

Chesapeake Bay PCB Story Map (<http://arcg.is/1MxTvgm>)

1. PCB Impairments

Polychlorinated biphenyls (PCBs) have proven to be a nearly ubiquitous class of pollutants across the Chesapeake Bay watershed. PCBs were widely used during the twentieth century as an insulating fluid in electric equipment such as transformers, ballasts and capacitors and in many instances PCBs remain in working electrical equipment. Other sources include paints, caulks and emissions from industrial processes. Banned in 1979, PCBs remain biologically-available pollutants and continue to be found in our waterways as they are slow to degrade. Because of their chemical structure, PCBs accumulate in fish and can have implications for human health when contaminated fish are consumed.

The Clean Water Act (CWA) sets an overarching environmental goal that all waters of the United States be “fishable” and “swimmable.” More specifically, it requires states and the District of Columbia to establish appropriate uses for their waters and adopt water quality criteria that are protective of those uses. The CWA also requires that every two years jurisdictions develop – with EPA approval – a list of waterways that are impaired by pollutants and do not meet water quality standards. For those waterways identified on the impaired list, a total maximum daily load (TMDL) must be developed. A TMDL is essentially a “pollution diet” that identifies the maximum amount of a pollutant the waterway can receive and still meet water quality standards.

Chesapeake Bay jurisdictions have set water quality standards to protect the human health and aquatic life uses of their waters, which include numeric criteria for PCBs. The states have monitored their waterbodies for PCBs using water column, sediment and fish tissue analyses and report them as impaired when PCB criteria are exceeded. After a waterbody is impaired, the EPA guidance recommends the state develop a TMDL in 8-13 years.

The map to the right shows waterbodies that are impaired for PCBs in the Chesapeake Bay watershed including those where TMDLs have already been developed. These impairments are based on where the states have monitored for PCBs and criteria are exceeded. A TMDL is a plan to meet water quality standards and does not mean a waterbody is no longer impaired. Rather, implementation activities are planned or ongoing and further monitoring data is needed to show that water quality standards are met.

To view more information about the work being done to address PCB impairments, click on Section 2.

2. PCB TMDLs as of 2015

The Bay jurisdictions have been developing local PCB TMDLs for over fifteen years. These TMDLs vary in scope, from small tributary watersheds to large, multi-jurisdictional TMDLs. For example, in 2007, DC, Maryland, and Virginia developed a TMDL for the tidal portion of the [Anacostia and Potomac Rivers](#), which included portions of each jurisdiction. While there is not a PCB TMDL for the entire Bay watershed, implementation of local PCB TMDLs can have positive water quality impacts for the watershed and tidal Bay.

PCB TMDLs also differ with regards to the endpoint that is set to achieve water quality goals. All Chesapeake Bay jurisdictions have numeric water quality criteria for PCBs and TMDLs must be protective of those criteria. Some states utilize an endpoint derived from the concentration of

PCBs found in fish tissue. In those cases, the water quality target is calculated using a bioaccumulation factor. In a multijurisdictional TMDL with varying WQS, the more stringent WQS will apply for the TMDL endpoint. Regardless of the endpoint that is used, PCB TMDLs generally require very high reductions to existing sources.

3. PCB TMDLs Planned for Development

There are a number of TMDLs that are currently being developed for PCBs throughout the Bay watershed. These TMDLs require PCB monitoring, modeling, and public engagement, which can take years from the time a TMDL is initiated to when it is approved by EPA. For more information on an individual TMDL, see the contact information for the applicable jurisdiction or visit the state's website.

4. PCB Impairments without Existing or Planned TMDLs

At the time this map was developed, PCB impairments remain across the Bay watershed. In 2013, EPA introduced "[A Long-Term Vision for Assessment, Restoration and Protection under the Clean Water Act Section 303\(d\) Program](#)," which provides flexibility in the tools states use to address impaired waters. The first option would be to develop a TMDL. The schedule for when this would occur would depend on how highly the state prioritizes addressing the impairment. The second option would be for the state to pursue a TMDL alternative, which would not have the same regulatory requirements as a TMDL and would target implementation activities. The third option would be for the state to re-monitor the waterbody to determine whether or not it is still impaired. Whatever the chosen approach may be, PCB impairments provide opportunities for future work within the Bay watershed.