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DATE: 7 March 2024

SUBJECT: Toxic Contaminant Workgroup Project Funding Needs

Numerous science and other needs exist for the two outcomes (Policy and Prevention, and Research) associated with the Toxic Contaminant Goal. At the February 2024 meeting of the Toxic Contaminant Workgroup (TCW), the group discussed, provided feedback, and prioritized possible topics for GIT funding opportunities.

Of the topics discussed, participants prioritized the Per- and polyfluoroalkyl substances (PFAS) and fish contaminant Education and Outreach general topic areas (with the emerging issue of 6-PPD/quinone also generating interest). These topic areas support the Research Outcome strategy gaps and elements of the Policy and Prevention Outcome management strategy. Within these topic areas, the following ideas are provided for your consideration (order of tasks under each heading suggestive of priority order):

PFAS

1. ***Guidance on Selecting PFAS Analytical Approaches***

   Brief description of project, including key tasks: In the absence of regulatory guidance, perform a literature review of approved and draft EPA methods, and develop a decision tree to assist with selecting PFAS analytical approaches to match study objectives while considering Chesapeake Bay specific conditions (e.g., changing salinity, effects on key watershed species). The deliverable resource would emphasize non-drinking water investigations and studies to include analyte lists, and document benefits and limitations of screening tools methods (e.g., total organofluorine, total oxidizable precursors). Where available, average costs will be provided. This resource would aid jurisdictions in designing and executing consistent studies of the PFAS footprint within their boundaries, while maximizing opportunities for leverage and coordination, and cross-boundary interpretation. Where available, current approaches of ongoing studies will be included and considered along with anticipated regulatory thresholds.

   Targeted audience/user base: Primarily Chesapeake Bay watershed (CB) jurisdictions and workgroup members; however, the resource could be useful to any organization investigating PFAS occurrence.

   GIT priorities that will be addressed through project funding and implementation: This effort directly supports the management strategies for the toxic contaminant goal. PFAS has been a part of the TCW Research strategy since 2018 as an emerging issue. In the 2022 SRS process, PFAS were integrated into 3 additional management approaches with emphasis on human fish and shellfish consumption, fish and wildlife health effects, and sources, occurrence and transport. In addition, in response to requests from the workgroup members, the TCW has convened quarterly meetings on prioritized topics to facilitate knowledge transfer, maximize leveraging and collaboration, and to promote unified approaches across the watershed.

Identification of (any) cross-GIT application(s): Sustainable fisheries, Habitat (stream health) Healthy fish, healthy people

Intended results: A valuable resource that will help PFAS investigators better match PFAS analytical methods with their data objectives and quality assurance project plans.

Projected budget: ~ $40K

What other funding sources have been pursued for the project? TCW is not aware of any other organization currently working on this need.

2. ***Determining PFAS Background Concentrations***

Brief description of project, including key tasks: Literature review of establishment of background concentrations in different media, including a summary of published background values and scale of effort (e.g., site, watershed, etc.). Project would include determination of the unique considerations for the design of a background study for PFAS in Chesapeake Bay (to include data gaps such as precipitation, stormwater, etc.). Review would include ongoing efforts by jurisdictions within their own boundaries to promote consistency and maximize leverage and coordination.

Targeted audience/user base: State and federal investigators; academics advancing PFAS environmental fate model development

GIT priorities that will be addressed through project funding and implementation: The TCW endeavors to find common needs across the Partners that the workgroup can provide an efficient means of addressing thereby saving Partner resources across individual agencies. This knowledge gap has been identified by CB jurisdictions.

Identification of (any) cross-GIT application(s): Addresses improved performance of PFAS strategies in the water quality goal area and, as a result, leads to improved quality of fisheries and reduced risk to humans from PFAS bioaccumulation in fish.

Intended results: A summary report that synthesizes published approaches and values of establishing background concentrations for various media. Outlines recommendations and evaluates whether data is available and/or any efforts currently underway to establish PFAS background estimates and makes recommendations for design elements to include in future PFAS background studies.

Projected budget: $40K

What other funding sources have been pursued for the project? TCW is not aware of any other organization currently working on this need.

<u>Education and Outreach</u>

1. ***PFAS-Modified Fish Consumption Advisory Infographic***

Brief description of project, including key tasks: Development of an infographic for PFAS in fish highlighting differences in fish preparation techniques required compared to more hydrophobic

contaminants such as PCBs. Would include review and incorporating of references to any existing jurisdictional information on the topic (e.g., links to current fish advisories for PFAS).

Targeted audience/user base: Jurisdiction fish consumption-program managers, Health and nutrition advisors to watershed residents, watershed environmental organizations.

GIT priorities that will be addressed through project funding and implementation: Follows a priority work item in the Policy and Prevention Outcome management strategy and action plan related to raising awareness on the presence of PCBs and PFAS in the system and taking the next step following the successful first generation of infographics developed by TCW using GIT Funding resources.

Identification of (any) cross-GIT application(s): WQGIT in its mission to meet water quality standards and designated uses including fishability; Stewardship in the context of the CBP vision of a healthy watershed; Healthy People in the Beyond 2025 context

Intended results: Greater awareness by all stakeholders, beginning with women of childbearing age and children (the focus of the previous infographic) but also to include leaders and managers across the watershed who might join the effort to reduce inputs of PCB's and other bioaccumulative contaminants as a result of greater awareness.

Projected budget: ~ $40k

What other funding sources have been pursued for the project? TCW is not aware of any other organization currently working on this need.

2. ***Enhance PFAS Communication Tools***

Brief description of project, including key tasks: Develop a compendium of communication tools on PFAS in Chesapeake Bay and the watershed. Deliverables would include a set of summary communications pieces based on data review and incorporating existing jurisdiction communication of PFAS in the environment.

Targeted audience/user base: jurisdiction agencies, federal partners, EPA region 3, management groups in CBP including Management Board, PSC, EC.

GIT priorities that will be addressed through project funding and implementation: An improved understanding of the occurrence of PFAS in the system has created an urgency in federal state and local government response. The information has accumulated so quickly it is difficult for partners to assimilate into a summary of what is known. This compendium would provide a highly efficient means of briefing Chesapeake Bay stakeholders.

Identification of (any) cross-GIT application(s): WQGIT in its mission to meet water quality standards and designated uses including fishability; Healthy People, Healthy fish, Healthy Ecosystem

Intended results: Continuing the Chesapeake Bay Program's leadership in communicating the state of the science and knowledge of occurrence, sources, concentrations, and effects of PFAS in the environment. This began with a recent STAC workshop on PFAS, which made a unique contribution by assessing the occurrence of PFAS in ecosystem compartments beyond drinking

water. This project would provide a visible resource that could be referenced across the Bay watershed.

Projected budget: ~$25k

What other funding sources have been pursued for the project? TCW is not aware of any other organization currently working on this need.

Emerging Issue

1. ***Investigating the Presence of 6PPD/Q in Brook Trout Habitat***

Brief description of project, including key tasks: Assess the potential for 6PPD/Q presence and risks posed in critical Brook Trout habitat using land use assessment tools that might indicate overlap of risk factors (e.g., impervious surface, traffic density, bridge crossings, etc.) with critical habitat areas. New studies suggest Brook trout are highly sensitive to the tire-related pollutant 6PPD/Q (add ref); however, an understanding of presence in the Chesapeake Bay waterways in unknown and a full watershed assessment is cost prohibitive. The project would include a literature review and development of recommendations for an environmental monitoring study design that is considerate of implications for other Chesapeake Bay species. A minimum of one pilot study area for sample collection and analysis would be covered by project funds; however, it is expected that other partners will contribute to the project and, all-together, the study can include sampling and analysis in more than one high priority brook trout habitat area.

Targeted audience/user base: Brook Trout Workgroup, public agencies involved in environmental monitoring. Substantial interest has been expressed by leaders of the brook trout and other fish health researchers.

GIT priorities that will be addressed through project funding and implementation: 6PPD/Q is an emerging contaminant that TCW is making space for following recent publication of effects thresholds that indicate brook trout are among the most sensitive species for this pollutant.

Identification of (any) cross-GIT application(s): Brook trout abundance outcome

Intended results: Synthesize literature and conduct land use assessment to identify overlapping areas of the watershed at highest risk to 6PPD/Q effects and critical habitats, such as Brook Trout. This land use analysis would identify areas of highest sampling priority, considering Brook Trout and other critical species and potential effects. Static maps could be generated and used to summarize the priority areas and outline appropriate sampling and analysis approaches to assess presence of 6PPD/Q in surface water and fish. Consideration will be taken to determine any ongoing fish studies or sampling ongoing in these areas to facilitate leveraging. Reliable data that will indicate whether this pollutant is a stressor that may be limiting the abundance of brook trout and may be a factor influencing achieving the brook trout goal.

Projected budget: ~$125k

What other funding sources have been pursued for the project? TCW leadership is actively engaged with other federal agencies working on this topic in other watersheds. Some opportunity for collaboration or leveraging may result if awarded.