

Table 1: Defining the Project and Outlining the Scope of Work

*The purpose of this table is to articulate a project idea to evaluate project necessity/relevancy and to strengthen project outcomes, steps, and deliverables. As you are developing your ideas, consider describing in your project justification section if the following three initiatives were incorporated: 1) Science, 2) Diversity, Equity, Inclusion, and Justice, and/or 3) Local Engagement.

<i>Item</i>	<i>Guidance</i>	<i>Response</i>
<u>Goal Implementation Team (GIT)</u>	As determined by the Chesapeake Bay Program.	Water Quality
<u>Project Priority #</u>	List the rank of this project in relation to other projects being submitted by the same GIT. Teams may submit up to four project ideas, each with a rank of 1-4.	3
<u>CBPO Creative Team Component(s)</u> (Yes or No)	Does this project involve components that require input from the following functional areas: Web and Creative, GIS, Communications, and IT.	No
<u>Proposed GIT Technical Project Lead</u>	If this project idea is selected to move forward for bid, the person identified as the GIT Technical Project Lead will be responsible for reviewing and recommending the selected contractor; this person will also review and approve the selected contractor's work for the duration of the project. GIT technical leads cannot be a part of the bidding team or financially be involved in the project. Provide the following for the GIT Lead: 1) First and Last Name, 2) Organization, and 3) email address.	Emily Majcher, USGS MD-DE-DC Water Science Center, and Scott Phillips, USGS NE Region, on behalf of the Toxic Contaminant workgroup (TCW) emajcher@usgs.gov swphilli@usgs.gov
<u>Preparers</u>	List names of all parties beyond the GIT lead who were part of developing the content of this table; list first the lead preparer (the point of contact for questions/clarification). These entities will not be allowed to bid on the scope of work during the Request for Proposals (RFP) stage. Provide the following for each Preparer: 1) First and Last Name, 2) Organization, and 3) email address.	Emily Majcher, USGS, emajcher@usgs.gov Scott Phillips, USGS, swphilli@usgs.gov Greg Allen, EPA, allen.greg@usgs.gov Gary Shenk, USGS, gshenk@chesapeakebay.net Olivia Devereaux, Devereaux Consulting, olivia@devereauxconsulting.com Jeremy Hanson, Virginia Tech, jchanson@vt.edu Ed Dunne, DC Water, ed.dunne@dc.gov
<u>Project Title</u> (10 words or less)	The title should be short and give a high-level view of what your project is trying to accomplish. Creative and catchy is fine only if it also captures the real purpose of your work. (Good Examples: "New Methods for Resilient Fish Ladder Design"; "Research and Database Creation for In-stream Litter Collection Devices"; "Development of Invasive Plant Management at Reforestation Sites").	Methods to integrate co-benefits of toxic contaminant reduction into decision tools
<u>Project Type</u> <u>(check all that apply)</u>	<u>Metric Development and Tracking Projects:</u> <ul style="list-style-type: none"> • Support for science needed to develop metrics • Metric/indicator development • Performance measure development • Monitoring/tracking program development • Data collection program development 	<u>Logic and Action Plan Implementation Projects:</u> <ul style="list-style-type: none"> • Economic modeling • Database development • Policy research and recommendations • Training • Mapping, lands assessment • Baseline analyses
		<ul style="list-style-type: none"> • Metric/indicator development • Performance measure development • Assessments of data to evaluate progress on metrics • Modeling support • Other (please describe) – methodology development

	<ul style="list-style-type: none"> Assessments of data to evaluate progress on metrics Modeling support Other (please describe) 	<ul style="list-style-type: none"> Environmental monitoring Environmental demonstration projects Other (please describe) 	
<u>Proposed Outcomes</u>	<p>Outcomes are the changes you expect to see as a result of the work being completed. Examples of outcomes could be increased knowledge around how fish are changing habits/will change habits due to climate change; future fish ladders will be more successful due to readily available improved design standards; future fish passage policies will be reflective of resulting research.</p>		<p>The project will develop methods and provide improved information on the removal efficiencies for select urban contaminant Best Management Practices (BMPs) into Chesapeake Assessment Scenario Tool (CAST) and other appropriate management tools. The findings will provide the basis for improved decision making by states and local governments on the co-benefits of nutrient and sediment practices to reduce contaminants, improve habitat conditions for fisheries, address the many toxic contaminant water impairments and make fish safer to consume by diverse groups in urban areas.</p>
<u>Justification</u> (500 words or less)	<p>This is your elevator speech - why is this work important to the over-arching goals? Why is it important to the other GITs? How does this work build on previous work? Be succinct in your answer.</p>		<p>PCBs (and other contaminants in urban areas that may behave similarly such as organochlorine pesticides and PAHs) have caused fish consumption advisories and degraded the health of fish. In some of these areas, a portion of people's diet depend on consuming locally caught fish that are a risk to eat.</p> <p>State agencies and local governments, who manage water quality and recreational fishing, need improved information to mitigate toxic contaminants, and how they can take advantage of on-going nutrient and sediment reduction efforts. The findings will further inform the co-benefits of outcomes being addressed by the CBP Water Quality, Fisheries, and Habitat Goal Teams.</p> <p>The proposal builds from an effort previously supported by the TCW to assess the Potential Benefits of Nutrient and Sediment Practices to Reduce Toxic Contaminants in the Chesapeake Bay watershed (Schueler and Youngk, 2015; 2016). Despite the exhaustive literature review conducted in urban, agricultural and wastewater sectors, there was little evidence at that time of published effectiveness of nutrient and sediment practices to remove toxic contaminants, and rather conclusions were made about probable practices using surrogates rather than direct measurement of reduction (e.g., sediment for hydrophobic contaminants like PCBs).</p> <p>Additionally, discussions with the CBP modeling team about CAST suggested without the information on BMP effectiveness of toxic contaminants, they could not be included into the tool. These issues, lack of BMP effectiveness data and the best way to package information into decision tools, greatly limited progress on identifying potential co-benefits of nutrient and</p>

		<p>sediment practices to also reduce toxic contaminants.</p> <p>However, there is new and growing body of information to overcome these limitations for developing co-benefits between nutrient, sediment and toxic contaminant reduction. A STAC workshop held in May 2019 (STAC, 2020) revealed ongoing advances in the use of stormwater practices for toxic contaminant removal, especially for PCBs, one of the toxic contaminants that drive many fish consumption advisories nationwide. These advances have largely been driven by the implementation of toxic contaminant TMDLs in urban areas, particularly in the west/northwestern United States. While many of the advances have occurred outside the Chesapeake Bay watershed such as in the San Francisco Bay area and Portland and Spokane, researchers within the Chesapeake Bay watershed and the Department of Defense have advanced experiences more locally.</p> <p>The new and expanding body of information provides a timely RFP topic to make progress on the toxic contaminant research outcome to identify which best management practices might provide multiple benefits of reducing nutrient and sediment loads as well as the presence of PCBs (or similar contaminants) in waterways.</p>
<p><u>Proposed Project Steps and Timeline (up to 8 maximum)</u></p>	<p>List all of the major steps required to accomplish the project goals. Make sure to include any meetings with GIT teams and other relevant stakeholders (try to quantify meetings; a step to review draft deliverables by relevant stakeholders; and a step for the contractor to refine the deliverables after draft review. Indicate whether the methods by which a contractor will be expected to undertake the work are well known or whether you intend for the bidders to propose the methodology. Assume that work will start March 2021.</p>	<p>The proposed project will focus on developing the best methods to estimate potential toxic contaminant removal for selected urban BMPs that are also being implemented for nutrient and sediment reduction. These BMPs would include structural, non-structural urban BMPs (likely bioretention or infiltration type), alternative BMPs (such as stream restoration and bioretention media enhancements) and wastewater treatment upgrades. In stream mitigation approaches, such as dredging or (active) capping, should also be considered. This approach will provide a range of removal efficiencies for selected urban BMPs and how they can be considered in CAST and other tools being used by managers to assess the co-benefits for water-quality and habitat decisions. The project will be completed through the following tasks:</p> <ol style="list-style-type: none"> 1. Identify the BMPs and practices most implemented in areas with PCB impairments, approved TMDLs and established fish consumption advisories. This can be accomplished by communication with the CBP urban stormwater and wastewater workgroups, the CBPO BMP team and state jurisdictions utilizing existing databases and GIS. Develop listing/table by state of common practices considered for PCB reduction that are not captured in existing models.

		<ol style="list-style-type: none"> 2. Review literature to summarize methods and outcomes of ongoing or completed projects that assessed PCB reduction in BMPs and wastewater practices (and the conditions under which that reduction was measured) identified in 1. If other co-contaminants were included, these should also be summarized. In addition, assess and identify knowledge gaps in required information to accurately build reduction scenarios into existing model platforms (e.g., CAST and SWMM) from these literature studies. 3. Review the state of the science to assess if surrogates can be used to help estimate effectiveness of removal of PCBs or similar toxic contaminants where direct measurements are not reported. For example, look at information on sediment reduction and see if it can be used for estimating contaminant reduction for selected urban BMPs and contaminants. Primary focus will be PCBs since it the most widespread contaminant with existing TMDLs across various states. Identify where surrogate approaches have been used elsewhere for contaminant modeling and for which contaminants (other hydrophobic contaminants such as PAHs or metals). 4. Consult with coordinator of BMP expert panels to develop data quality criteria to reflect confidence in the reported removal for use in the CB watershed, e.g., Table 1 in the WQGIT's BMP Review Protocol. New expert panels are not envisioned but we want to use their guidelines to recommend categorization of the case study information gathered for each prioritized BMP and the contaminant removal case study results based on location of study, comparison of climatic conditions if outside the watershed, co-contaminant presence, and other potential factors. 5. Form a technical advisory panel (to include some local or state jurisdictions) at the beginning of the project and engage CAST and watershed model staff within CBPO at least quarterly to ensure that approaches, information gathered, and findings are consistent with information required for inclusion in various tools available and useful to stakeholders. 6. Prepare a summary report that includes a summary of the literature assessment from previous tasks 3 and 4, and communicate
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<u>Estimated Costs</u>	<p>Provide an estimate of the project cost (generally \$25,000-\$75,000). Estimating accurate budgets can be a challenge. Some tips to improve budget accuracy: to start, estimate number of the hours and other costs like supplies and travel that it would take <i>YOU</i> to accomplish each of the steps identified above. Keep in mind that contractors can range from \$50-150 an hour (when indirect costs are factored in). Don't forget to include the time it would take for the contractor to attend any meetings. Finally, don't forget to account for contractor time to revise final products to incorporate stakeholder feedback.</p>	\$56,000
<u>Cross-Goal Benefits</u>	<p>List any cross-goal benefits succinctly</p>	<p>The proposal would address multiple CBP goals and outcomes, including the</p> <ul style="list-style-type: none"> -Toxic Contaminant Policy and Prevention: working to reduce PCBs in the watershed. -Toxic Contaminant Research: develop information on the co-benefits of toxic contaminant, nutrient, and sediment reduction. \ -Watershed Implementation Plans 2025: information needed to consider co-benefits of practices for 2-year milestones. -Fish habitat: improving aquatic conditions for freshwater and estuary fisheries. -Local leadership: improving information on water resources issues.