Enhanced Use and Explanation of Monitoring Data for the TMDL Mid-Point Assessment

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Issue. The Chesapeake Bay Program (CBP) will enhance the use of monitoring information as part of the Mid-Point Assessment to assess attainment of water-quality standards in the Bay, water quality responses in the watershed, and relationships to actions being implemented for *Chesapeake Bay Total Maximum Daily Load for Nitrogen, Phosphorus and Sediment* (Bay TMDL). The CBP partners have endorsed (PSC, May 2012) an integrated approach that includes three primary pieces of information to assess progress toward water-quality standards:

- Reporting of water-quality practices.
- Trends of nitrogen, phosphorus and sediment in the watershed.
- Attainment of dissolved oxygen, chlorophyll-a, and water clarity/SAV standards.

Integrated Approach to Assess Progress toward Water-Quality Standards. The integrated approach relies on information and enhanced analysis of BMP implementation data and monitoring results from the Bay and its watershed. The following priority activities will be coordinated through the CBP Scientific, Technical Analysis and Reporting (STAR) team and the WQGIT to help to assess and communicate progress for the Mid-Point Assessment:

- *Using BMP information being reported for progress toward the Bay TMDL*. The CBP is working to enhanced tracking and verification of BMP implementation. The CBP Principals' Staff Committee has approved an initiative to enhance verification of BMP implementation that will increase the accuracy of annual progress reports that are used to track 2-year milestones. The same BMP information will be used to help explain observed WQ trends.
- *Expanding monitoring of nutrients and sediment in the watershed*. The EPA is working with the jurisdictions and USGS (through the STAR NTWG) to add 40 monitoring sites in suburban, urban, and agricultural areas. With the new sites, CBP nontidal water-quality network will have 125 locations where monitoring data can be used to help assess progress in reducing nitrogen, phosphorus and sediment loads. Integration of non-traditional partners into the watershed (and tidal) monitoring network could further expand the data available for analysis and interpretation.
- *Enhancing analysis of trends of nitrogen, phosphorus and sediment in the watershed*. The USGS will continue to provide an annual update of concentration trends in nitrogen, phosphorus and sediment concentrations for two time periods: 1985 to present, and the last 10 years. The USGS has also developed an additional technique to assess change in nutrient and sediment loads and is working with the CBP Office and STAR NTWG on how to best compare these loads with watershed model results and Bay TMDL allocations/targets loads. The initial emphasis will be focused on the nine river-input stations.
- *Using tidal monitoring data to assess attainment of water-quality standards in the Bay and its tidal tributaries*. EPA is working with the partners to develop a combined indicator of progress toward attainment of DO, clarity/SAV and chlorophyll-standards in the tidally-influenced segments of the Bay and tributaries. Work is underway through the Criteria Assessment Protocol Workgroup to develop criteria assessment procedures addressing the full suite of DO criteria.
- *Providing more explanation of water-quality trends.* The CBP STAR team is summarizing information from case studies in the Bay watershed and other national efforts for a "lessons learned" report about the effect of BMP implementation on water-quality improvements (to be released in fall 2012). The USGS will produce reports better explaining nontidal nutrient and sediment trends for the Delmarva (2013) and Potomac (2015) and work with STAR to help explain estuary trends.

Next Steps: STAR will work with the WQGIT to further develop this information to help partners more effectively implement practices to achieve Watershed Implementation Plans (WIPs), assess progress toward the 2-year milestones, evaluate the effectiveness of management actions taken to date, and support the Mid-Point Assessment of the TMDL.