

Chesapeake Bay Program Partnership's Scientific, Technical Assessment and Reporting (STAR) Team Briefing and Options Paper:

Addressing CBP Partnership's Tidal and Non-tidal Monitoring Network's 2013 Funding Shortfall

CBP Management Board Conference Call, August 8, 2013

Issue: The CBP has a \$944,000 shortfall in 2013 funding for grants to support the Chesapeake Bay Program (CBP) Partnership's tidal and non-tidal water-quality monitoring networks. These networks are critical to assess progress toward water-quality standards and management effectiveness in reducing nutrients and sediment loads in the watershed as Bay Chesapeake Bay TMDL is implemented. The Scientific, Technical Assessment and Reporting (STAR) team has developed options, at the request of the CBP Director, to address the funding shortfall.

MB Decision needed: Partnership decision on the preferred option for addressing the 2013 funding shortfall and input on other sources of 2013/2014 funding to help support the networks in 2013/2014 sampling year.

Objectives of water-quality networks and relation to Bay TMDL

In 2009 the STAC conducted an evaluation of the CBP monitoring networks with input from CBP partners. A key finding was that the CBP networks needed to focus on two primary objectives:

- Assess attainment of water-quality standards in the Bay and its tidal waters.
- Document reductions on nutrient and sediments in the watershed to assess effectiveness of practices being implemented to improve water quality.

In 2010, the EPA issued the Chesapeake Bay TMDL and jurisdictions subsequently developed Watershed Implementation Plans that specify practices that will be put into place to meet the TMDL by 2025. The CBP has adopted an integrated approach to assess the progress toward the water-quality standards and the TMDL. The bullets describe the relationship between the Bay TMDL assessment and monitoring networks:

- *Assess changes and progress toward achieving the jurisdictions' Chesapeake Bay water-quality standards (DO, clarity/SAV, and chlorophyll).* This is done through the CBP tidal monitoring network where samples are collected in all 92 segments of the Bay and its tidal tributary waters. The network is supported by EPA CBP funding with matching funds from MD and VA. Additionally, there is a SAV monitoring network which provides annual surveys to assess acres of SAV. The SAV network is supported by EPA CBP funds, MD and VA state funds, VIMS, and other federal partners.
- *Document improvements in the watershed as practices are implemented for the TMDL. This is accomplished through the CBP non-tidal network.* The CBP Partnership's non-tidal network currently has 126 stations across the entire watershed to monitor changes in nutrients and sediment. The stations are in each of the seven jurisdictions and are supported by a

combination of EPA CBP funding, funding from each state and DC, USGS support of stream gages and matching funds for monitoring, and local government support of selected stream gages.

- *Provide estimates of load reductions associated with practices implemented for the TMDL.* This is done with the CBP Partnership's watershed model and supports the 2-year milestones.

Both water-quality monitoring networks provide key information that ensures accountability and transparency, basic guiding principles for the Baywide TMDL process. Data derived by the networks are used to calibrate the CBP suite of models, prepare annual updates of CBP water-quality indicators, support information for ChesapeakeStat, develop the annual Chesapeake Bay report card (by UMCES), and help understand conditions for fisheries and their habitats. Additional monitoring is also conducted by federal and state agencies and academic partners to assess conditions of fisheries, habitat, and the watershed.

CBP Funding support (and shortfall) for the networks

A detailed summary of the network and their associated funding was provided by Nick DiPasquale on July 3, 2013 in a widely distributed email message. Key points from the message include:

- The CBP greatly increased their funding support for monitoring from 2009 (\$2.366M) to 2012 (\$4.942M), with the majority of this increase supporting expansion of the non-tidal network. The 2012 EPA funding also included \$700K of one-time carry over funds to help support the non-tidal network. The CBP partners (all 6 states, DC, USGS) also supported expansion of the non-tidal network with matching funds during this same time period.
- In 2013, sequestration resulted in 5% cut (about \$200K) and the \$700K one-time funds had ended for a total reduction of 900K. In total, there is a 944K funding shortfall for the 2013 monitoring grants.

The STAR Team notes for the record that a reduction in monitoring at this time goes counter to the information requirements that are being posed by CBP Goal Implementation Teams. Each GIT, particularly the Water Quality Goal Implementation Team, is being faced with questions that require results based on the partnership's monitoring program. We recognize that fiscal realities often necessitate tough decisions with real impacts. The options presented in this document represent careful deliberations within the partnership to achieve the required reductions in both networks to match the available funds in 2013.

Options to address the CBP monitoring funding shortfall

The STAR Team and its associated technical workgroups have interacted with all seven jurisdictions and other monitoring network partners (e.g., USGS, universities, river basin commissions) to develop options to address the 2013 funding shortfall according to the schedule presented and approved by the Management Board:

- May 30th STAR meeting
- June 12th CBP STAC meeting
- June 27th STAR meeting
- July 8th WQGIT conference call
- July 10th Tidal Monitoring and Analysis WG meeting, STAC conference call

- July 11th Management Board meeting
- July 17th Nontidal WG meeting
- July 22th STAR Special Session on Monitoring Budget
- July 31st -August 6th WQGIT review of four options
- August 8th Management Board presentation by STAR for decision on a preferred option
- August 12th Seven watershed jurisdictions and USGS notified of exact EPA FY2013 tidal and non-tidal monitoring network funding grant and interagency agreement funding levels

Given the limited time available, there was not one simple, unbiased, or strategic approach to address the shortfall. Four options were developed by the STAR Team, working through the tidal and non-tidal monitoring workgroups, to address the FY2013 shortfalls. These options are considered **temporary solutions for 2013** and a more strategic assessment of support for the networks needs to be done prior to award of the 2014 monitoring network grants in the spring of 2014. This more strategic assessment will require the partners to clearly understand CBP priorities regarding the monitoring program in relation to other CBP initiatives. The four options are listed below with more details for each option in the tables which follow on pages 5 and 6. A map showing the 18 stations identified for monitoring reductions is included on page 7.

- **Option 1.** Reduction of \$944K that is proportional between the tidal (\$254K) and non-tidal (\$690K) networks. This option resulted in devastating impact to the tidal monitoring network and was not considered further by STAR.
- **Option 2.** Reduction of \$755K (Funding Gap = 189K). Roll back of non-tidal network expansion (\$700 K, loss of 14 sites) and reduction of tidal monitoring cruises and one time benthic analysis (\$55K).
- **Option 3.** Reduction of \$904K (Gap=40K): Option 2 items with additional roll back of non-tidal network (\$805K, 17 sites) and addition reduction of phytoplankton tidal monitoring (\$99K).
- **Option 4.** Reduction of \$934K total cut (Gap = 10K): Option 3 items with MD reducing one more non-tidal station (\$835K). Note: depending on what value is assigned for reduction of an additional non-tidal site (49K USGS), then reduction goal of \$944K is met.

Next Step for 2013 Grants. Final decisions on a program-wide funding distribution meeting the FY13 federal budget is necessary at the August 8th, 2013 Management Board meeting to fulfill grant processing needs to support monitoring across the partnership. EPA will use the MB decisions to establish state, DC, and USGS funding levels that meet the \$3.89M monitoring budget in FY13.

Long-term assessment of sustainability of networks

The CBP partners will work with STAC to consider a more strategic approach to identify the monitoring priorities for the water-quality networks as well as monitoring needs for the new Bay Agreement. The water-quality decisions will need to be completed by late winter, 2014 so the grantees can receive their funding targets for their FY-14 applications by early spring. The full process of the CBP Partnership's monitoring networks review is being considered in three phases:

- Phase I: Short term program adjustment completion in August 2013 is focused on meeting the Federal FY13 funding gap across the partnership.

- Phase II: A 6 month mid-term monitoring program review with CBP-STAC evaluating the program, its business and operations model, with consideration for sustaining the water quality monitoring program meeting CBP priorities through 2025. This will include the additional shortfall of \$163K for SAV monitoring that also is being addressed.
- Phase III. CBP further works with STAC in the long term considering the broader context of monitoring needed to support the new Chesapeake Bay Agreement.

Reduction Option 1		
	<u>Tidal</u>	<u>Nontidal</u>
Amount (Tot=\$944,000) (Gap=\$0)	\$254,000	\$690,000
Action	<ul style="list-style-type: none"> Virginia (\$134K) <ul style="list-style-type: none"> Summer only monitoring Reduce nutrients to a small subset of current efforts Maryland (\$120K) <ul style="list-style-type: none"> Cut 3 winter cruises, Substantial cuts to Benthic and EPC programs Cuts to TMAW analysis Lose staff Lose lab support 	<ul style="list-style-type: none"> 13 station reduction* MD-3, PA-3, VA-2, DC-2, NY-2, WV-1 44% reduction in 2010-12 monitoring expansion support . Target source sectors impacted <ul style="list-style-type: none"> Urban Agriculture <p>* (The list of stations cut TBD by NTW)</p>
Impact	<ul style="list-style-type: none"> Cannot meet commitments for water quality standards Inability to sample full Bay for criteria assessment. Delayed criteria assessments, Barometer and report cards Questionable Lab performance Loss of response monitoring capabilities Requires revised protocols Monitoring program sustainability in question 	<ul style="list-style-type: none"> Loss of long-term trend information at 5 locations with greater than 10 years of history. Loss of trend and load assessment capabilities in key settings needed for TMDL and Mid-point assessment Inability to strengthen WSM for targeted source sectors

Note: Option 1 level of cuts may also result in substantial reductions to tidal benthic monitoring program in MD (100% state funded and used as match for 117e) and also the Ecosystem Process Component program, the analysis arm of Tidal Monitoring and Assessment Workgroup (100% state funded and also used as match). Cuts to Chesapeake Biological Laboratory could also result in loss of staff resulting in longer sample analysis times impacting release times for Bay Barometer, and Water Quality Criteria assessments. In addition, less laboratory staff will impact data quality, potentially reducing technical/public confidence in monitoring results.

Reduction Option 2		
	<u>Tidal</u>	<u>Nontidal</u>
Amount (Tot=\$755,000) (Gap=\$189,000)	\$55,000	\$700,000
Action	<ul style="list-style-type: none"> Virginia (\$27.5K) Maryland (\$27.5K) <ul style="list-style-type: none"> Eliminate January cruise Eliminate nutrients from 2 summer cruises Eliminate planned benthic analysis 	<ul style="list-style-type: none"> 14 station reduction* MD-3, PA-4, VA-2, DC-2, NY-2, WV-1 44% reduction in support for expanded monitoring. Target Source Sectors affected <ul style="list-style-type: none"> Urban Agriculture <p>* (The list of stations cut TBD by NTW)</p>
Impact	<ul style="list-style-type: none"> 2017 mid-point evaluation will not include a reevaluation of benthic IBI-derived reference curves for dissolved oxygen assessment Loss of critical data linking winter production with summer oxygen conditions Reduced ability to the strengthen the Bay water-quality model 	<ul style="list-style-type: none"> Loss of long-term trend information at 5 locations with greater than 10 years of history. Loss of trend and load assessment capabilities in key settings needed for TMDL and Mid-point assessment Inability to strengthen WSM for targeted source sectors

Reduction Option 3		
	<u>Tidal</u>	<u>Nontidal</u>
Amount (Tot=\$904,000) (Gap=\$40,000)	\$99,000	\$805,000
Action	<ul style="list-style-type: none"> • Virginia (\$71K) Maryland (\$28K) • Eliminate January cruise • Eliminate nutrients from 2 summer cruises • Eliminate planned benthic analysis • VA reduces phytoplankton monitoring 	<ul style="list-style-type: none"> • 17 station reduction • MD-3, PA-5, VA-3, DC-2, NY-2, WV-2 • 51% reduction in support for expanded monitoring. • Target Source Sectors affected <ul style="list-style-type: none"> • Urban • Agriculture
Impact	<ul style="list-style-type: none"> • 2017 mid-point evaluation will not include a reevaluation of benthic IBI-derived reference curves for dissolved oxygen assessment • Loss of critical data linking winter production with summer oxygen conditions • Reduced ability to the strengthen the Bay water-quality model • Harmful algal Bloom data unavailable for human health protection 	<ul style="list-style-type: none"> • Loss of long-term trend information at 5 locations with greater than 10 years of history. • Loss of trend and load assessment capabilities in key settings needed for TMDL and Mid-point assessment • Inability to strengthen WSM for targeted source sectors

Reduction Option 4		
	<u>Tidal</u>	<u>Nontidal</u>
Amount (Tot=\$934,000) (Gap=\$10,000)	\$99,000	\$835,000
Action	<ul style="list-style-type: none"> • Virginia (\$71K) Maryland (\$28K) • Eliminate January cruise • Eliminate nutrients from 2 summer cruises • Eliminate planned benthic analysis • VA reduces phytoplankton monitoring 	<ul style="list-style-type: none"> • 18 station reduction • MD-4, PA-5, VA-3, DC-2, NY-2, WV-2 • 53% reduction in support for expanded monitoring. • Target Source Sectors affected <ul style="list-style-type: none"> • Urban • Agriculture
Impact	<ul style="list-style-type: none"> • 2017 mid-point evaluation will not include a reevaluation of benthic IBI-derived reference curves for dissolved oxygen assessment • Loss of critical data linking winter production with summer oxygen conditions • Reduced ability to the strengthen the Bay water-quality model • Harmful algal Bloom data unavailable for human health protection 	<ul style="list-style-type: none"> • Loss of long-term trend information at 6 locations with greater than 10 years of history. • Loss of trend and load assessment capabilities in key settings needed for TMDL and Mid-point assessment • Inability to strengthen WSM for targeted source sectors

Proposed Station Cuts to the Chesapeake Bay Program Partnership's Non-tidal Monitoring Network

Characteristics of management information lost given station cuts:

- 3 urban watersheds in MD and PA, and an urbanizing watershed in VA
- 4 long term monitoring stations in MD and 2 in VA
- 2 key watersheds in NY
- 3 key agricultural watershed in PA, MD, and WV
- a unique reference station in the piedmont of VA
- only station included to characterize mining disturbed lands in WV

