

EPA EVALUATION OF FEDERAL AGENCY 2018-2019 and 2020-2021 MILESTONES

Executive Summary

The seven jurisdictions (Delaware, the District of Columbia, Maryland, New York, Pennsylvania, Virginia, and West Virginia) in the Chesapeake Bay Program (CBP) partnership agreed to develop and implement a framework for holding each partner accountable for reducing nitrogen, phosphorus, and sediment loads to meet water quality standards in the Chesapeake Bay and its tidal tributaries. The CBP partnership established the goal to have all practices in place by 2025 that were necessary to achieve applicable water quality standards in the tidal Bay. Part of the U.S. Environmental Protection Agency's (EPA's) role in the partnership's accountability framework is to evaluate and report each jurisdiction's progress toward meeting this goal every two years.

In that role, EPA has evaluated federal agency progress toward attaining the goal of having practices in place by 2025. To the extent possible, this evaluation includes an assessment of progress toward meeting local federal planning goals and providing federal programmatic support for the 2018-2019 milestone period. EPA also evaluated the sector-specific programmatic and numeric commitments for the 2020-2021 milestone period.

In reviewing federal agency progress for the 2018-2019 milestones and the 2020-2021 milestones, EPA found that federal agencies are performing well at the programmatic level but most of them have been ineffective in engaging with the CBP partnership to report planned and completed implementation of management practices at federal facilities.

Some notable strengths identified in this evaluation of the 2018-2019 milestones and the 2020-2021 milestones include:

- United States Department of Defense (DoD) and United States Fish and Wildlife Service (USFWS), National Aeronautics and Space Administration's (NASA) Langley Research Center, National Park Service (NPS) and United States Forest Service (USFS) submitted information on best management practices (BMP) implementation in their 2020-2021 milestones.
 - DoD submitted Chesapeake Assessment Scenario Tool (CAST) scenarios for Pennsylvania (PA), Maryland (MD), Virginia (VA) and the District of Columbia (DC).
 - USFWS reported planned implementation of a BMP at a facility in West Virginia (WV).
 - NASA Langley Research Center submitted a 2020-2021 milestone scenario in the CAST tool and reported 2019 BMP implementation information (progress data) to Virginia. This facility has a dedicated Total Maximum Daily Load (TMDL) Action Plan for TMDL compliance.
 - NPS submitted narratives and CAST scenarios to DC, MD, PA, and VA to support preparation of the Phase III Watershed Implementation Plans (WIPs).
 - USFS submitted a plan to timber harvest 745 acres each year with BMPs (1,490 acres total) in Virginia. USFS will monitor at least one timber sale/year for water quality BMPs utilizing the USFS National BMP Monitoring protocol for Veg Management (protocol A). USFS will develop CAST scenarios to quantify the benefit of these BMPs. USFS will implement 2 culvert/road improvements projects per year (4 total) and road

decommissioning of approximately 4 miles (equivalent to approximately 6 acres restored).

- EPA reviewed jurisdiction agricultural permits and United States Department of Agriculture (USDA) continued making progress in agricultural assistance programs in priority watersheds. EPA and USDA will coordinate assistance programs to effectively support the jurisdictions' Phase III WIP goals.
- EPA finalized the DC municipal separate storm sewer system (MS4) permit.
- United States Geological Survey (USGS) and EPA effectively provided and will continue to provide updates of nutrient and sediment load trends in the Bay watershed to help assess progress toward implementing the Chesapeake Bay Total Maximum Daily Load (Bay TMDL).
- EPA provided financial and technical support for the development of the Conowingo WIP, will evaluate the WIP for the partnership and will continue to provide financial and technical support for the implementation of the WIP.
- Federal agencies will lead the next phase of evaluating the risks climate change presents to achieving water quality standards and developing methods for addressing such risk in WIP implementation.

Some key areas that EPA recommends strengthening in this evaluation of the federal agency 2018-2019 milestones and the 2020-2021 milestones include:

- Most federal agencies with land in the watershed did not submit 2019 progress data or 2020-2021 milestones for pollutant reduction actions at federal facilities. All agencies should work with the CBP partnership's Federal Facilities Workgroup (FFWG) and its contractor resources to fulfill the federal commitment to lead by example and provide data to verify whether they are meeting local federal planning goals.
- Developing plans to implement BMPs, including stormwater BMPs, to meet the federal local planning goals and local stormwater permit requirements.
- Continuing to use monitoring networks to improve targeting of WIP strategies, particularly agricultural assistance programs, in priority watersheds.

Progress on 2018-2019 Federal Numeric Milestones

EPA numeric milestone for the Bay TMDL progress¹ was partially achieved: The CBP partnership set a goal of achieving 70% of the necessary nitrogen, phosphorus and sediment reductions by 2019. The CBP partnership achieved this goal for phosphorus and sediment. The CBP partnership only achieved 63% of the necessary nitrogen reductions.

EPA numeric milestone for air reductions was achieved: Using the new 2017 Air Model scenarios developed for the 2017 Midpoint Assessment, EPA's portion of air deposition load reduction to tidal surface waters was reduced by 0.30 million pounds of nitrogen over the 2018-2019 period based on the Phase 6.0 Watershed Model. This is 78 percent of the required load

¹ Each year, jurisdictions in the CBP partnership report on the BMPs installed, tracked and verified and the pollutant load reductions from wastewater treatment plants. Using the Chesapeake Assessment Scenario Tool, this information (or "annual progress runs") provides an estimate of how much nitrogen, phosphorus and sediment has been reduced.

reductions from 2010 to achieve the 15.7-million-pound air deposition load allocation to tidal waters by 2025 (2010 = 19.4-million-pound load of atmospheric deposition to the tidal Bay; 2019 = 16.5-million-pound load of atmospheric deposition load to the tidal Bay).

USDA Natural Resources Conservation Services (NRCS) numeric milestone for conservation practices was achieved: Fiscal Year (FY) 2018 saw 151,088 new acres, and FY2019 saw 136,307 new acres. That brings the total new acres toward the 4,000,000-acre goal under the Chesapeake Bay Executive Order 13508 to 2,308,181 (58%) since FY2010.

Load Reduction Review

Local federal planning goals for federal facility pollutant reductions were established in most jurisdictions during Phase III WIP development. Those goals will be the basis for evaluating agency progress at federal facilities in the future.

Based on its 2020-2021 milestone submittal, USFWS anticipates planting five additional acres of trees at the National Conservation Training Center in WV.

Federal Facilities Goals and 2020-2021 Targets

- DoD, USFWS, NASA Langley, NPS and the USFS submitted 2020-2021 BMP milestones.
- DoD submitted CAST scenarios for PA, MD, VA and DC. USFWS reported planned implementation of a BMP at a facility in WV.
- USFS submitted numeric milestones including:
 - Timber harvest 745 acres each year with BMPs (1,490 acres total) in Virginia.
 - Monitor at least one timber sale/year for water quality BMPs utilizing the USFS National BMP Monitoring protocol for Veg Management (protocol A). The monitoring protocol assesses post-harvest BMP implementation and effectiveness. (If the site is not found to be meeting standards, then follow-up corrective actions are required.)
 - Develop CAST scenarios to quantify the benefit of these BMPs.
 - Implement 2 culvert/road improvements projects per year (4 total).
 - Implement Road Decommissioning of approximately 4 miles (equivalent to approximately 6 acres restored).
- Other federal agencies with land in the watershed that did not submit 2020-2021 BMP milestones include:

DHS - Department of Homeland Security

DOC - Department of Commerce

NOAA - National Oceanographic and Atmospheric Administration

DOI - Department of Interior

USGS - US Geological Survey

ACoE - Army Corp of Engineers

GSA - General Services Administration

NASA (partial submission) - National Aeronautics and Space Administration

USDA - US Department of Agriculture

Agriculture

2018-2019 Milestone Achievements

- EPA provided assistance and oversight to MD, PA and Delaware (DE) on the development and issuance/reissuance of general Concentrated Animal Feeding Operations (CAFO) permits.
 - The Maryland general permit, once reissued by Maryland Department of the Environmental (MDE), will be available to over 570 CAFOs.
 - EPA reviewed PA's National Pollutant Discharge Elimination System (NPDES) General Permit for CAFOs (PAG-12), which was reissued in April 2018, representing more than 50% of NPDES CAFO-permitted facilities in PA.
 - EPA reviewed the Delaware Department of Natural Resources and Environmental Quality (DNREC) NPDES CAFO general permit for poultry operations with land application of manure (GP2), which was issued in April 2019. The DE permit will provide permit coverage for 89 facilities.
- USDA NRCS and EPA coordinated respective innovation grant programs in FY2018 and FY2019 to ensure best use of federal funding to support state WIP commitments to reduce agricultural nutrient and sediment loadings and to address key challenges facing the agricultural community. Grant programs are EPA's Innovative Nutrient and Sediment Reduction Program administered by National Fish and Wildlife Federation (NFWF) and NRCS's Conservation Innovation Grant Program.
- EPA facilitated meetings, as requested, with jurisdictions' environmental and agricultural agencies to explore how the Clean Water State Revolving Fund (CWSRF) can be used to reduce nutrient and sediment loads from agriculture and rural communities. EPA held CWSRF All-States meetings in April 2018 and May 2019. EPA facilitated meetings at Shenandoah Valley Regional Agricultural Networking Forum, Pennsylvania Ag Progress Days and with Shenandoah Funders Team, Lancaster County Clean Water Partners, Alliance for the Chesapeake Bay, and Pennsylvania Infrastructure Investment Authority (PENNVEST).
- USDA NRCS evaluated priority watersheds for NRCS assistance and, to the extent possible, incorporated Chesapeake Bay Program priority watersheds and BMPs into its conservation support programs. USDA NRCS integrated findings from the Conservation Effects Assessment Project (CEAP) Chesapeake cropland studies about the effectiveness of nutrient management on Chesapeake cropland and opportunities to fine-tune nutrient management to achieve the greatest water quality benefits.
- EPA continued to fund United States Geological Survey (USGS) to implement the USGS-USDA 1619 data sharing agreement to provide aggregated USDA conservation data to the states. EPA, USDA and USGS worked together, in cooperation with the states, to improve data management methods to address state reporting issues, while complying with the data privacy provisions in the Farm Bill.

2018-2019 Milestones Missed

None.

2020-2021 Milestone Strengths

- EPA will provide assistance and oversight to DE to develop and issue the DNREC NPDES General Permit for CAFOs for Non-Poultry Animal Feeding Operations that land-apply manure as fertilizer (GP3), to grant permit coverages under the DNREC NPDES General Permit for CAFOs for Poultry Animal Feeding Operations that do not land-apply manure as

fertilizer (GP1) and to start to grant permit coverages under the DNREC NPDES General Permit for CAFOs for Poultry Animal Feeding Operations that land-apply manure as fertilizer (GP2).

- EPA, USDA, and USGS will conduct a pilot project in PA to develop a data management methodology to more comprehensively account for agricultural conservation practices implemented through state, federal and voluntary efforts.
- EPA and USGS will update the CBP partnership's Priority Agricultural Watersheds Map used to target EPA grants such as the Chesapeake Bay grants and EPA's Innovative Nutrient and Sediment Reduction Program and Small Watershed Grants programs.
- USDA and EPA will coordinate respective grant programs in FY2020 and FY2021 to ensure best use of federal funding to support the jurisdictions' Phase III WIP commitments to reduce agricultural nutrient and sediment loadings and to address key challenges facing the agricultural community. Grant programs are EPA's Innovative Nutrient and Sediment Reduction Program administered by NFWF and NRCS's Conservation Innovation Grant Program.
- DoD will investigate the DoD Agricultural Out-lease program for opportunities to support jurisdictions' Phase III WIPs and the 2025 WIP Outcome.
- USDA NRCS will continue to support voluntary actions by farmers and landowners to improve water quality and other resources by providing technical assistance through its Conservation Technical Assistance (CTA) program; and technical and financial assistance from the Environmental Quality Incentives Program (EQIP), Regional Conservation Partnership Program (RCPP), Agricultural Management Assistance (AMA) Program, Agricultural Conservation Easement Program (ACEP), and Conservation Stewardship Program (CSP).
- USDA NRCS will incorporate changes in Farm Bill Conservation Programs resulting from the new 2018 Farm Bill into ongoing efforts to improve water quality in the Chesapeake Bay. USDA NRCS will inform Chesapeake Bay Program partners and the general public about farm bill conservation program opportunities.
- USFS will perform an annual review of grazing permits and assess opportunities to restore grazing allotments along the South Fork Shenandoah River.

Key Areas to Address in the 2020-2021 Milestone Period and beyond

- EPA and USDA should continue to coordinate grant programs with an emphasis on innovative agricultural practices and to directly support the agriculture sector strategies in the jurisdictions' Phase III WIPs.
- USDA NRCS should continue to support voluntary actions by farmers and landowners to improve water quality and other resources by providing technical and financial assistance through its incentive, easement, stewardship and partnership-based programs.

Urban/Suburban Stormwater

2018-2019 Milestone Achievements

- EPA:
 - Finalized the DC MS4 permit, effective June 22, 2018.
 - Conducted an update of its 2012 stormwater assessments for DE, MD and WV.
 - Reviewed:

- Maryland and Virginia's Phase II MS4 General Permits and Delaware's Tier 1 and Tier 2 MS4 General Permits
- Pennsylvania, Delaware, Virginia, West Virginia Construction General Permits
- Pennsylvania Turnpike Commission Phase II MS4 Individual Permit
- Maryland Industrial General Permit Modification; Delaware's Industrial General Permit
- Six Maryland Phase I MS4 Modifications
- Conducted a Department of Transportation (DOT) MS4 Forum in MD in May 2018 and DC MS4 permittee training in October 2019.
- Developed Permit Quality Review reports for VA, MD, DE.
- At GSA facilities in the watershed, all stormwater requirements have been programmed into the facility maintenance system. Maintenance requirements that fall under the purview of the region's landscape maintenance contractors have been activated. Remaining requirements are being activated for the region's Operation and Maintenance (O&M) contractors as new contract awards are made.

2018-2019 Milestones Missed

No meetings were held with Federal Agencies as part of the 2013 Federal Agency Stormwater Management Memorandum of Understanding among EPA, DoD, National Park Service (NPS) and GSA.

2020-2021 Milestone Strengths

- EPA will review certain MS4 plans for compliance with permit requirements and will conduct MS4 permittee and state inspector trainings in coordination with jurisdictions.
- EPA will conduct oversight, review and comment on draft state municipal, construction, and industrial stormwater permits to ensure consistency with the Bay TMDL and the jurisdictions' WIPs and to ensure permits contain enforceable performance measures.
- USGS will share results of the effects of stormwater practices on water-quality response. USGS has been working with Fairfax County, VA, and Montgomery County, MD to monitor water quality and stream conditions as stormwater practices are implemented in these areas.

Key Areas to Address in the 2020-2021 Milestone Period and beyond

Federal agencies should develop plans to implement BMPs, including stormwater BMPs, to meet the federal local planning goals and local stormwater permit requirements.

Wastewater Treatment Plants and Onsite Systems

2018-2019 Milestone Achievements

EPA finalized the Blue Plains NPDES permit, effective August 26, 2018.

2018-2019 Milestones Missed

None.

2020-2021 Milestone Strengths

- EPA has committed to assist states, as requested, with nutrient optimization and compliance assistance.

- EPA will track significant NPDES permits reviewed and objections.

Key Areas to Address in the 2020-2021 Milestone Period and beyond

None.

Programmatic Support to Bay TMDL/ WIPs

2018-2019 Milestone Achievements

- EPA
 - Provided final Phase III WIP expectations to the jurisdictions and federal agencies.
 - Facilitated CBP partnership release of final Phase III WIP Planning Targets to the jurisdictions.
 - Evaluated the jurisdictions' draft and final Phase III WIPs and Federal agencies' contributions to the WIPs.
 - Provided financial support to jurisdictions by maintaining funding, as authorized, through EPA's assistance programs including Clean Water Act (CWA) Section 319, SRF, Chesapeake Bay Implementation Grants (CBIG) and Chesapeake Bay Regulatory and Accountability Program (CBRAP). In 2018 and 2019, EPA distributed approximately \$48.4 million in CBIG and CBRAP grant funds to the Bay jurisdictions, including an allocation of \$10 million in local government funding to state and local governments in 2018 and 2019.
 - Provided financial support to localities and other entities through the Innovative Nutrient and Sediment Reduction Grants and the Small Watershed Grants. In 2018 and 2019, each program received approximately \$24.5 million, which included appropriated funds and additional funds from EPA.
 - Provided Bay jurisdictions and federal agencies with an interim evaluation of their 2016-2017 milestone progress.
- DoD submitted both narrative and numeric data inputs that supported development of Phase III WIPs by PA, VA, MD, DC, and WV. This included developing a template for other federal agencies to use in the development of their Phase III WIP input. DoD submitted CAST scenarios for BMP implementation through 2025 to PA, MD, DC, and VA.
- DoD
 - Funded the development of BMP crediting reports that demonstrated the number of BMPs credited in the model and credited to DoD. DoD also funded two consecutive years of progress evaluations and extended the second year to develop an implementation plan.
 - Developed 2018 and 2025 CAST scenarios with data provided by installations. DoD identified the remaining gap to meet DoD 2025 goals and developed a hypothetical fill-gap approach which included both runoff reduction BMPs, street sweeping, and natural resources projects with water quality co-benefits.
 - Disseminated jurisdiction information through its Chesapeake Bay Action Team and used installation data calls to provide data spreadsheet templates to gather and report Phase III WIP information to the jurisdictions.
 - Invested \$28.1M in water quality BMPs representing over 50% of DoD's 2018-2019 two-year goal (\$45M) for BMP implementation. In FY2019, DoD invested \$29.5M in water quality BMPs. The total for the \$45M 2018-2019 DoD milestone goal was

exceeded by 28% (actual two-year total was \$57.6M). Based on EO13508 criteria, \$104.5M was spent by DoD on projects that contributed to Clean Water in FY2018 and \$42.3M was spent on projects that contributed to Clean Water during FY2019.

- GSA
 - Completed four stormwater management studies. Project funding requests were submitted into the Strategic Asset Inventory Planning (SAIP) in FY2019 for prioritization and approval. Two projects are moving forward in FY2020, one is on hold pending additional input from MDE.
 - Visited all the region's facility BMPs. Maintenance and repair needs are being defined in several locations with more involved issues. Maintenance is being handled on a facility by facility basis. GSA is determining if regional contracts would be compatible with the facility budgeting process.
- USGS completed a process to update the CBP high-resolution land cover data.
- USGS, EPA and academic partners communicated findings on trends in the watershed and tidal waters to support the Mid-Point Assessment. The Science Technical Assessment and Reporting (STAR) Integrated Trends and Analysis Team (ITAT) provided key results to the CBP partnership and jurisdictions, which used the results to inform development of WIPs.
- Federal agencies provided a total of \$531.8 million in federal funds during FY2018 and \$488.2 million in FY2019. EPA provided \$218 million in FY 2018 and \$193 million in FY2019. USDA provided \$153 million in FY2018 and \$174 million in FY2019. DOC provided \$16.0 million in FY2018 and \$17.3 million in FY2019. DOI provided \$35 million in FY2018 and \$35 million in FY2019.

2018-2019 Milestones Missed

Most federal agencies did not report BMP implementation to the Bay jurisdictions annually with copy to EPA.

2020-2021 Milestone Strengths

- EPA will:
 - Assess progress made to implement the 2018-2019 two-year milestones to ensure jurisdictions remain on pace to have 100% practices in place by 2025 to achieve the CBP partnership's restoration goal.
 - Complete technical review of the CBP analysis of future climate risk to the living resource-based Chesapeake water quality standards.
 - Complete policy review of the CBP analysis of future climate change risk to the living resource-based Chesapeake water quality standards. Starting with the 2022-2023 milestones, EPA will assist the CBP partnership to determine how climate change will impact the BMPs included in the Phase III WIPs and address these vulnerabilities in the two-year milestones.
 - Continue to provide financial support for the development of the Conowingo WIP and Financing Strategy and evaluate the WIP. EPA will also participate on and provide technical support to the Conowingo WIP Steering Committee support development of the Conowingo WIP Financing Strategy.
- EPA and the Chesapeake Conservancy will develop BMP planning, prioritization, tracking and reporting tools in coordination with jurisdictions and their local partners to provide

access to data that can help with BMP siting and streamline tracking and reporting, especially from local partners.

- EPA and USGS will continue to work with Chesapeake Commons, Chesapeake Conservancy and jurisdictions to develop BMP siting, tracking and reporting tools, such as *Field Doc*, that incorporate available high-resolution data for use in WIP implementation.
- DoD will:
 - Assess feasibility and possibly develop four to five installation local-scale status reports that would track BMP implementation progress toward the final 2025 DoD Phase III BMP scenarios and 2025 DoD Federal Planning Goals.
 - Work with installation staff to pilot the identification and documentation of Integrated Natural Resources Management Plan projects with a water quality co-benefit.
- USFS will:
 - Work with USGS to produce updated shapefile of forest boundaries and land use (e.g., in FY2020 the GWJ NF acquired Grace Furnace (4,664.5 acres) and The Knob (91.23 acres).
 - Develop Facilities Master Plan by assessing impervious surfaces and maintenance/operational changes.

Key Areas for federal agencies to Address in the 2020-2021 Milestone Period and beyond

- Reaffirm their commitment to participate in the CBP partnership's Federal Facilities Workgroup and fulfill the partnership-agreed goal of reducing federal facilities' pollutants on par with other local landowners.
- Provide staff and time to complete the BMP inventories and future BMP implementation plans.

Other (Trading and Offsets, Monitoring and Science Support, Atmospheric Reductions) 2018-2019 Milestone Achievements

- EPA applied and tracked new community multiscale Air Quality Model (CMAQ) air deposition modeling for the Chesapeake Bay watershed incorporating the most recent finalized rules with significant nitrogen oxides (NO_x) reductions in the Phase III WIPs.
- EPA and USGS
 - Coordinated with and provided comments to VA regarding the review and development of revised James River Chlorophyll-a criteria and associated assessment protocol.
 - Coordinated with the Chesapeake Monitoring Cooperative and their creation of the Chesapeake Data Explorer. Approximately 100,000 volunteer and non-traditional (i.e., non-EPA grant supported) monitoring sourced data points are now available as supplemental information to support decision-making needs.
 - Created the Data Dashboard using information gathered in 2016-2017 on patterns in water quality standards and criteria attainment. It includes trends on the effects of nutrient sources, land-use change, and BMPs in the watershed. For the major source sectors (agricultural, urban, and atmospheric deposition), the team developed an on-line data visualization tool to aid jurisdictions in understanding trend results for both the watershed and tidal waters at the segment level.
- USGS provided updates of nutrient and sediment load trends in the Bay watershed to help assess progress toward implementing the Bay TMDL. Updates of loads at the River-Input

Monitoring stations are provided annually with results from additional stations in the non-tidal network provided on an ongoing basis and planned for every two years.

- USGS, EPA, and academic partners published
 - New approaches for quantifying and explaining water- quality trends in tidal waters. See Murphy, R.R., Perry E., Harcum J., Keisman J. A Generalized Additive Model approach to evaluating water quality: Chesapeake Bay case study. *Environmental Modelling & Software* 118 (2019): 1-13.
 - Integrated findings between the watershed and tidal system by conducting a Scientific Technical Advisory Committee (STAC) workshop on “Integrating Recent Findings to Explain Water Quality Change: Support for the Mid-Point Assessment and Beyond” and subsequent recommendations. Keisman, J., J. Blomquist, J.K. Boehlke, J. Davis-Martin, W. Dennison, C. Friedrichs, R. Murphy, S. Phillips, J. Testa, E. Trentacoste, and D. Weller. (2018). [*Integrating Recent Findings to Explain Water-Quality Change: Support for the Mid-Point Assessment and Beyond*](#)

2018-2019 Milestones Missed

- EPA did not develop a federal plan to address interstate transport for the 2015 ozone National Ambient Air Quality Standards (NAAQS). States are submitting individual state implementation plans (SIPs) to address transport for the 2015 ozone NAAQS.
- The protocol for setting federal facility targets was not completed.

2020-2021 Milestone Strengths

- EPA
 - Conduct assessments of the jurisdictions’ trading and offsets programs and will support Bay jurisdictions as they develop trading and/or offset programs.
 - Review state permits which may include rules that limit emissions of NO_x.
 - Issue the final Affordable Clean Energy Rule (ACE). In 2030, the ACE rule is projected to reduce NO_x emissions nationwide by 7,100 tons.
 - Provide over \$5 million in grant funding to the jurisdictions for tidal and nontidal water quality monitoring, including submerged aquatic vegetation.
- EPA and USGS
 - Update the Chesapeake Bay Watershed Data Dashboard with the most recent monitoring trends, modeled progress, and BMP implementation data.
 - Assess current decision-support tools developed and used by the CBP partnership and develop path forward for integrating new information on water quality and other outcomes.
 - Working with academic universities, compute total loads to the Bay to help understand changes in tidal water-quality conditions. EPA will fund the CBP monitoring and modeling teams which will combine information from the River Input Monitoring (RIM) stations with loadings from unmonitored areas to estimate annual loads for nitrogen, phosphorus and sediment.
- USDA, EPA and DOT will work with other Federal agencies to build capacity that will support an efficient and robust trading market.
- USGS will collaborate with the Bay jurisdictions to continue monitoring of nutrient and suspended-sediment conditions across the full range of hydrologic conditions at each of the

stations in the CBP nontidal network and the associated river-input stations. USGS will work through CBP Integrated Monitoring Networks work group to coordinate

- USGS and NOAA will provide technical leadership to complete the Chesapeake Bay mainstem vertical profile hypoxia monitoring pilot and work with the CBP partnership to explore longer term implementation.

Potential Federal Actions and Assistance

- As noted in its Phase III WIP evaluations, EPA remains prepared to assist each of the seven watershed jurisdictions in implementing the 2020-2021 milestones. EPA will work with each jurisdiction to develop specific oversight and assistance activities to provide prioritized support for implementation efforts, including funding, technical assistance and analysis, training, and regulatory reviews.
- EPA will support the federal facility community by establishing contract services to conduct analysis of federal BMP records, their presence in the Phase 6 model system and to compare federal facility progress to local federal planning goals.