

BIENNIAL STRATEGY REVIEW SYSTEM

Chesapeake Bay Program



Logic and Action Plan: Post Quarterly Progress Meeting

Toxics Policy – 2018-2019

[NOTE: make sure to edit **pre-** or **post-** in the text above, to tell the reader whether this logic and action plan is in preparation for your quarterly progress meeting or has been updated based on discussion at the quarterly progress meeting.]

Long-term Target: Continually improve practices and controls that reduce and prevent the effects of toxic contaminants below levels that harm aquatic systems and humans. Build on existing programs to reduce the amount and effects of PCBs in the Bay and watershed. Use research findings to evaluate the implementation of additional policies, programs and practices for other contaminants that need to be further reduced or eliminated.

Two-year Target: Completion of performance targets related to key actions

Instructions: Before your quarterly progress meeting, provide the status of individual actions in the table below using this color key.
Action has been completed or is moving forward as planned.
Action has encountered minor obstacles.
Action has not been taken or has encountered a serious barrier.

Additional instructions for completing or updating your logic and action plan can be found on [ChesapeakeDecisions](#).

Factor	Current Efforts	Gap	Actions	Metrics	Expected Response and Application	Learn/Adapt
<i>What is impacting our ability to achieve our outcome?</i>	<i>What current efforts are addressing this factor?</i>	<i>What further efforts or information are needed to fully address this factor?</i>	<i>What actions are essential (to help fill this gap) to achieve our outcome?</i>	<i>What will we measure or observe to determine progress in filling identified gap?</i>	<i>How and when do we expect these actions to address the identified gap? How might that affect our work going forward?</i>	<i>What did we learn from taking this action? How will this lesson impact our work?</i>
Broad geographic extent and distribution of PCBs	PCB Story Map and tidal impairments indicator map to communicate extent	Continued jurisdictional monitoring programs for PCBs,	Build on jurisdictional monitoring programs to coordinate			

	of PCB impairments.	including fish tissue sampling.	watershed-wide monitoring and tracking of PCB impairments.			
Political will to modify regulatory programs and/or create voluntary programs	Progress in implementation of local TMDLs, some progress on multi-state TMDL development	Ongoing GIT funded project to study feasibility of voluntary PCB removal program(s)	PCB Consortium to support progress on regulatory and voluntary programs in multiple jurisdictions			
High cost of remedies: in-stream sediment remediation; waste water PCB source track-down studies; electrical equipment replacements; stormwater controls; contaminated site remediation	Ongoing academic studies; WWTP PCB removal GIT funded study	Complete and release PCB track-down study and PMP guide.	PCB Consortium to share information in order to reduce high cost of management approaches, and consider more approaches to prevent release of PCBs			
Variety of sources and pathways for PCBs entering the environment that necessitate a wide-range of very different management responses (e.g., primary sources such as electrical equipment, secondary sources such as wastewater treatment by-products, and pathways such as stormwater runoff contaminated by	Reports from CSN to better understand variety of sources and pathways for toxic contaminants, including PCBs; Development of fact sheet to communicate multiple benefits of nutrient and sediment management practices for toxic contaminants	Further information needed on extent of atmospheric deposition of PCBs in the Bay Watershed; better understand PCB removal rates and efficiencies through nonpoint source management practices for nutrient and sediment reduction.	PCB consortium to share lessons learned on management approaches and best practices to implement PCB reductions through TMDLs, MS4 permits, and NPDES permits.			

air deposition or contaminated sites)						
Need to shift paradigm to acknowledge that there are ongoing sources of PCBs (i.e., PCBs are not static “legacy” contaminants)	No current efforts	Track potential new sources of PCB production, for example ink and dye manufacturing industries.	Develop approaches for understanding all sources of PCBs in the watershed.			
Knowledge gaps on relative sizes of PCB sources	No current efforts	Large scale synthesis and mass balance analysis of PCB sources in the watershed	PCB consortium could address this knowledge gap (with resources, e.g GIT funding)			

ACTIONS – 2018-2019

Action #	Description	Performance Target(s)	Responsible Party (or Parties)	Geographic Location	Expected Timeline
Management Approach 1: Regulatory Approaches					
1.1	Continue jurisdictional monitoring programs for PCB occurrence to assess need for new local TMDLs and progress related to reducing PCB loads.	1.1.1 Continue statewide fish tissue sampling for PCBs in at least 100 sites. Not all are in the Susquehanna Drainage. These are rotated to new locations every year.	PA DEP		42 sites were sampled within minor tidal tributaries and embayments of the CB Watershed, 35 of which were probabalistic and 7 of which were targeted, comprising a special study within the Potomac River
		1.1.2 Estuarine probabilistic monitoring which includes a list of PCB congeners in sediment	VA DEQ		

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Action #	Description	Performance Target(s)	Responsible Party (or Parties)	Geographic Location	Expected Timeline
		<p>1.1.3 Monitor all main stem tributaries to Bay listed as impaired. Fish PCB monitoring used on an as needed basis to monitor status;</p>	<p>VA DEQ</p>		<p>embayments. 3 of the targeted sites were within MD's Potomac River waters, off the mouth of VA embayments. An additional 11 probabalistic sites occurred in coastal Delmarva waters, and 4 in the Back Bay and North Landing River waters of the Albemarle Sound drainage. Sediment chemistry, sediment toxicity, and benthic community samples were collected at all 57 sites. Weight of evidence measurements for aquatic life use will be conducted for all sites, based on the sediment quality triad.</p> <p>Sampling design plan under development. Some stations will be placed in the non-</p>

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Action #	Description	Performance Target(s)	Responsible Party (or Parties)	Geographic Location	Expected Timeline
		1.1.4 TMDL source investigation studies included where PCB TMDL being developed. Includes sediment monitoring and low-level water column samples.	VA DEQ		tidal portion of the James River. A study plan is currently under development for the non-tidal, middle and upper James River segments.
		1.1.5 Conduct a PCB monitoring survey on pre and post-ENR WWTPs in Maryland to determine if there is an increase in removal efficiency from the ENR treatment technology. Conduct a second round of sampling on the two plants that are pre-ENR once the upgrade goes online.	MDE		The final round of sampling remains on hold as the Back River and Cox Creek WWTPs ENR treatment processes have not been completed. The contract has been extended through December 2018.
		1.1.6 Continue annual PCB monitoring in support of PCB TMDL development. Monitoring includes collection of water column (non-tidal/tidal), sediment and fish tissue samples for PCB analysis to support the development of water quality models in establishing PCB TMDLs.	MDE		Attempts to collaborate with other jurisdictions unsuccessful. The lower Sus River TMDL will depend on what happens with the Conowingo Dam. (Lower Sus includes all waters below the Conowingo Dam). 2019--TMDL will be in place for PCBs for both lower Sus and Conowingo pool.

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Action #	Description	Performance Target(s)	Responsible Party (or Parties)	Geographic Location	Expected Timeline
					Datasets that trigger changes in listings will be shared with the TCW. Have not seen a declining trend in Hg in young of the year but trends in Hg appear to be declining in Potomac main stem in older fish.
		1.1.7 Conduct toxic contaminant monitoring for the tidal waters of Aberdeen Proving Grounds (APG).	MDE		
		1.1.8 Conduct an analysis of Bay-wide PCB concentration data to improve our understanding of PCB dynamics through-out the Bay mainstem and the influence of loadings from the Susquehanna River and C&D Canal. The project will also focus on approaches for developing a PCB TMDL to address the main stem segment listing in MD's portion of the Bay.	MDE & VIMS		The study has been completed and a draft is currently undergoing review. It is anticipated that the report will be available in March 2019
		1.1.9 Continue annual PCB fish tissue monitoring for MDE's Fish Consumption Advisory Program to assign state-wide fish consumption advisories. The program also provides fish tissue data for MDE's Environmental Assessments and Standards (EASP) and TMDL Programs to support Integrated Report listing assessment and TMDL development.	MDE		Toxics data for fish tissue collected on 2016 is available for early 2018. fish tissue sampling was conducted in 2017 at 25 stations (56 composites) to support the consumption advisory program,

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Action #	Description	Performance Target(s)	Responsible Party (or Parties)	Geographic Location	Expected Timeline
					IR assessment, and TMDL development needs. Fish composite samples are being analyzed by UMBC and UMCES for PCBs, Hg, and chlordane. It is anticipated that the data results will be available in winter 2018.
		1.1.10 Conduct fish tissue study.	DOEE (WQD-ESA)		Fish tissue study was initiated July 2017. Expected completion in July 2018.
		1.1.11 Complete toxics monitoring on sediments in the Anacostia.	DOEE (WQD-ESA)		
		1.1.12 Approximately every five years, West Virginia performs a statewide fish tissue assessment to inform both fish consumption advisory and 303(d) listing processes. Mercury and PCBs will be analyzed.	WV		
		1.1.13 Develop a QAPP to describe objectives, monitoring procedures and laboratory methods to be used to characterize toxics in the Delaware portion of the Chesapeake Bay drainage.	DE DNREC		
		1.1.14 Compile existing toxics data within the Delaware portion of the Chesapeake Bay drainage.	DE DNREC		
		1.1.15 Collect up-to-date toxics data on surface water, surface sediment and biota within the	DE DNREC		

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		Delaware portion of the Chesapeake Bay drainage.			
		1.1.16 Collect deep sediment cores from a depositional area in the tidal Nanticoke River. Radio-date and analyze for contaminants to provide pollution history.	DE DNREC		
		1.1.17 Create priority list for sources in need of clean-up and restoration.	DE DNREC		
1.2	Continue local TMDL implementation utilizing to the extent possible the outputs of this strategy including data compilations, results of enhanced monitoring, guidance documents and local-level input	1.2.1 Potomac River PCB implementation includes point sources and MS4s. Point sources that exceed WLAs will submit PMPs.	VA DEQ		PCB samples have been collected and analyzed from point sources that have been assigned WLA's in the Potomac PCB TMDL. A determination for the need for Pollutant Minimization Plans (PMPs) is forthcoming. Several MS4s are in the process of or have submitted PCB TMDL action plans which are under review within DEQ.
		1.2.2 Tidal James/Elizabeth Rivers – point sources that have not screened effluents using the low-level method will be required to do so. Facilities that have screened their effluents and exceed their WLA will be required to submit PMPs.	VA DEQ		For the tidal James/Elizabeth River TMDL, a list of point sources has been developed for inclusion in the TMDL. For facilities

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Action #	Description	Performance Target(s)	Responsible Party (or Parties)	Geographic Location	Expected Timeline
		<p>1.2.3 Phase 1 MS4's which have been assigned a WLA within a PCB TMDL requiring a PCB load reduction are required to develop a PCB Implementation Plan within one year of an approved TMDL.</p>	<p>MD MS4's</p>		<p>that have not monitored as part of TMDL development, the initial step post-TMDL development will be to collect a prescribed number of sample results to compare with the assigned WLAs. The list includes municipalities, Industrial Individual Permits, and Industrial Stormwater General Permits. Facility effluents with existing loads that exceed WLAs will be asked to develop PMPs.</p> <p>Phase 1 MS4 Implementation Plans have been developed by Anne Arundel County for the Baltimore Harbor, Baltimore County for the Bird/Gunpowder River, and Harford County for the Bush River in 2015-2017.</p>

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					Counties that have submitted plans are currently developing monitoring programs to support PCB TMDL implementation.
		1.2.4 Finalize the District Consolidated TMDL Implementation Plan, and incorporate elements into District’s next MS4 Permit.	DOEE, DDOT, DGS, and Federal Landholders		The TMDL IP was finalized in August 2016; 5 year milestones from the IP have been used to inform the performance metrics in each draft of the District's next MS4 permit, which is expected to be finalized in early 2018.
		1.2.5 Implement stormwater BMPs and green infrastructure to meet TMDL IP’s first set of 5-year milestones.	DOEE, DDOT, DGS, and Federal Landholders		Ongoing. DOEE is actively working to compile finalized collection of BMPs.
1.3	Determine consistent implementation measures to use throughout the Bay watershed for tracking local TMDL development and implementation progress.	1.3.1 Develop maps to track locations where PCB TMDLs are active, under development, and needed.	CBP GIS team and Bay watershed jurisdiction GIS leads	Entire Watershed	Completed. Outreach to jurisdictional partners was conducted and updates to the previous map have been incorporated (reflects current

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Action #	Description	Performance Target(s)	Responsible Party (or Parties)	Geographic Location	Expected Timeline
					information as of calendar year 2017)
		1.3.2 Assess available information on identified management action implementation and determine next steps (e.g. status of npdes permits with regards to inclusion of PMP; MS4 action plans to ID potential IDDE connections to PMPs)	TCW and Bay watershed jurisdictions' TMDL programs	Entire Watershed	<p>NPDES Permits and PMPs: Outcome was a memo on incorporating PMP approaches but not numeric effluent limitations. Follow up is needed to examine memo.</p> <p>Unsure if any progress made on ID of potential IDDE connection to PMPs. Will consider inclusion as a separate item for next workplan.</p>
1.4	Determine whether the jurisdictions compile existing PCB outfall monitoring data for NPDES dischargers and assist with development of systems to compile all available information from governmental and academic organizations. This inventory will help determine whether there is a need for additional monitoring requirements to support TMDL development and implementation.	1.4.1 Reasonable potential analysis during permit reviews should include PCBs, but is focused on industrial permits	PA		
		1.4.2 Virginia has an Access Database used to store PCB data obtained from a wide array of matrices (sediment, water, effluent, etc.). The database structure, obtained from DRBC, was designed specific to storing data analyzed and reported using method 1668 including 209 PCB congeners (aka DRBC protocol).	VA		All PCB data generated using method 1668 are stored in this database; this includes results from sediment samples, ambient water samples and point source samples. These data

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					are used for purposed of tracking point source PCB results (existing conditions and follow up results when implementing the PMP, provides site specific information that can be used for "fingerprinting" prospective sources when using available data.
1.5	Assess the information that is available and forthcoming (e.g., the characterization of Anacostia river sediments by DC Department of Energy and Environment) that describes the most highly contaminated in-stream sediments in the watershed to engage the jurisdictions and federal regulators to explore the feasibility of additional remedial actions such as capping and/or dredging.	1.5.1 Develop a final Remedial Investigation Report (RI Report) based on the 700 samples already collected along the 9-mile tidal portion of Anacostia River between FY14 and end of FY15.	DOEE and federal partners		DOEE has completed all field activities for the Anacostia River sediment monitoring project. DOEE contractor has submitted a draft RI report to the Agency and is currently under review. Release of the RI report for public comment will be in early 2018. DOEE has held multiple meting engaging the public on the project, and

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					providing updated during 2017.
		1.5.2 Study brown bullhead tumors in tidal Potomac River and Anacostia River between 2014-2016, establish trends, if any, and to determine whether or not any established trends are local or regional;).	DOEE and FWS		FWS has completed the brown bullhead catfish study and DOEE is awaiting a draft to the final report for this 3rd round of data collection.
		1.5.3 Install gauging and sampling stations in NW Branch, NE Branch and Lower Beaver dam Creek. Sampling storms by collecting sediment samples using innovative USGS tested methods to calculate loads for six episodes.	DOEE and USGS		DOEE in contract with USGS continues to collect water-quality samples for both lowflow and stormflow samples at NE Branch, NW Branch, Beaverdam Creek
		1.5.4 Collect data to identify sources and characterize contributions from those sources, including CSOs, MS4 outfalls, streams, and upstream contributions.	DOEE and USGS		(BDC), Hickey Run, and Watts Branch; and 4 smaller non-gaged tributaries that flow through Washington, D.C. -- Nash Run, Ft. DuPont, Pope's Branch, and Ft. Stanton;
1.6	The EPA Region 3 HSCD Site Assessment program will continue to track sites that are being evaluated in the Chesapeake Bay	1.6.1 Ongoing tracking in SEMS of work in Ches. Bay Watershed Site assessment decision forms have been updated to include checkbox on whether site is in Ches. Bay Watershed,	EPA HSCD		Tracking is ongoing in the CB watershed. HSCD is still in the process

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	Watershed. Additionally, a GIS desktop tool is being developed to assist HSCD in identifying potential land sources of contamination in the watershed. This project is not limited to PCBs, but any type of contamination that could be migrating from CERCLA sites and affecting the watershed. The GIS tool will help to identify potential CERCLA sites and their proximity to environmentally sensitive areas and receptors to better focus on priority site evaluations. The use of EJ SCREEN will be evaluated to identify the location of such sites in areas with diverse populations.	and/or priority areas (Baltimore Harbor, Anacostia, Elizabeth River)			of developing GIS desktop tool.
		Site Assessment Mapper (SAM) GIS tool is completed and ready for use – EJScreen is a data layer in SAM	EPA HSCD, TCW		
		1.6.2 Provide information to TCW for potential GIS mapping on CERCLA NPL sites in the watershed that may be undergoing PCB remediation.	EPA HSCD		
1.7	The HSCD Site Assessment Program will conduct work share meetings with our State counterparts once per year to determine who will be the lead agency for further investigation of any potential PCBs sites that are on the active sites list.	1.7.1 During yearly workshare meeting, TCW workplan will be a discussion point at the meetings and will use the initiative in the prioritization of sites to be evaluated in the CA 1.7.2 Also, other sites identified in #10 below or by other methods in trackdown studies, etc. may be better addressed under State VCP or other State programs. This will also be discussed at workshare meetings.	HSCD, State Site Assessment Counterparts		Pending source discovery effort
1.8	HSCD and TCW will continue to evaluate sites to identify industries or processes that used PCBs. Once this list is generated, the CERCLA, Brownfields, and RCRA programs can better focus resources on identifying and investigating these types of sites. As significant sources of PCBs, or other contaminants that	1.8.1 Identification and mapping of potential industries that historically used PCBs in the watershed	HSCD, TCW, TSCA		
		1.8.2 Discuss potential PCB sources with TCW and TSCA (e.g., power plants, railroad maintenance yards, etc.)	HSCD, TCW, TSCA		
		1.8.3 Identify locations of industries within the watershed that may be potential PCB sources	HSCD		

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	<p>are migrating into the watershed from contaminated land sources are discovered, HSCD will share this information as part of the progress monitoring of this strategy. Additionally, if there are potential land sources that other programs have found, HSCD can investigate those potential sources through coordination with the appropriate authority.</p>	<p>1.8.4 Obtain information on PCB hotspot areas within the watershed and try to correlate CERCLA sites or other sites identified from above with those hotspots.</p>	<p>HSCD, TCW</p>		
		<p>1.8.5 Use information and data generated from above to pre-screen and prioritize sites to determine whether further assessment is needed and by whom.</p>	<p>HSCD, TCW</p>		
<p>1.9</p>	<p>The EPA R3 NPDES Permits Branch will continue to address PCBs through the CWA framework. Where waters have been identified as impaired and a local TMDL has been established creating WLA for point sources, the NPDES Permitting program will ensure that permits are consistent with the TMDL. The NPDES Permitting Program will draft and review permits with a focus on ensuring that PCB WLAs are clear and enforceable. The NPDES Enforcement Program, through state oversight and its independent compliance monitoring and enforcement authorities, will ensure that permit requirements are met. If a permittee is in non-compliance with its compliance obligations, EPA will take timely and appropriate action, including exercising its enforcement authority, to ensure that the permittee returns</p>	<p>1.9.1 The NPDES Permitting Program will draft permits with a focus on ensuring that PCB WLAs are clear and enforceable and consistent with the TMDL.</p>	<p>EPA R3 NPDES Permits Branch</p>		<p>Ongoing</p>
		<p>1.9.2 The NPDES Permitting Program will review permits developed by the jurisdictions with a focus on ensuring that PCB WLAs are clear and enforceable and consistent with the TMDL.</p>	<p>EPA R3 NPDES Permits Branch</p>		<p>Ongoing</p>
		<p>1.9.3 The NPDES Enforcement Program, through state oversight and its independent compliance monitoring and enforcement authorities, will ensure that permit requirements are met. If a permittee is in non-compliance with its compliance obligations, EPA will take timely and appropriate action, including exercising its enforcement authority, to ensure that the permittee returns to compliance in an expeditious manner.</p>	<p>EPA R3 NPDES Permits Branch</p>		<p>Ongoing</p>

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	to compliance in an expeditious manner.				
1.10	The EPA R3 Land and Chemicals (LCD) Toxics Program Branch will continue to ensure compliance with PCB TSCA regulations through its PCB inspection and enforcement program. Inspections will be targeted based on potential for releases, cumulative burden on EJ communities, or permitting. The R3 Toxics Program Branch will also respond to on tips/complaints that involve potential for illegal disposal and significant risk.	1.10.1 In 2016 and 2017, the EPA R3 LCD Toxics Program will perform inspections at facilities within the R3 states based on potential for PCB releases, cumulative burden on EJ communities, or permitting. The R3 Toxics Program Branch will also respond to on tips/complaints that involve potential for illegal disposal and significant risk.	EPA Region 3 Land and Chemicals Devision		There were 2 inspections at Aberdeen and Delmarva stations in 2016-2017, and more planned for 2018
1.11	The EPA R3 LCD Office of Materials Management will continue to partner with the Maryland Department of Environment to oversee the PCB clean up at the Lockheed Martin plant located in Middle River, Maryland. The Middle River facility, which is located on Cowpen Creek, is considered to be a major contributor to PCBs in the Bay. Phase 2 of the clean-up is commencing.	1.11.1 Overall performance target is completion of remedial actions specified in the Feasibility Study approved by MDE and EPA Region III. Incremental steps include permit applications, approvals, mobilization, sediment removal, confirmatory sampling, in situ treatment amendment application, post-closure bioaccumulation monitoring, and a 5-year review submittal	Lockheed Martin; MDE; will require EPA approval of a Risk Based Disposal Approval Application (RBDAA)		Upal Ghosh and UMBC researchers were involved in carbon amendment work for use in remediation activities. Tech decisions for remediation may be useful as case studies to inform other remediation activities (e.g. Anacostia)

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1.12	The Chesapeake Bay Commission will work collaboratively with the Bay Program partners to identify legislative, budgetary and policy needs to advance the goals of the Chesapeake Watershed Agreement.	1.12.1 CBC will, in turn, pursue action within our member state General Assemblies and the United States Congress. See CBC Resolution #14-1 for additional information on the CBC's participation in the management strategies.	CBC		
Management Approach 2: Education and Awareness					
2.1	Develop PMP guidance document for the control and reduction of PCBs in NPDES regulated stormwater and wastewater including an inventory of stormwater BMP options. This document would provide guidance to all Bay jurisdictions in implementing PCB load reductions established for dischargers through local TMDL development while recognizing the need for flexibility in PMP design. Develop guidance for unregulated sources of PCBs for use in developing implementation plans under TMDLs.	2.1.1 Contingent upon completion of VA DEQ's work to evaluate and assess cross-jurisdiction applicability	VA DEQ (The document will be Virginia Specific, but can serve as a prototype for a larger effort)		Still important to pursue, working to free up staff resources to keep developing materials for draft PMP guidance.
2.2	Working with local government and non-profit organizations, the TCW will inform the public regarding risks from consuming contaminated fish by developing communications materials and corresponding procedures for their dissemination throughout the targeted communities.	2.2.1 Secure GIT Project funding.	Diversity Action Team		GIT Project funding was awarded in early 2016 Release of first phase (poster/infographic) expected early 2018
		2.2.2 Inventory existing approaches to issuing fish consumption advisories and study effectiveness of and compliance with those advisories in order to develop enhanced tools	Project award recipient in coordination with DAT and TCW		

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Action #	Description	Performance Target(s)	Responsible Party (or Parties)	Geographic Location	Expected Timeline
		2.2.3 Test the new tools and work on optimization	Project award recipient in coordination with DAT and TCW		
		2.2.4 Implement and disseminate new tools in order to explore the extent to which diverse populations are located in areas where fish advisories are being issued, using EPA's EJSCREEN tool.	Bay Program partners		
2.3	Compile education materials regarding existing procedures and best practices for containment and prevention of release of PCBs.	2.3.1 Identify potential resources	TCW		FCA infographic poster in final stages of development. Will be published and distributed through the watershed in 2018.
		2.3.2 Compile education materials			

Management Approach 3: Voluntary Programs

3.1	Coordinate a voluntary action program to reduce transformers and other PCB containing equipment (e.g., fluorescent light ballasts). Include those classified as PCB free (less than 50 ppm) Provide to program participants information on remediating PCB contamination on-site from historical releases of these transformers and use EPA's EJ SCREEN tool to help identify where such equipment is located in areas with diverse populations.	3.1.1 Identify a project lead	TCW		Have RFP out for GIT funded project to do a feasibility study. After awards are given, work will begin and project will be completed by end of calendar year 2018.
		3.1.2 Estimate location and volume of PCB-containing equipment	Contingent upon available resources		
		3.1.3 Estimate costs of replacing PCB-containing equipment	Contingent upon available resources		
		3.1.4 Identify potential incentives and present summary of cost information to land owners	Contingent upon available resources		
		3.1.5 Obtain commitment from land owners to voluntarily replace PCB containing equipment with consideration to include activities in areas with diverse populations			

Management Approach 4: Science

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Action #	Description	Performance Target(s)	Responsible Party (or Parties)	Geographic Location	Expected Timeline
4.1	Refine and improve understanding of PCB sources to inform the Conceptual Model of PCB fate in the environment	4.1.1 Complete information gathering and develop a guidance document on best practices for effective implementation of PCB track down studies in the TMDL context	TCW		Further work on trackdown study ongoing. Possibility of a PCB consortium on trackdown and resources in fall 2018 in coordination with Baltimore Urban Waters Partnership
		4.1.2 Communicate results of completed research study investigating the PCB content of wastewater biosolids and effluent in an urban WWTP. Ongoing studies of fat-oil-and-grease (FOG) deposits as potential source of PCBs in aging gray infrastructure.	UMBC USGS		2018 briefing of completed WWTP study, ongoing study will be briefed once complete 2020
4.2	Inform status and changes in environmental conditions through the use of the 1668 congener-based analytical method, communicate lessons learned from innovative monitoring devices, and assess changes over time through the TMDL implementation plan progress	4.2.1 Identify barriers and opportunities related to more frequent use of EPA 1668 for contaminated sites, wastewater and regulated and unregulated stormwater dischargers as a screening tool (as is underway in VA) or for a targeted subset of permittees.			
		4.2.2 Encourage use of the high-sensitivity congener-based methods to analyze PCBs to ensure that PCB sources are being characterized accurately when such characterization can help with source identification			
		4.2.3 Communicate innovative monitoring tools for PCB sampling (such as high-volume suspended sediment, diffusion samplers, and mussels as an indicator of bioaccumulation) as part of synthesis report of PCB TMDL workshop	USGS		2018

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		4.2.4 Inventory and update TMDL implementation plans and monitoring progress, (methods used) as part of collaborative Confluence site	TCW; BUWP, USGS		2018
4.3	BMP Effectiveness for removal of Toxic Contaminants	4.3.1 Communicate results of project that investigated amount of PCB reduction across range of BMPs, and their association with land use and industrial sources	Chesapeake Stormwater Network and TCW		
		4.3.2 Explore feasibility of including qualitative scoring tools into BMP implementation scenarios in Phase 6 CAST	EPA		2018-2019
		4.3.3 Collaborate with other source sector groups to identify projects and topics for co-benefit reduction of PCBs with nutrients and sediment reductions.	TCW		2018-2019
		4.3.4 Investigate the impact of Stormwater Best Management Practices (BMPs) on PCB loadings to waterways).	MDE		2018-2019
		4.3.5 Communicate ongoing results of the investigations of PCB reduction in biofiltration and enhanced of media in stormwater controls to promote removal of PCBs; include summary in synthesis report of PCB TMDL workshop	UMCP, UMBC, USGS		
		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 (e.g., assessment of data needs for CAST)	TCW		2018-2019
Management Approach 5: PCB Consortium					
5.1	Explore the value and feasibility of creating and sustaining a broader scale forum for collaboration (e.g. a consortium) on PCB TMDLs that are	5.1.1 Form an exploratory team Collect information about the role for a consortium and expected assistance to be provided to TMDL implementers.	TCW		December 2019

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	in place and under development across the watershed	Estimate the cost of a consortium Evaluate other models (e.g. Chesapeake Conservancy) for methods of funding one or more part-time or full-time positions to manage the operations of the consortium. Prepare a report with jurisdiction input (after WIP III draft in April 2019) that summarizes options, costs and means of sustaining a collaborative forum.			
5.2	Present the findings from 5.1 above to the CBP Management Board for a partnership decision on whether to invest in a new collaboration forum or other new approaches to foster collaboration	5.2.1 Deliver a presentation of findings and determine next steps, if any, from consensus-based decisions by the CBP as to forming a consortium or other actions.	TCW		March 2020