BIENNIAL STRATEGY REVIEW SYSTEM
Chesapeake Bay Program

Narrative Analysis

TOXIC CONTAMINAT RESEARCH OUTCOME: CONTINUALLY INCREASE OUR UNDERSTANDING OF THE IMPACTS AND MITIGATION OPTIONS FOR TOXIC CONTAMINANTS. DEVELOP A RESEARCH AGENDA AND FURTHER CHARACTERIZE THE OCCURRENCE, CONCENTRATIONS, SOURCES AND EFFECTS OF MERCURY, POLYCHLORINATED BIPHENYLS (PCBS) AND OTHER CONTAMINANTS OF EMERGING AND WIDESPREAD CONCERN. IN ADDITION, IDENTIFY WHICH BEST MANAGEMENT PRACTICES MIGHT PROVIDE MULTIPLE BENEFITS OF REDUCING NUTRIENT AND SEDIMENT POLLUTION AS WELL AS TOXIC CONTAMINANTS IN WATERWAYS.

DRAFFT: JUNE 10, 2020

FOR AUGUST MB REVIEW

The narrative analysis summarizes the findings of the logic and action plan and serves as the bridge between the logic and action plan and the quarterly progress meeting presentation. Based on what you learned over the past two years from your successes and challenges, you will describe whether the partnership should make adaptations or change course.

Use your completed pre-quarterly logic and action plan to answer the questions below. After the quarterly progress meeting, your responses to these questions will guide your updates to your logic and action plan. Additional guidance can be found on ChesapeakeDecisions.

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1. **Examine your red/yellow/green analysis of your management actions. What lessons have you learned over the past two years of implementation?**

Summarize what you have learned about what worked and what didn't. For example, have you identified additional factors to consider or filled an information gap?

Generally:

- Informing and providing a venue for briefings and technical discussion largely **green**
- Reporting of results of studies being conducted by others (not direct responsibility of the TCW) or ongoing nature comprise the **green/yellow**
- Inventorying and assessing data in the watershed, compiling new information for modeling tools largely **red**

Specifically:

- Story maps for PCBs and mercury have been produced by the TCW and are effective communication tools and ways to track progress.
- Generally, little progress has been made on tasks for inventorying or assessing data (such as co-occurrence with nutrients) as a workgroup. Currently, the TCW does not have the capacity so we will consider removing references to inventorying (1.1, 3.1 Research AP) and assessing co-occurrence (3.2 Research AP). We may reflect instances where states are doing this independently (for MS4 annual report or otherwise) and could provide updates on an annual basis at a select meeting as an alternate action item.
- 2.3 Research AP: State wildlife agencies do not participate, and the workgroup didn't establish connection with them during the past cycle. With stakeholder interest focus on mainly on fish, we may consider shifting wildlife element to the emerging contaminants management action - Aspects of impacts of contaminants on wildlife.
- 3.3 Research AP: Progress on understanding removal of contaminants in BMPs has come mostly through STAC workshop on urban and agricultural areas. The workshop revealed there and limited studies addressing just selected BMPs. Given the limited studies, it is unlikely there will be new information available over the next two years, especially for non-PCB toxic contaminants. So this item needs to have limited scope over the next two years. Similarly, from Science PP AP, consider combining 4.3.2 (explore qualitative scoring tools into CAST) and 4.3.6 (Estimate data needs to include toxic contaminant reduction associated with the implementation of BMPs for sediment and nutrient reduction under the Chesapeake Bay TMDL). A GIT funding project will be critical for any progress on these items over the next two years.

Commented [PSW1]: The updates to these story maps are not captured anywhere in the action plans. This should be included since there is an expectation that we will keep it current, which requires jurisdictions to provide updated information and work to be done to complete updates.] Consider including in the Research AP MA 1.

2. **Regardless of how successful your short-term progress has been over the past two years, indicate whether we are making progress at a rate that is necessary to achieve the outcome you are working toward. The example graph below illustrates this concept**.

The research outcome currently does not have specific measures of progress. There are three primary items in the outcome to provide a qualitative assessment of progress:

- Continually increase our understanding of the impacts and mitigation options for toxic contaminants.
    - **PROGRESS: Good**, STAC workshop increased our understanding of impacts and options.
- Develop a research agenda and further characterize the occurrence, concentrations, sources and effects of mercury, polychlorinated biphenyls (PCBs) and other contaminants of emerging and widespread concern.
    - **Progress: Fair,** progress has been made on mercury across the watershed and contaminants in local areas, but ability characterize more regional occurrence and concentrations of contaminants has been limited.
- Identify which best management practices might provide multiple benefits of reducing nutrient and sediment pollution as well as toxic contaminants in waterways.
    - **Progress: Fair.** A STAC workshop provided insights of a limited number of BMPs to have co-benefits between nutrient, sediment, and contaminant reductions. However, getting information into CBP decision tools, such as CAST, does not have a clear path forward. Additionally, jurisdictions WIPs don't have much emphasis on addressing co-benefits for contaminant reduction.

Some more specific progress on Achieving Outcome

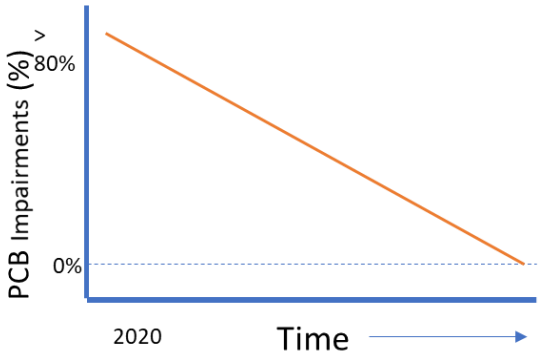
- Jurisdictions are targeting monitoring programs for prioritized contaminants of interest given their known sources, land use etc. More emphasis should to this over the next two year with the jurisdictions having more time to discuss within the TCW.
- Interest and focus in co-benefits allows for reductions in toxic contaminants where impairments overlap with N, P, and sediment reductions. Greatest amount of interest is from urban and WWTP workgroups.
- Expanding research topic related to stormwater BMPs and gray infrastructure improvements expected to help define the removal of contaminants in these practices (also within STAC workshop recommendations). The TCW should continue in next action plan to help quantify expected benefits from previous actions and upcoming actions.
- Implementation of PCB TMDLs is ongoing by different jurisdictions in selected areas of the watershed. Lessons learned from these studies can further shared between jurisdictions to help inform local TMDLs. A similar approach for knowledge transfer should be considered for other contaminants.

Some specific challenges on Achieving Outcome

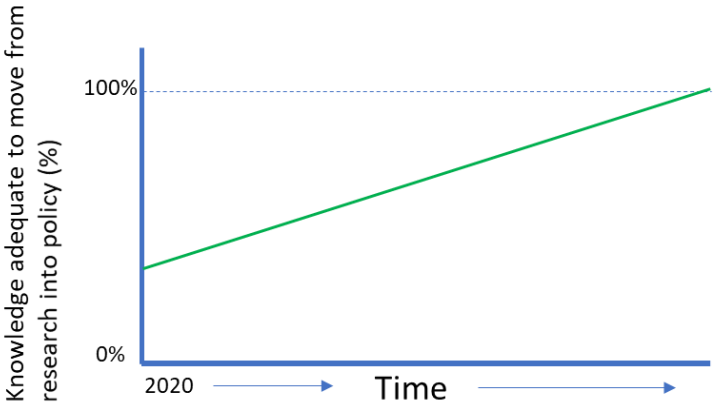
- Lack of watershed wide monitoring for specific toxic contaminants (even PCBs where impairments are fairly widespread) and analytical costs and variability make assessing trends challenging.
- Independent fish tissue collection to assess fish consumption advisories (human health connection to ecosystem) as well as other monitoring efforts makes evaluating the impacts of management actions difficult.

Is our progress adequate? Could communicate using contaminant classes and achieving water-quality standards, or by research knowledge to achieve management action completion (examples below)

- Contaminant classes examples – PCBs (more known), emerging contaminants (less known) - declining impairments with progress on goals. (More straight-forward for known contaminants, but not as straight-forward for emerging contaminants)



- OR evaluate by Management element – For example, MA 1: Supply information to make fish and shellfish safe for human consumption (how to gauge % of information completed to date and what constitutes 100% information gathered??)



3. What scientific, fiscal and policy-related developments will influence your work over the next two years?

This may include information learned at the previous biennial SRS meeting or more specific information about your outcome such as an increase or decrease in funding, new programs that address gaps, and new scientific data or research. Describe how these developments are likely to impact your recommended measure(s) of progress, the factors you believe impact your ability to succeed, and newly created or filled gaps. These changes should be reflected in the first three columns of your revised logic and action plan after your quarterly progress meeting.

Scientific Developments

- PFAS analytical methods advancement and status investigations in various CB watershed states
- PCB passive sampling method EPA approval anticipated – ease of sampling
- Eagle-Smith mercury results, impacts to consider MA 1
- Conclusions of USGS EDC project to provide useful information for path forward
- USGS future (planned) studies with focus on management actions impacts on ecosystem may produce useful information (add specifics)
- STAC Workshop outcome recommendations to be included (expanded upon in AP)
- Others from stakeholders?

Fiscal Developments

- COVID-19 impacts on budgets

Policy Developments

- PFAS water-quality, health-based thresholds likely to be released (will this result in need to elevate PFAS from emerging to contaminant of focus?)
- Other Emerging contaminants (MA 5 in Research AP): After our series of talks many voiced priorities for these issues - PFAS, road salt and HABs were the three that were prioritized most often by the stakeholders, but we haven't tracked or moved to more action-based elements for these. PA is already doing a good bit of work on PFAS due to some known sources, USGS studies to include PFAS and road salt in upcoming work. Consider putting these three forward to think about building out tasks related to them within TCW.
- Other (e.g., mercury delisting, chloride/road salt work?)

4. Based on your response to the questions above, how will your work change over the next two years?

Describe the adaptations that will be necessary to more efficiently achieve your outcome and explain how these changes will lead you to adjust your management strategy or the actions described in column four of your logic and action plan. Changes that the workgroup, GIT or Management Board consider significant should be reflected in your management strategy.

- Watershed-wide assessments even of selected contaminants are not feasible with current TCW resources. More specific targeted assessments in subwatersheds that may have approaches, methods, lessons learned can be communicated and replicated elsewhere may be more manageable.
- Modeling gap – Updates from jurisdictions on regional efforts appropriate, watershed wide not needed/feasible at this time.
- Remove or reduce scope of tasks associated with incorporating toxic contaminants into CAST until more information is gathered on removal in BMPs and gray infrastructure improvements, and approaches and information needed is determined.
- Possible expansion in research regarding BMP effects should help to inform effectiveness, removal efficiencies, etc. during next cycle (STAC recommendations)
- Possible expansion of actions centered around select emerging contaminant(s) – which ones? What actions?
- BMP Effectiveness in agricultural land use: Should AP be expanded to include agricultural land use actions since much of the N, P, and sediment BMPs are in these areas (per WIPs)? Consider the EDC/BMP analysis currently underway and other planned USGS efforts over next years will

also be looking at agricultural areas in combination with management actions and what toxic contaminants might be included (certain pesticides or insecticides for example?). Others?

- Tailor updates and improvements in specific sections of the AP to evolving science for PCBs (from PP AP, moving to Research AP MA 1):
    - 4.1 Refining Sources for PCBs in Environment: Build this description out more to meet questions that remain (e.g., STAC workshop identified data gaps). Guidance document may be out of place here – consider moving into another part of PP AP. Broaden 4.1.2 beyond the UMBC-USGS study to include other projects that are also looking at other sources such as old residential (based on the Voluntary removal GIT project report, for example) or sediment sourcing needs? Additional elements here. Keep regional modeling in here as noted above.
    - 4.2: Consider simplifying the description to "status and change in environmental conditions" - The workgroup has not done much wrt 4.2.1 or 4.2.2, this may be outdated at this time. While importance of 4.2.3 is still relevant, suggest changing this to track and inform TCW updates, benefits, and developments for monitoring approaches. TCW can work to suggest specific methods (monitoring, analytical) to improve PCB assessment. Continued updates on studies to inform indicators of how to assess change. (Can we get a point of asking as a TCW: What is common between the states that everyone is monitoring and would it provide necessary information to assess changes with time?)

5. What, if any, actions can the Management Board take to help ensure success in achieving your outcome?

Please be as specific as possible. Do you need direct action by the Management Board? Or can the Management Board direct or facilitate action through other groups? Can you describe efforts the workgroup has already taken to address this issue? If this need is not met, how will progress toward your outcome be affected? This assistance may include support from within a Management Board member's jurisdiction or agency.

TBD based on TCW discussions.