# Discussion of Design Considerations for PCB Monitoring

For Sept 8 Toxic Contaminant Workgroup Meeting

Issue: The Chesapeake Bay Program Principal Staff Committee (PSC) requested information to enhance the CBP monitoring networks. While the request is focused on the existing CBP networks, information is being included on monitoring needs of selected outcomes in the Chesapeake Watershed Agreement. The STAR team is leading the development of the information and has engaged the Toxic Contaminant Workgroup to develop monitoring needs for their outcomes: Policy and Prevention and Research.

The information being requested for the monitoring strategy includes:

* Need for a network (relation to CBP goals and outcomes)
* Network objectives
* Monitoring design considerations (media, frequency, sample number, method – field and analytical, locations – targeted, random), will be informed by objectives.
* Existing monitoring that can be utilized (what is being done, partners involved, current resources, and what could be leveraged (if possible))
* Remaining gaps
* Options to address the gaps. (This would be general, not a detailed network design but could have funding estimates).

## Progress:

The TCW has discussed monitoring needs and developed the following monitoring objectives:

* Determine if work in non-tidal zones due to remediation and management actions are resulting in downstream reductions of PCBs in fish in key tidal tributaries (impaired for PCBs) through consistent assessment methods (field and analytical).
* Determine occurrence or status of PFAS and microplastics in surface waters of the major tributaries of the CB with varied land use to establish a baseline to track concentration and loading changes through time using consistent methods and analytes.
* Determine if implementation of BMPs and conservation practices over time results in declines in pesticide concentrations using a prioritized/standardized list of pesticides, and consistent sampling and analytical methods.
* Are reductions in air deposition of mercury reflected in fish tissue declines, specifically focused on food/recreational fish trends in urban and non-urban areas

## Next Step: Considerations for Monitoring Design

The TCW will focus on just PCBs at their September meeting and the associated objective has been modified to read:

**Determine if remediation or management actions in non-tidal zones are resulting in downstream reductions of PCBs in PCB-impaired waters**

We will discuss some potential monitoring approaches using table 1 at the September meeting. The jurisdictions and monitoring agencies will be asked to provide more detailed information on their current monitoring after the meeting (table 2).

**Table 1:** Discussion of potential approaches for PCB monitoring design to achieve the objective:

**Determine if remediation or management actions in non-tidal zones are resulting in downstream reductions of PCBs in PCB-impaired waters**

**Discussion Questions for September Call:**

* What could enhanced monitoring for this objective look like? Enhancement or expansion of something you are already doing or something you’d like to see done to complement your ongoing work?
* Would any of these approaches be consistent with or complementary of your ongoing monitoring approaches to assess PCB reductions? Do you favor one approach over another?
* Do you have information needed to identify targeted locations for a given approach within your jurisdictions? If not, what gaps exist? (e.g. inventory of remedial actions ongoing for PCBs, inventory of WWTP upgrades, BMP intensity by watershed? Others?)
* What training or guidance would be necessary to ensure consistent, successful implementation of this monitoring in the watershed? (e.g., using any new sampling analysis methods or techniques that are unfamiliar)

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| **Monitoring Approaches for this Objective** | **Assessment Endpoint** | **Media (sw, fish)** | **Frequency (Annually, quarterly, other?)** | **Field Method (passive, grab, other)** | **Analytical Method (1668, 8082, other?)** |
| Head of tide sw sampling (DE model) – major CBW river basins |  | sw |  |  |  |
| Head of tide sw sampling (DE model) – targeted CBW river basins with high remediation or management activities |  | sw |  |  |  |
| Fish tissue sampling- major CBW river basins |  | fish |  |  |  |
| Targeted Fish tissue sampling – targeted CB river basins |  | fish |  |  |  |
| Targeted downstream locations of high remediation or management |  |  |  |  |  |
| Nested monitoring that includes targeted downstream locations and head of tide |  |  |  |  |  |
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**Table 2:** Gathering information for current PCB monitoring that supports the objective**: Determine if remediation or management actions in non-tidal zones are resulting in downstream reductions of PCBs in PCB-impaired waters**

* Do you have existing or ongoing monitoring approaches that support this objective, or do you have strategic monitoring locations for other purposes that could be leveraged to support this objective?
* For your existing or ongoing monitoring approaches that may support this objective, please complete the table below to include what media are you sampling, at what frequency, and what field/analytical methods are you using? What is your assessment endpoint (eg. Load, concentration, other?)

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| **Jurisdiction** | **Monitoring Approach** | **Media (SW, Fish, Other)** | **Frequency (Annually, Monthly, Other)** | **Methods (field/analytical)** | **Assessment endpoint (conc, load, other?)** |
| **EX** |  | **SW** | **Annual** | **Passive/1668** | **Event load** |
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