Chesapeake PCB Consortium Conceptual Framework and Proposed Exploration

Goal

To explore the formation of a Chesapeake Polychlorinated biphenyls (PCB) Consortium that will support jurisdiction PCB Total Maximum Daily Loads (TMDLs) by collectively promoting efficiencies in the assessment, mitigation, and remediation of PCB-impacted sediment, water, and fish tissue in the Chesapeake Bay watershed.

Need for a PCB Consortium

- Impairments of both riverine and estuarine waters due to PCBs are widespread throughout the Chesapeake Bay watershed, as shown on the draft impairments map in Figure 1.

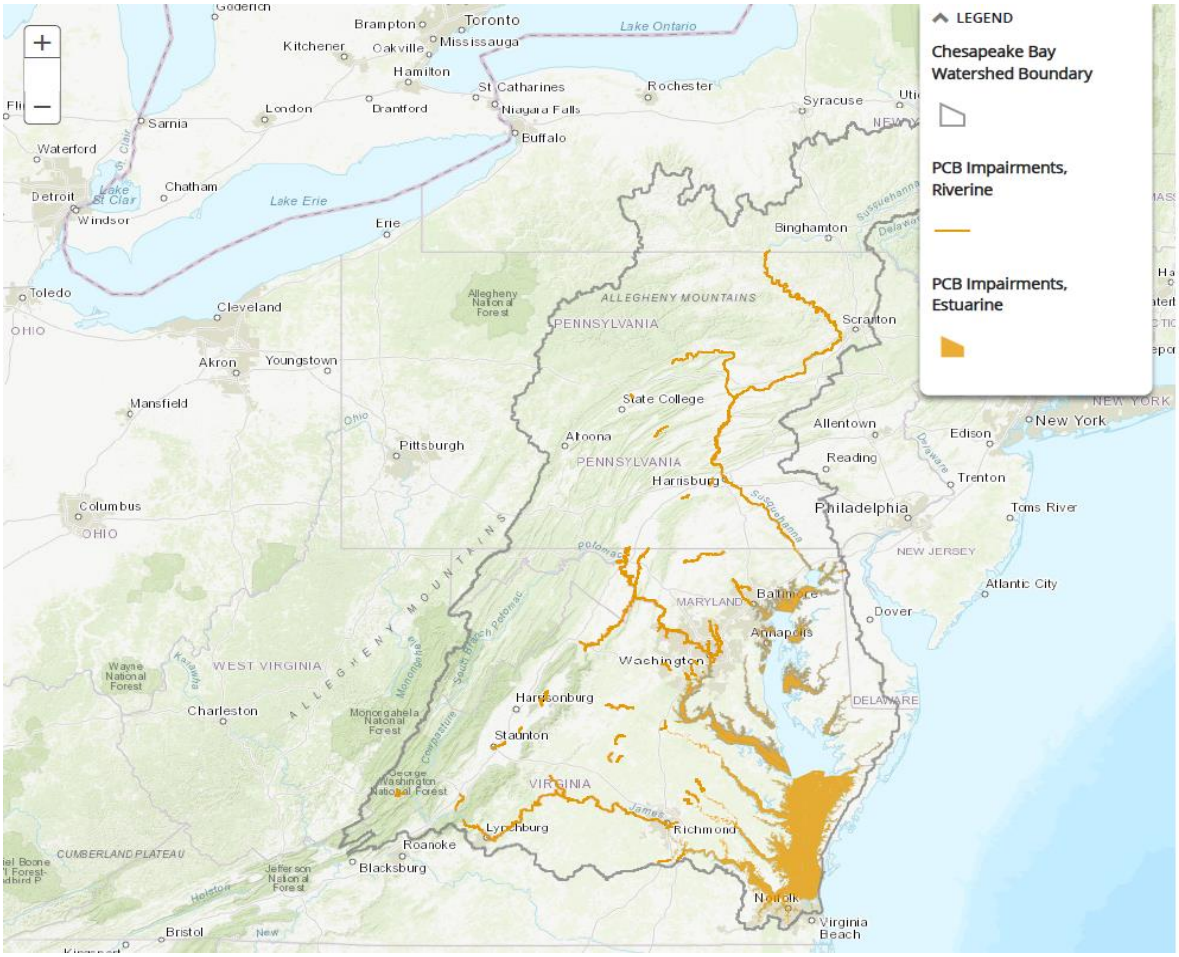

Figure 1. Chesapeake Bay Watershed impairments attributed to PCBs (2017).

- PCB contamination is the risk that is the basis for most of the fish consumption advisories in the estuary.
- The fate, transport, sampling and analysis of PCBs in environmental media and fish tissue present complex technical challenges that are different than nutrient chemistry, although PCBs readily sorb to sediments. This complexity and the regional scope of the PCB contamination issue in the watershed demands a regional response of commensurate scale, more aligned with the current pace of TMDL progress and ideally through a structure larger and more visible than the Chesapeake Bay Program Toxics Contaminant Workgroup.
- All watershed jurisdictions are active in developing and implementing PCB TMDL programs making it an optimal time to form the Consortium. Large-scale TMDLs are in place or in development within the watershed (e.g., Potomac, James and Susquehanna Rivers) and present a need for interstate cooperation.
- There are complex technical considerations related to the Conowingo Pool/Conowingo Dam jurisdiction and the associated PCB contamination of Conowingo sediment.

Throughout the lifecycle of the PCB TMDL process, there is a benefit to coordination and optimization across jurisdictions to promote understanding and efficiency. The high level of regional interest in the topic was apparent in the well-attended, interagency PCB workshop hosted by the Baltimore Urban Waters Partnership (BUWP) Actionable Science workgroup in August 2017. Attendees from Maryland, Delaware, DC, and Virginia expressed a desire to continue to have technical exchange forums in which they could share their experiences and lessons learned, hear more about advances in monitoring, analysis, and remediation of PCBs, and interact with researchers, and State and federal agencies with regulatory or water quality monitoring responsibilities. Although a follow up workshop is scheduled for September 2018, the BUWP is not currently equipped to continue to focus on PCBs throughout the lifecycle of the TMDL, or support efforts beyond the greater Baltimore area.

Potential Benefits and Outcomes of a PCB Consortium

The formation of a PCB Consortium could fulfill the need for a regional forum to house the body of knowledge needed to transfer science to management throughout the PCB TMDL

lifecycle (see attachment A, PCB Resource Center). The Consortium could specifically facilitate the exchange of best practices for source identification, sampling and analysis methodologies, monitoring protocols, and remediation technologies. In addition, it could provide shared information and resources for model development (including air deposition). The Consortium could provide a central point of contact from the Chesapeake Bay for other watersheds and similar partnerships across the country such as the Great Lakes, Puget Sound, and San Francisco Bay for consultation and occasional participation in its forums.

Jurisdictions specifically have expressed support for the PCB Consortium concept in its adaptive approach to PCB TMDL implementation. Efficiencies can be gained by sharing information more formally on topics such as developing monitoring plans, PCB track-down studies and many other aspects of PCB TMDL implementation. Some jurisdictions have expressed that the Consortium could be very beneficial in providing resources to inform the local and state jurisdictions in addressing these issues since effective TMDL implementation is constrained by the resources available to conduct these investigations.

During the exploration process, specific roles and outcomes for the Consortium will be considered and prioritized based on feedback from prospective members, however, some potential outcomes could include (but are not limited to):

1. Promoting more accurate and consistent assessment of the occurrence and distribution of PCBs in water, sediment, and biota;
2. Informing the jurisdictions of new technologies in monitoring, analysis, and remediation, and pollution prevention through webinars, working groups, and possibly a series of technical bulletins;
3. Organizing technical forums each year to connect the jurisdictions with regulators, resource managers, and researchers conducting investigations of PCBs in the environment, and
4. Engaging health professionals and the public about the relative health risks of PCBs, informing how to use PCB assessment information to advise the public such as through fish consumption advisories.
5. Applying the products from GIT funding projects such as the current projects related to PCB reductions from wastewater and the feasibility of voluntary removal of PCBs in current use.

Structure, Membership, and Governance

The Chesapeake PCB Consortium is not envisioned to have regulatory authority, rather it could be a voluntary partnership open to all stakeholders working to advance the goals outlined above. The appropriate structure to "house" the Consortium would be part of the exploration process. Some considerations for its structure include (but will not be limited to):

1. An independent, distinct partnership structured similar to the Chesapeake Conservation Partnership,
2. Forum within the EPA Region 3 PCB Program, or Chesapeake Bay Program
3. A group within other existing partnerships or organizations.

A Consortium, if formed, could strive for diverse membership and participation that could include representatives with responsibilities for meeting PCB TMDLs goals in the region (including county and municipal jurisdictions). The proposed PCB Consortium could work in conjunction with a number of existing partnerships such as the Chesapeake Bay Program Toxic Contaminant workgroup, the Baltimore and Anacostia Urban Waters Partnerships, and similar partnerships in other parts of the Chesapeake Bay watershed. Some prospective participants in the Consortium may include officials from State and federal regulatory agencies, State and federal resource assessment agencies, Regional River Basin and Reservoir Commissions, academic researchers, and environmental consultants. It could also include representative from public health schools and agencies, port authorities, sanitation commissions, and industry groups. It could also include interested non-government organizations.

The appropriate organization of the Consortium is proposed as part of the exploration task, but generally could be considered multi-tiered, including an Executive Board, regular members, and occasional participants. The Consortium could benefit from an Executive Secretary to organize board meetings and put together teams of members who would provide time and ideas to put together the aforementioned forums. The Consortium would also benefit from a Science Coordinator to identify technical topics of interest, lessons learned, identify and conceive pilot projects, and draft or review technical bulletins.

The development of a governance document could be one of the first tasks in establishing this Consortium following the exploration phase should the Chesapeake Bay Program Partnership decide to support establishment. A governance document could be signed by all member organizations represented on the Executive Board. Guidance and recommendations for governance would be included as part of the exploration of the Consortium. Consideration of

time commitments by jurisdictions will be assessed as jurisdictions have expressed support for the PCB Consortium concept if significant staff resources are not required. It will be important for the exploration team to consider the limitations of jurisdictions and be sure that a Consortium will allow the jurisdictions to do their jobs more efficiently as opposed to adding new responsibilities.

Sustainability

Initially, it may be possible to obtain end of year funding from one or more federal agencies as seed money to promote the Consortium to potential member organizations, and draft the governance and science strategy. Since it is the goal of the Consortium to provide support through the lifecycle of the TMDL, it is anticipated that the Consortium will need to secure sustained recurrent funding. For this longer-term annual support, the exploration will consider possible pooled funding options supported by member organizations and perhaps even by industry groups to sustain the Consortium. Jurisdictions have expressed some concern about the ability to secure adequate and sustained funding that would be necessary.

Exploration Charge

Given the needs and vision outlined in this document, we propose the further exploration of the PCB Consortium concept to provide stakeholders a framework to achieve compliance with the PCB TMDLs in the Chesapeake Bay watershed. Specifically, with concurrence from the Management Board, an exploration team will be formed, consisting of representatives from USGS, EPA, and watershed jurisdictions, to complete the following tasks:

1. Gather and synthesize feedback from prospective members
2. Identify and prioritize outcomes and their potential value
3. Identify and assess options including costs and recommend appropriate structure to "house" or host
4. Develop options for governance and operation
5. Identify and recommend sustainable funding options

The exploration team will summarize its findings and report back to the Management Board approximately December 2018.

Appendix A – Preliminary Outline for PCB Resource Center Content

Purpose/Objectives

Establish a compilation of data, guidance documents, maps, mapping tools, modeling tools, lessons learned from within and outside the watershed to enhance the efficiency of PCB local TMDL implementation.

How does this effort fill gap/need within Chesapeake watershed? A need exists for a central information source and gaps exist in specific parts of local PCB TMDL development and implementation process.

Ideas of resources for key points in the TMDL development and implementation process:

Water Quality Standards

- Link to all WQSs in the watershed

Monitoring environmental condition

- Types of data valid for 303d determinations
- Mapping tools to help target monitoring

Impairments identified

- WQ standards

Developing TMDL (WLA + LA + ME = TMDL)

- Map of impairments needing TMDL
- Data Sources - TRI, National Business Database
- Local watershed modeling tools

Sources

- Map of likely source categories

Specific Targets in Local TMDL

- Track-down guidance
- Desktop tools – Database of contaminated sites

Management Actions

- Nutrient/Sediment BMP benefits (CSN report, WQ GIT co-benefit project, BMP scenario tools)
- Source-specific

Measuring Progress

- Short term – Estimates of load reduction in local TMDLs
- Long term – Increased coverage of TMDLs for listed PCB impairments
- Monitoring/modeling