Toolkit functionality in order to improve efficiency in the conservation planning process.
- USDA NRCS committed to pilot incremental releases of Conservation Desktop that will enable resource inventory, integrate resource concerns and integrate resource assessment and analysis tools in order to improve efficiency in the conservation planning process.
- USDA NRCS committed to coordinate lessons learned with CBP partners on the Conservation Effect Assessment Program (CEAP) Chesapeake cropland studies (Parts 1

³ http://www.chesapeakestat.com/chesapeakeprogress

- and 2, and the plans for Part 3 study) to discuss their utility for learning about the effectiveness of nutrient management on Chesapeake cropland and opportunities to fine-tune nutrient management to achieve the greatest water quality benefits.
- USDA committed to develop and pilot strategies to ensure that federal, state, and non-government organizations (NGO) conservation programs create mutually reinforcing incentives for producers to install and maintain riparian forest buffers.
- EPA committed to conduct AFO reviews in one Bay subwatershed.
- EPA committed to complete the review of four concentrated animal feeding operations (CAFO) permits and associated Nutrient Management Plans for each Bay jurisdiction.

Urban/Suburban Stormwater

2014-2015 Milestone Achievements

- EPA developed joint work plans with the Bay jurisdictions to address stormwater assessment recommendations. In 2014, EPA provided stormwater program assessments for Delaware and Maryland.⁴ Stormwater program assessments were completed for Pennsylvania and Virginia in 2012. EPA continued to work with New York and West Virginia on developing their work plans.
- EPA provided contractor assistance to Virginia DEQ to review and comment on select Bay TMDL Action Plans submitted by municipal separate sewer stormwater systems (MS4s) to evaluate if they appropriately calculated and developed a strategy to implement pollutant reductions consistent with the Bay TMDL wasteload allocations.

2014-2015 Milestones Missed

• None identified.

- EPA committed to propose a draft District of Columbia MS4 permit for public notice and
- EPA committed to conduct an update of the 2012 stormwater assessments it conducted for Pennsylvania and Virginia.
- EPA committed to revise the Phase II MS4 regulations as required by the Ninth Circuit remand order.
- EPA committed to reissue the Construction General Permit (applicable, in the Chesapeake Bay watershed, to operators in the District of Columbia and federal operators in Delaware).
- EPA committed to conduct oversight review and comment, per the CWA, federal regulations, and respective National Pollution Discharge Elimination System (NPDES) agreements with each state, on draft state MS4 permits: to ensure consistency with the CWA and federal regulations; to ensure consistency with applicable Bay TMDL allocations and the level of pollutant reductions called for in jurisdictions' WIPs; and to ensure that the permits contain enforceable performance measures.

⁴ https://www.epa.gov/chesapeake-bay-tmdl/epa-assessments-stormwater-programs-chesapeake-bay-watershed

Wastewater Treatment Plants and Onsite Systems

2014-2015 Milestone Achievements

• EPA completed outreach and technical assistance to the Bay jurisdictions on Model On-Site (septics) Programs. A data-sharing agreement among states on evaluations of advanced onsite technologies was signed in April 2015⁵.

2014-2015 Milestones Missed

• None identified.

2016-2017 Milestones Strengths

• EPA committed to propose a draft NPDES permit for the Blue Plains wastewater treatment facility in the District of Columbia for public notice and comment.

Offsets and Trading

2014-2015 Milestone Achievements

• EPA issued final technical memoranda setting forth expectations for the Bay jurisdictions' offset and trading programs. Six technical memoranda were issued in 2014. Two of the four scheduled for completion in 2015 are complete with the remaining two in development.⁶

2014-2015 Milestones Missed

• EPA issued only two of the four technical memoranda scheduled for completion in 2015.

2016-2017 Milestones Strengths

- EPA committed to issue a final technical memorandum regarding baselines and a draft technical memorandum regarding MS4s, setting out EPA expectations for the Bay jurisdictions' offset and trading programs in those areas.
- EPA committed to explore means for addressing "interstate trading" considerations.
- EPA committed to conduct draft and final sector load growth demonstration evaluations for each of the Bay jurisdictions.

Atmospheric Reductions

2014-2015 Milestone Achievements

- EPA completed Tier 3 Light Duty Vehicle Rule for nationwide implementation in 2017.
- EPA performed a determination of air quality standards attainment for Maryland in 2015. EPA designated three areas as nonattainment and the remaining two areas scheduled for designation were determined to be in attainment.
- EPA proposed a federal plan for existing sewage sludge incineration (SSI) units that do not have an approved state plan in place that implements emissions guidelines.

⁵ <u>http://executiveorder.chesapeakebay.net/post/Chesapeake-Bay-States-sign-Data-Sharing-Agreement-on-Advanced-Onsite-Wastewater-Treatment.aspx</u>

⁶ http://www2.epa.gov/chesapeake-bay-tmdl/trading-and-offset-technical-memoranda-chesapeake-bay-watershed and http://www.epa.gov/chesapeake-bay-tmdl/trading-and-offsets-chesapeake-bay-watershed

• EPA achieved its portion of air deposition load reduction to tidal surface waters of 350,000 pounds of nitrogen (20 percent of the required load reductions from 2010 to achieve the 15.7 million pound air deposition load allocation to tidal waters by 2025).

2014-2015 Milestones Missed

• EPA did not finalize development of updated Airshed Model scenarios. Scenarios were delayed until 2016 to use a newly updated Community Multi-scale Air Quality model with refined simulation methods for ammonia deposition.

2016-2017 Milestones Strengths

- EPA committed to significantly reduce nitrogen deposition to the Bay and watershed by 2020 through national rules under the Clean Air Act (CAA):
 - Update the 2017 air deposition modeling scenario for the Chesapeake Bay watershed incorporating the federal plan to address interstate transport for the 2008 national ambient air quality standards (NAAQS) and other recent finalized rules with significant nitrogen oxide (NOx) reductions.
 - o Finalize a federal plan for states that do not submit a Clean Power Plan (CPP) state plan for existing sources.
 - o Finalize federal plan to implement the Emission Guidelines for SSIs.
 - o Finalize federal plan to address interstate transport for the 2008 ozone NAAQS.
 - o Finalize implementation rule for the 2012 fine particulate matter (PM_{2.5}) NAAQS.
 - o Begin implementation of Tier 3 new vehicle emission standards and lowering of the sulfur content in gasoline.
- EPA committed to with states to develop State Implementation Plan (SIP) revisions to reduce NOx emissions:
 - o Review CPP state plans for existing power plants.
 - Oversee state implementation of CAA 129 rules (Commercial/Industrial Solid Waste Incinerators (CISWI), SSI, Hospital/Medical/Infectious Waste Incinerators (HMIWI)). Once fully implemented, these rules will reduce emissions of NOx, as well as air toxics.
 - o Work with states to designate nonattainment areas for the 2015 ozone NAAQS.
 - Work with states and review SIPs that address interstate transport for the 2008 ozone NAAOS.
 - o Work with states and review SIPs that address the 2012 PM_{2.5} NAAQS.

Potential Federal Actions and Assistance

- EPA and the Federal Facilities Workgroup should continue efforts to improve the completeness and efficiency of reporting BMPs on federal land, including an assessment of whether BayFAST could be modified to facilitate reporting.
- EPA should use the CBP partnership's Phase 6 Watershed Model to evaluate federal agencies' progress toward facility 2017 targets.
- EPA and the Federal Facilities Workgroup should continue progress on a complete a revision of the federal data layer for use in the CBP Phase 6 Watershed Model.

Appendix A

Federal Agency Progress Reporting to the Bay Jurisdictions in 2014 and 2015

Key:

- Reported or "none to report" sent
- * Submitted by Oct. 1 deadline or granted extension date
 - No known federal facilities in this jurisdiction
 - BMP inventory underway
 - No information provided/available

Agency	DC		MD		NY		PA		VA		WV	
Year	'14	'15	' 14	'15	'14	'15	' 14	'15	'14	'15	'14	' 15
AOC												
DHS												
DOC -												
NOAA												
DOI - USGS												
DOI - FWS			*				*		*		*	
DOI - NPS	*		*				*		*		*	
DoD (DLA,										*		
etc.)												
DoD-Air				*						*		
Force												
DoD - Army	*		*			*	*		*			
DoD - ACoE												
DoD -	*								*	*		
Marines												
DoD - Uvy	*		*						*			
EPA			*									
GSA												
USA									*			
Smithsonian	*		*						*			
USDA			*									
USDA - FS												

Appendix B

Federal Programmatic Milestones and BMP 2016-2017 Milestones Provided to Jurisdiction



Submitted

No known federal facilities in this jurisdiction

In progress

Not submitted or no "none to report sent"

	Programmatic Milestones	D.C.	100	NIX7		¥7.4	**/*/
Agency	Submitted	DC	MD	NY	PA	VA	WV
AOC							
DHS							
DOC -	Yes						
NOAA							
DOI - USGS	Yes						
DOI - FWS	Yes						
DOI-NPS	Yes						
DoD (DLA,	Yes						
etc.)	168						
DoD-Air	Yes						
Force	1 68						
DoD - Army	Yes						
DoD - ACoE							
DoD -	Vac						
Marines	Yes						
DoD - Uvy	Yes						
EPA	Yes						
GSA	Yes						
USA	Yes						
Smithsonian							
USDA	Yes						
USDA - FS							

Appendix CNumber of Federal Facilities by Agency and State Receiving Nitrogen, Phosphorus and Sediment Reduction Targets

Agency	DC	MD	NY	PA	VA	WV
AOC	3					
CIA					1	
DHS		6			2	
DOC - NOAA					1	
DOI - BLM		1			1	
DOI - FWS		10		1	13	3
DOI-NPS	112	30		16	84	3
DoD (DLA, etc.)		1		2		
DoD-Air		4			3	
Force						
DoD - Army	3	61	2	20	20	2
DoD - ACoE	2		4	6		
DoD - Marines	1				3	
DoD - Uvy	6	19		1	21	1
DOV	2	3				
General Federal		22				
GSA	112	27	1	7	15	3
Misc	6	3		2	9	1
USA		2				
Smithsonian	2	2			1	
USDA	1	2	1			
USDA - FS					94	7
USPS	1					
Total	251	195	8	55	268	20