Chesapeake Bay Program Response to STAC recommendations for workshop on Toxic Contaminants of Concern in Agricultural and Urban Settings

Approved by Toxic Contaminant WG July 8, 2020, Approved by WQ GIT July 27, 2020

Dear STAC leadership,

Thank you for the follow-up recommendations for the Toxic Contaminants of Concern in Agricultural and Urban settings (Contaminants of Environmental Concern [CEC] workshop), which included:

- **Gaps in compiling and communicating potential removal efficiencies for contaminants**
  - Continued expansion and compilation of BMP studies
  - Examine known and emerging contaminants
  - Capitalize on possible co-benefits with nutrient and sediment removal
- **BMPs are necessary investment to reduce contaminant loads and improve water quality**
  - Research investment to understand co-benefits or negative impacts
  - Have a closer working relationship between researchers and management community to develop tools

The Chesapeake Bay Program (CBP), led by the Toxic Contaminant Workgroup (TCW), has developed a series of proposed actions to address STAC recommendations. We expect many of these proposed actions will be part of the updated logic and action plan for the Toxic Contaminant Research Outcome. The outcome will be revised by the Management Board in August 2020.

The first 3 proposed CBP actions address the STAC recommendation "**Gaps in compiling and communicating potential removal efficiencies for contaminants".** The proposed actions include:

CBP Action 1: Enhance Interaction with Stakeholders for Contaminant Information

The best opportunities are to interact with stakeholders who are implementing practices to reduce nutrients and sediment, so they can consider actions to also mitigate toxic contaminants. The TCW is will increase interaction with these stakeholders:

- Jurisdictions: The states and the District of Columbia (DC) are carrying out their Phase 3 Watershed Implementation Plans (WIPs) to have practices in place for nutrient and sediment reduction by 2025. They will have opportunities to consider co-benefits to mitigate toxic contaminants.
- Water Quality Goal Implementation Team (GIT) & workgroups: The WQGIT and associated workgroups (Agriculture, Urban Stormwater, Wastewater Treatment) are focused on nutrient and sediment reductions for their respective source sectors. These groups provide opportunities to discuss contaminants that occur in their respective landscape settings and practices that may have the most potential co-benefits for toxic contaminant reduction. Another action would be having more in-depth discussion with these groups on the barriers, limitations, and opportunities for addressing toxic contaminants through co-benefits of nutrient and sediment.
- Local TMDL implementors: States, DC, and local jurisdictions are responsible for multiple TMDLs for several toxic contaminants including PCBs, metals, and mercury. These groups

have expressed an interest in reducing contaminant impacts, including addressing regulatory mandates to make fish safer for people to consume.

CBP Action 2: Take advantage of Phase 3 implementation

The jurisdictions must develop updated lists of nutrient and sediment practices that will be implemented every two years for their WIPs. These 2-year milestones provide opportunities for the TCW to summarize new findings on the co-benefits of toxic contaminant reduction for selected nutrient and sediment BMPs and share them with jurisdictions to consider.

CBP Action 3: Enhance Communication Materials to Inform Decisions

The TCW will interact with stakeholders on the most useful approaches to provide new findings. In addition to presentations of results, the TCW will discuss opportunities to prepare Fact Sheets and other briefing materials to best communicate results to different stakeholder groups. Preparing communication materials will take additional resources, which could be supported through annual GIT funding proposals.

The next two actions are focused in the STAC recommendation to "**BMPs are necessary investment to reduce contaminant loads and improve water quality",** and supporting items:

- Research investment to understand co-benefits or negative impacts
- Have a closer working relationship between researches and management community to develop tools

CBP Action 4: Compile results and expand BMP studies of contaminant mitigation and relation to nutrients and sediment reductions.

Studies of the effectiveness of BMPs designed for nutrient and sediment reduction to mitigate contaminants are currently limited, particularly within the Chesapeake Bay watershed (CBW). However, expanding information about fate of toxic contaminants in BMPs is critical to understand within the current CBP framework of management actions; therefore, several approaches will be emphasized:

- TCW partners are currently conducting targeted studies of selected contaminants, such as PCBs, to document reduction in existing BMPs (e.g., MDE wet pond study), enhancing media to promote reduction in BMPs (e.g., UMCP bioretention media study), and using innovative methods to immobilize and biodegrade PCBs in streams (e.g., UMBC SediMite pilot tests). Sources of PCBs are being investigated as part of TMDL implementation plans by most Phase I MS4 jurisdictions in Maryland and these studies will help inform selection of most appropriate BMPs for PCB reduction. Results of these studies could have relevant results for other Bay states. The TCW partners will explore opportunities to expand these efforts with stakeholders and science partners, but additional resources will be required. TCW partners will also track advances in the understanding of toxic contaminant fate in BMPs in other watersheds such as the San Francisco estuary and the Great Lakes.
- The TCW has proposed a topic for GIT 2020 funding "Methods to integrate toxic contaminant reduction co-benefits into decision tools" The proposed project will provide approaches for developing removal efficiencies for select urban contaminant BMPs into CAST and other management models. The information will provide the basis for improved decision making by states and local governments on the co-benefits of nutrient and sediment practices to reduce select toxic contaminants, improve habitat conditions for fisheries, and make fish safer to consume by diverse groups in urban areas.

- The TCW has also proposed another GIT funding project to provide Chesapeake specific guidance for track-back studies of PCBs. This guidance would help jurisdictions better identify sources of PCBs so more effective reduction strategies can be developed. The proposal was not selected for 2020 but the TCW may submit again for 2021.
- Finally, the TCW will explore other opportunities, such as the MD Pooled Monitoring Fund, managed by the Chesapeake Bay Trust (CBT), for submitting research ideas on BMP effectiveness. The CBT added BMP effectiveness for PCBs to its list of research questions in the 2020 RFP. Several proposals were received, but due to limited funds, none of them were selected for funding for this year. The research question will remain in the RFP for future years, so we anticipate studies will be funded in the near future."

CBP Action 5: Include selected BMP results into CBP tools

Currently management selection and contaminant reduction tools within CBP do not include evaluation of toxic contaminants so opportunities for decision making on co-benefits are extremely limited. Approaches to overcome these limitations include:

- Populating the Chesapeake Bay Watershed Data Dashboard with selected toxic contaminant monitoring data so stakeholders could better understand the relation between contaminants, nutrients, and sediment. The Dashboard is in beta testing, and currently focused on nutrients and sediment. The TCW will interact with the Dashboard team to discuss and identify opportunities for including selected contaminants, starting in areas with impairments.
- Currently, stakeholders primarily use CAST as a tool for BMP selection and reduction estimates. Attempting to get select toxic contaminant data and associated BMP efficiencies into CBP suite of models, and CAST, is challenging for various reasons. Inclusion of contaminants into the CBP watershed model would require loading rates for different types of land use. Unfortunately, this information does not exist and would be very difficult to develop given the large number of contaminant groups and the site-specific nature of contaminants in different land-use settings. Inclusion of BMP efficiencies into CAST requires information for contaminant reduction for individual BMPs, but this information currently does not exist. The proposed GIT project described under action 4 would develop approaches and information for selected BMPs and contaminants in urban areas that could be considered for CAST and other contaminant management models.

The TCW looks forward to making progress on these proposed actions but is challenged because the majority of water quality efforts in the CBW are focused on nutrient and sediment reduction. There needs to be a more balanced effort to address nutrient/sediment and toxic contaminants if the CBP are to meet goals related to improve water quality in the Bay and local rivers, improve habitat for fisheries, make fish safer to consume, and increase recreation opportunities for the 18 million people in the watershed.

Sincerely,

Scott Phillips, USGS, vice-chair of TCW

Greg Allen, USEPA, chair of TCW