Draft Outcomes and Next Steps
Scientific and Technical Analysis and Reporting (STAR) and Water-Quality Goal Team Topical Meeting: An Integrated Approach for Communicating and Monitoring Progress toward the Chesapeake Bay TMDL
April 13, 2011, 10 am – 3 pm
USGS- Baltimore, MD

Meeting Summary
To support the needs of the CBP Water-Quality Goal Implementation Team (WQGIT) to carry out the TMDL, STAR is working with the WQGIT on developing integrated approaches that use both implementation information and monitoring data from the Bay and its watershed to assess and communicate progress toward the TMDL. The approaches need to consider tracking progress toward the TMDL allocations, 2-year milestones, and Bay water-quality standards and how to clearly communicate the information. The STAR and WQGIT teams had a topical meeting on April 13, 2011 focused on:

- Present existing approaches to use water-quality monitoring data to assess progress toward the TMDL.
- Identify key communication products needed to improve use of monitoring results to assess progress toward the TMDL.
- Identify mechanisms for improving delivery of monitoring results to the Water-Quality Goal Team and other water-quality managers.
- Identify changes needed to analyze monitoring information and next steps for the nontidal and tidal monitoring workgroups to collaborate to address ideas.

Meeting Outcomes
The topical meeting outcomes are divided into four parts summarizing discussions throughout the meeting: 1). Potential products or improvement to existing products that help communicate progress toward the TMDL based on monitoring data, 2). Potential new analyzes for monitoring information, 3). Additional information needed to guide work by STAR and workgroups to develop additional approaches to analyze and communicate monitoring data to support the WQGIT, and 4). Next steps for STAR and WQGIT collaboration.

1). Potential new products or improvement to existing products that help communicate progress toward the TMDL based on monitoring data
General

- Synthesis of current science on thresholds and lag times and their implications for water-quality management.
- Visualization tool for wastewater treatment plants– need a better tool to see the extent of wastewater treatment plant upgrades across the watershed.
- Communication products that tell important management stories about water-quality conditions, such as improvements in small watersheds or implementation of point-sources improvements. It is also important to tie changes in water-quality monitoring data to improvements in living resources both in the tidal and nontidal systems whenever possible.

Tidal

- Integrated reports on TMDL specific to the 92 tidal segments – every year or every other year provide detail on each segment including the % attainment by segment.
- Status and trends assessment synthesized in one spot for the Bay segments.
- An indicator that isn't rated as pass/fail but shows how close monitoring data is to attainment (determining incremental progress).

Nontidal

- Improve non-tidal short-term trend/yield indicator
    - Simplify the map's legend
    - Rate the yield based on categories determined by ecologically relevant numbers instead of being rated relative to the dataset
- Relate monitoring data to an allocation. Work with CBP modeling team to develop target allocations for key CBP watershed network sites.
- Enhance the total load indicator to be geographically explicit for each of the 9 major tributary basins

2). Potential new analyzes for monitoring information

- Climate adjust Bay tidal data, just as non-tidal data is similarly flow-adjusted
- Further analyze monitoring results by hydrologic classes to understand changes in both storm and base flow conditions over time.
- Integrate groundwater data into the analysis of base-flow changes over time to better understand effects on surface-water quality. Consider adding ground-water into our watershed monitoring programs
- Use concentration data from the nontidal network and analyze relation to land use to better tell story of effect of different land use on water quality in the watershed (agricultural vs. urban). Also better utilize and present concentration data from the CBP watershed monitoring network to show changes over time (for stations with less than 5 years of data where statistical techniques cannot be applied).
- Consider how concentration data collected by other partners (that is not part of the CBP monitoring programs) can be used on help assess current conditions and in relation to TMDL allocations.
- Better execute and use case studies on small watersheds: link BMP implementation to environmental response using local examples (link inputs, responses, expectations, and results). Choose key small watersheds as areas to better assess effectiveness of water-quality restoration practices.
- Improve decision-support products to be used for municipalities (modifications of ChesapeakeStat and COAST to delivery information and results)
- Site-specific information for non-tidal monitoring; need more information than up and down arrows – annual loads for a certain watersheds/areas, percent change at each site, concentration information.
- Conduct integrated nontidal-tidal analysis to link watershed's sources to tidal water-quality changes.
    - Need to tell stories that have ability to support local and regional decision making
    - TMAW and NTWG should work together to come up with products that link non-tidal and tidal status and trends in major pollutants

3). Additional considerations to guide work by STAR and workgroups to develop additional approaches to analyze and communicate monitoring data to support the WQGIT

- Better communication between managers and scientists is needed to get important information elevated to the level it needs to be used – especially non-tidal monitoring results to the state decision makers
    - The main target audience for these products is water-quality managers. Need to identify specifically which managers we are trying to reach-federal and state managers on the WQGIT is the starting place.
- Need to integrate monitoring and modeling results and verify the model with the monitoring data
    - "Using watershed models to evaluate if the Bay is coming into attainment raises great concerns. Criteria should be assessed based on monitoring data" (PADEP)
- Need a review of what STAC has already said on the issue of using monitoring data to inform decision support, such as WIPs and the TMDL.
- The general public is another important target audience but that will require additional products and communication approaches. It is important to tie monitoring data to living resources (such as improvements in fisheries) both in the tidal and nontidal systems whenever possible to get public buy- in.

4). Suggested Next Steps for this year for STAR to support the WQGIT

General

- Increase communication between STAR and WQGIT with STAR presenting results and products based on monitoring data regularly in WQGIT meetings.

Joint Activities between the Tidal/Nontidal Workgroups.

- Have TMAW and NTWG work together to summarize results from case studies to improve information on water-quality practices and improvements for different CBP "source sectors" (point sources, agriculture, urban/suburban areas). Summarize significant management implications and "lessons learned" about effectiveness of point and non-point source pollution controls at improving water quality and impacts of lag times.
- TMAW and NTWG work together on tributary-specific stories, relating monitoring data to pollution sources and responses to BMPs both in the watershed and tidal waters. Tie to key living resources if possible (such as SAV and fisheries). Pick a system in which to conduct the analysis—Eastern Shore and Choptank River is suggested.

Nontidal Workgroup

- Work with CBP team to translate allocations into targets for key monitoring stations.
- Improve indicator for short-term trends and yields.
- Conduct enhanced analysis for different flow classes.
- Summarize concentration and trend information by land use.

Tidal Workgroup

- Status and trends assessment synthesized in one spot for the Bay segments.