

Arlington County Total Maximum Daily Load Action Plan for *Polychlorinated Biphenyl (PCB)*

Arlington County Municipal Separate Storm Sewer System (MS4) Permit VA0088579 (2021-2026 Permit Cycle)

Original Plan Approved by the Virginia Department of Environmental Quality: June 2016

Updated Plan submitted: November 29, 2022

Revised Updated Plan submitted: October 31, 2023



Table of Contents

Introduction.....	1
PCBs in the Environment.....	3
Assessment of County Facilities for Potential Sources of PCB Loading.....	4
Arlington County Trades Center	4
Long Bridge Park	7
Other Potential Non-Significant Sources in Arlington County	9
Roadways and Parking Lots	9
PCB Transformers and Energy Substations	9
Management Strategies for Reducing PCB Loading	10
Legal Authorities Applicable to PCB Loading Reduction	10
WPCP PCB Pollution Minimization Plan.....	10
Street Sweeping.....	11
Pollution Prevention Protocols for Street and Parking Lot Maintenance	11
Stormwater Infrastructure Inspection & Maintenance Program.....	11
Stormwater Management.....	11
Implementation of Stormwater Management Facilities & Retrofit Projects.....	12
Maintenance of Stormwater Management Facilities.....	12
Arlington County Trades Center Stormwater Pollution Prevention Plan Implementation.....	13
Integrated Spill Prevention, Control and Countermeasures and Hazardous Materials Management Plan	13
Implementation of Other High Priority Municipal Facility SWPPPs.....	13
Construction Site Erosion and Sediment Control (ESC) / SWPPP Inspections	13
Department of Environmental Services Construction Standards & Specifications.....	14
Review of Virginia Pollutant Discharge Elimination System (VPDES) Permits.....	14
Household Hazardous Waste Collection Program.....	14
Collection Events – E-CARE (Environmental Collection and Recycling Event)	15
Solid Waste Bureau (SWB) Scrap Metal / Appliance Collection Program.....	15
County Facility Renovation & Waste Disposal	15
Employee Training.....	15
High Risk / Commercial Facility Inspections.....	15
Public Education and Outreach.....	16
Schedule of Implementation and Anticipated Actions for 2021-2026	17
WPCP PCB Pollution Minimization Plan (PMP).....	17

Solid Waste Bureau (SWB) Scrap Metal / Appliance Collection Program.....	18
County Facility Renovation & Waste Disposal.....	18
Employee Pollution Prevention Training.....	18
High Risk / Commercial Facility Inspections.....	18
Public Education and Outreach.....	18
Methods for Assessment of Effectiveness.....	18
Summary.....	19
References.....	20
Appendix A – Summary of Public Comments.....	21

Introduction

In accordance with its Virginia Stormwater Management Program – Municipal Separate Storm Sewer System (MS4) Phase I Permit (VA0088579), Arlington County is required to develop and implement Total Maximum Daily Load (TMDL) Action Plans for impaired streams where a TMDL assigns a wasteload allocation that has been approved by the State Water Control Board.

The Polychlorinated biphenyl (PCB) TMDL for Tidal Portions of the Potomac and Anacostia Rivers in the District of Columbia, Maryland, and Virginia (PCB TMDL) was developed by the United States Environmental Protection Agency (EPA) in October 2007. The PCB TMDL was adopted by the Virginia State Water Control Board in April 2008. While the Potomac River PCB TMDL assesses the tidal sections of the Potomac River and its tributaries, the TMDL only established wasteload allocations for the direct drainage portions of the MS4 permitted jurisdictions.

The objective of the regional PCB TMDL was to ensure that the “fish consumption” use is protected in each of the impaired waterbodies. This is done by identifying maximum allowable loads of PCBs that would meet the applicable water quality standards and result in fish tissue PCBs concentrations that do not exceed jurisdictional thresholds.

The Virginia Department of Environmental Quality ([DEQ](#)) began collecting fish tissue in state waters in 1993. Elevated PCB concentrations found in fish tissue resulted in the Virginia Department of Health (VDH), Division of Health Hazards Control issuing the first fish consumption advisory in 1999. Since that time, [advisories](#) have grown in number and size as more data have been collected. Advisories limit consumption of certain species of fish to no more than two meals per month and bans the consumption of certain species that are greater than a specified size limit (18-inches). All PCB fish consumption advisories are added to Virginia’s Clean Water Act list of impaired waters and, therefore, require the development of a TMDL (DEQ 2021).

Arlington County developed a PCB TMDL Action Plan as part of its previous MS4 permit program (2013-2018 plus three years administrative continuance). The plan was submitted to the DEQ in June 2015 and approved by the Department in June 2016 following multiple meetings between DEQ and the County.

This updated PCB TMDL Action Plan continues to focus on reducing potential PCB loadings from controllable sources by implementing pollution minimization and management practices at County-owned properties and facilities to the maximum extent practicable. This approach is consistent with DEQ’s previous April 2015 local TMDL guidance memo, which recommends a pollutant minimization approach for PCBs. The efforts described in this Action Plan are part of a long-term, comprehensive, and multi-pollutant watershed management effort that will continue to be implemented over multiple MS4 permit cycles. The County did not identify any significant sources of PCBs that could discharge to the County’s MS4.

This updated Plan has been developed in accordance with the requirements set forth in Part 1.E (a, b, c, and e) of the County’s 2021-2026 MS4 permit.

“e) Polychlorinated biphenyl (PCB) TMDLs.

1) For each PCB TMDL action plan, the permittee shall include an inventory of potentially significant sources of PCBs owned or operated by the permittee that drains to the MS4 that includes the following information:

- (a) Location of the potential source;
- (b) Whether or not the potential source is from current site activities or activities previously conducted at the site that have been terminated (i.e., legacy activities); and
- (c) A description of any measures being implemented or to be implemented to prevent exposure to stormwater and the discharge of PCBs from the site.

2) If at any time during the term of this permit, the permittee discovers a previously unidentified significant source of PCBs within the permittee's MS4 regulated service area, the permittee shall notify DEQ in writing within 30 days of discovery."

Information excerpted from the County's MS4 Permit (Attachment A) below shows the Polychlorinated biphenyl (PCB) TMDL for tidal portions of the Potomac River and Anacostia Rivers in the District of Columbia, Maryland, and Virginia – which includes part of Arlington County.

Attachment A: Total Maximum Daily Load Reports with Wasteload Allocations to VA0088579 - Arlington County						
TMDL Project	TMDL Pollutant(s)	Final Report	EPA Approval Date	SWCB Approval Date	Wasteload Allocation	Consolidated Wasteload
TMDL Report: Potomac River Total Maximum Daily Loads of Polychlorinated Biphenyls (PCBs) for Tidal Portions of the Potomac and Anacostia Rivers in the District of Columbia, Maryland, and Virginia						
Potomac River	PCB	Report is available for review, please see contact information below. ¹	10/31/2007	4/11/2008	See TMDL Report	Yes

¹Report: Total Maximum Daily Loads of Polychlorinated Biphenyls (PCBs) for Tidal Portions of the Potomac and Anacostia Rivers in the District of Columbia, Maryland, and Virginia
<https://www.deq.virginia.gov/home/showdocument?id=11429&t=637692156079770000>

The 2007 Potomac Watershed PCB TMDL study states: "The U.S. EPA recognizes that available data and information are usually not detailed enough to determine WLAs for NPDES regulated stormwater discharges on an outfall-specific basis" (U.S. EPA, 2002). Therefore, in the tidal Potomac watershed, loads from the regulated NPDES stormwater outfalls will be expressed as a single stormwater WLA for each impaired waterbody (Interstate Commission on the Potomac River Basin, 2007).

Further, the PCB TMDL stipulates that loads should be expressed as Best Management Practices (BMPs) or other similar requirements, rather than as numeric effluent limits.

Consistent with the TMDL, this updated Action Plan will focus on implementation of pollutant minimization and stormwater best management practices to be taken and/or are currently being implemented throughout the County to reduce PCB loading from controllable sources—with a focus on County-owned lands. This approach was discussed during a November 14, 2014, conference call with staff from the DEQ Northern Regional Office.

It must also be emphasized that, in general, PCB-based use impairments are from the distribution and ongoing redistribution of historical PCB dischargers and spills, and the impairments are not ongoing releases such as those for which the TMDL process was designed.

Many of the practices will be undertaken in coordination with efforts being implemented as part of the County's Chesapeake Bay TMDL and Bacteria (*E. coli*) TMDL Action Plans. These plans are a component

of the County's comprehensive watershed management effort. A summary of implementation actions will be documented in the County's MS4 Annual Reports.

In accordance with part 1.E.2.f, the public was provided the opportunity to comment on the initial draft plan for a minimum of fifteen days to meet the local TMDL action plan requirements. The plan was available to review on the County's website ("Bacteria & PCB TMDL Actions Plans") starting in late October 2022. Online public comment forms were made available from November 1 through November 15, 2022. Various media / outreach mechanisms were used to notify the public. A summary of public comments and the County's responses are provided in Appendix A.

PCBs in the Environment

PCBs are a group of synthetic organic chemicals (chlorinated hydrocarbons) consisting of carbon, hydrogen and chlorine atoms. They have a range of toxicity. Between 1929 and 1979, PCBs were manufactured and widely used for a variety of purposes. Due to their non-flammability, chemical stability, high boiling point and electrical insulating properties, PCBs were used in hundreds of industrial and commercial applications. They were primarily used as coolants and insulators in electrical systems such as those found in transformers, capacitors, hydraulic equipment, and fluorescent light ballasts. PCBs were also incorporated in some plasticizers in paints and adhesives as well as in hydraulic fluids, heat transfer fluids, dyes, pigments, and lubricants.

PCBs are considered a legacy pollutant. Even though the manufacturing of PCBs was banned in 1979, PCBs are still widespread throughout the environment. PCBs are persistent and do not readily break down. PCBs entered the environment as a result of past activities relating to the manufacture, use, and disposal of PCBs as well as accidental spills and leaks from products and equipment containing the compound. Additionally, fluorescent lights, electrical devices, and appliances that contain PCBs may still be present in older buildings and facilities that have appliances, lighting, and materials produced prior to 1979.

PCBs can still enter the environment today from hazardous waste sites, improper industrial or commercial waste disposal, and/or leaks from products such as old appliances, equipment, and electrical transformers (EPA 2021).

A study undertaken by the City of Spokane Wastewater Management Department found that PCBs may be present in a variety of products such as caulking, traffic marking products, road paint, deicers, antifreeze, pesticides, motor oil, fuel, asphalt related products, hydro-seed, pipe material, fire-fighting foam, cleaners and degreasers, as a result of the manufacturing process (City of Spokane, 2015). Many of these products contain less than 50 parts per million (ppm) of PCBs and therefore are not considered "PCB-contaminated" under the Toxics Substances Control Act (40 CFR 761.3).

Because of their stability and the fact that they do not readily break down, PCBs can persist in the environment for a significant period. PCBs have a relatively low vapor pressure that reduces their potential to volatilize. They are also nonpolar and therefore are only slightly soluble. This non-polarity and low solubility make PCBs bind strongly to sediment.

PCBs can enter surface waters as a result of atmospheric deposition of particulate matter (a significant source not easily controlled) and contaminated sediment carried in stormwater runoff. Legacy PCBs in

sediment on the bottom of stream channels can also be recirculated during storm events. Reducing sediment loading reduces the potential for PCBs entering the MS4 and surface waters.

The PCB Strategy for the Commonwealth of Virginia, published in October 2004, establishes the general strategy and outlines the regulatory framework and state initiatives that Virginia will use to address PCB impaired waterbodies. The efforts in the strategy focus on the most critical sources as identified in section VII (3) of the PCB TMDL because of the substantial differences in magnitude of the different categories of sources. In particular, as shown in the TMDL analysis, atmospheric deposition is a significant source of PCBs in the Potomac watershed. Although the TMDL analysis does not specifically quantify the contribution of atmospheric deposition on land, TMDL implementation evaluated this significant source and its impact on point sources including regulated stormwater (ICPRB 2007).

Assessment of County Facilities for Potential Sources of PCB Loading

This section discusses potential sources of PCB loading to the MS4 and surface waters from County owned and operated facilities. The County has not identified any significant sources of PCBs that could discharge to its MS4.

A historic use inventory was conducted to identify County owned sites where PCBs were historically stored or transferred. Two sites were identified:

- Arlington County Trades Center, old Equipment Building (4250 28th Street S)
- Long Bridge Park, formerly the North Tract, a commercial-industrial area (475 Long Bridge Drive)

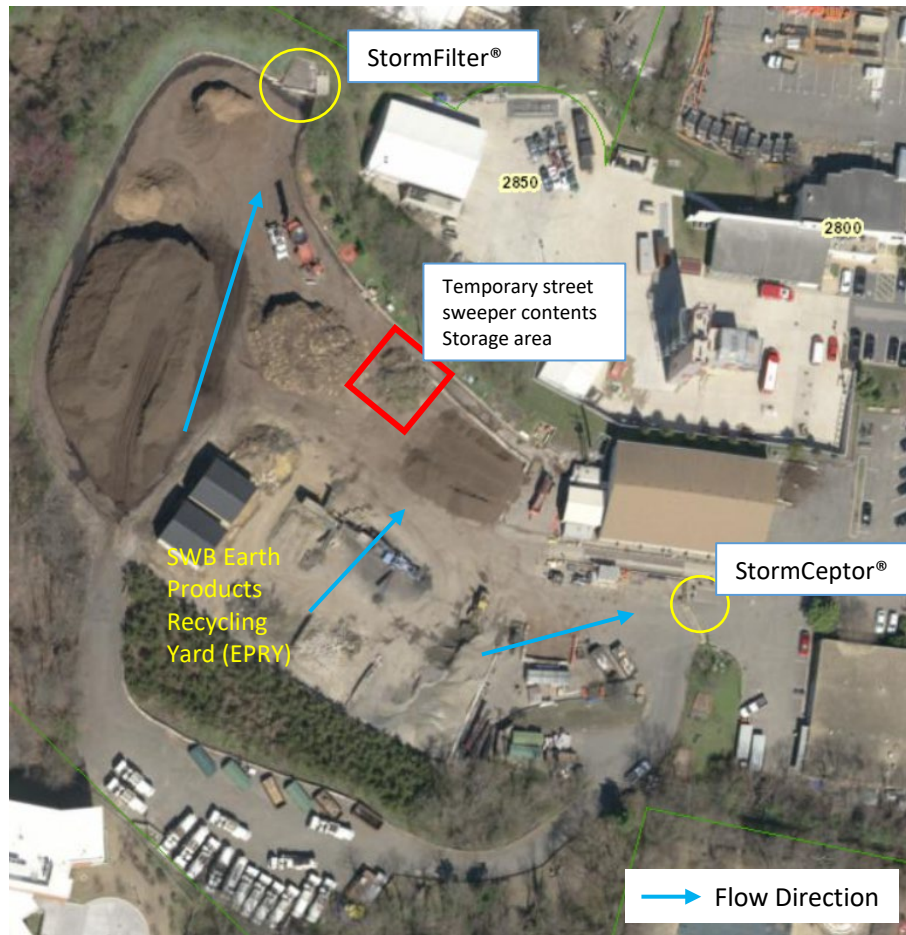
Neither of these sites are identified as significant sources of discharges of PCBs to the MS4.

Arlington County Trades Center

The Arlington County Trades Center is located at the intersection of South Arlington Mill Drive and South Taylor Street in the southeastern portion of the County. The Trades Center is the staging site for the County's municipal operations including vehicle and equipment repair, maintenance, cleaning, refueling, and storage; material and chemical storage; and earth products recycling and storage. The Trades Center plays an important role in ensuring necessary daily services and operations are carried out throughout the County. The facility covers approximately 39 acres and includes eight separate operation areas.



The Department of Environmental Services (DES) Solid Waste Bureau (SWB) manages the County's residential refuse collection and recycling programs. The SWB also oversees and manages the Earth Products Recycling Yard (EPRY). A number of materials are stored and processed at the EPRY. Soil, yard debris, mulch, stone, crushed asphalt, and crushed concrete are temporarily stored at this location. Sediment and debris, which may contain low levels of PCBs, are collected from roadways by the County's street sweepers and temporarily stored at the EPRY, prior to being taken to the certified landfill outside of the County. Given the small volumes of materials and temporary storage, this site could be a potential minor source of PCB loading.



The SWB formerly operated a white goods collection program. White goods (appliances) were brought to the Trades Center. The SWB operated a PCB capacitor removal program until early 2000. Capacitors from appliances and electrical equipment were removed and placed in 55-gallon steel drums inside two bays at the Old Equipment Building located at 4250 South Taylor Street. The secure bays had concrete floors with no floor drains. The drums were picked up by a certified waste hauler for transport to a commercial storage and disposal facility. During the time PCBs were stored at the old Equipment Building, there were no reported leaks or spills.

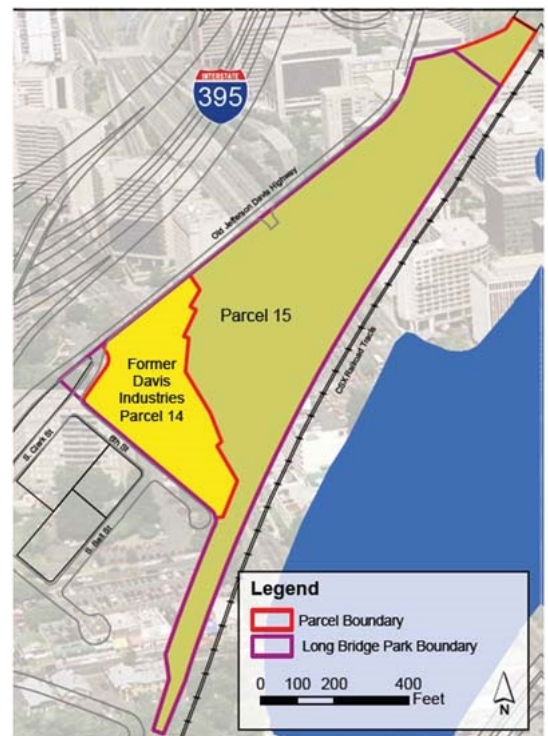
A Hazardous Waste / Materials Management Implementation Plan was prepared for the Arlington County Trades Center in October 1997. The plan covered all aspects of handling, storage, disposal of hazardous wastes at the Trades Center as well as training, and record keeping procedures. This plan covered the PCB capacitor collection program that was in place at the time. Annual training (HAZCOM and SPCC) was provided to applicable employees when the PCB capacitor collection program was in operation. Employees were trained in proper handling of equipment and materials, personal protection, spill control, reporting spills, tracking and logging materials, and keeping manifests and other documents related to handling, transport and final disposal of materials. No spills or leaks were reported at the storage area. This management plan was updated to reflect changes in operations at the Trades Center. Information on the PCB capacitor collection program was removed once the program ceased.



Long Bridge Park

[Long Bridge Park](#) (formerly referred to as the North Tract and named after the first Long Bridge that spanned the Potomac River in 1809) is located in the southeast portion of the County. The site previously consisted of two parcels: the Davis Industries Parcel 14 and the Arlington Industrial Area Parcel 15. The area was a former industrial site that underwent corrective action through DEQ’s Voluntary Remediation Program (VRP) and returned to productive use as a public park. The 36-acre site is situated between the main north-south railroad corridor and I-395/US Route 1 highways. To the south is Crystal City; to the west, the Pentagon; to the east, the Roaches Run Waterfowl Sanctuary, George Washington Memorial Parkway, Washington National Airport, and the Potomac River (PDD, 2013).

This riverfront property has a long history of use and development – the area has been dredged, filled, and redeveloped numerous times by multiple transportation, commercial, and industrial activities, and large federal projects, notably construction of the George Washington Memorial Parkway and the Pentagon (PDD 2013).



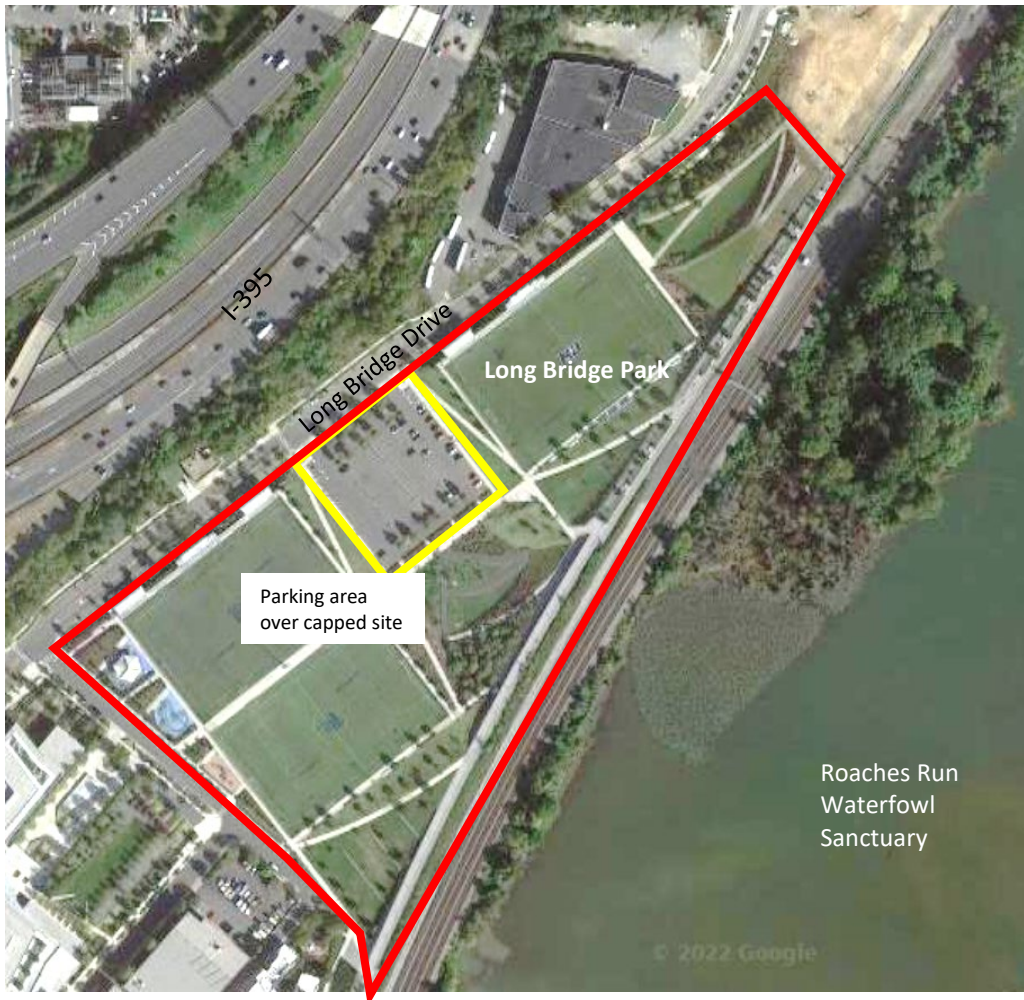
By the late-20th century, the area between the highway and the railroad tracks, formerly referred to as the North Tract, was an aging commercial-industrial strip occupied by storage companies, warehouses, and operations such as a service station, a concrete batch plant, parking lots, a trucking company, and the Davis Industries scrap yard (items disposed of at this location included batteries, appliances, and scrap metal). As a result of historic activities, soil at the site was contaminated with heavy metals and PCBs.

Reclamation of the area began in the early 1990s through a multi-party agreement to clean up the former Davis Industries, Inc. site. Voluntary Remediation Plans were implemented for the site and the following remediation efforts were undertaken:

- The most heavily contaminated area of the former Davis Industries site where scrap metal processing took place was covered with an asphalt cap. This area, adjacent to 6th Street South, was later covered by a two-foot layer of clean fill and two soccer fields were built on top of this area during the development of Long Bridge Park. The current parking lot, shown in the figure below, also serves as an impervious cap over an area with elevated lead levels that was also covered by two feet of clean topsoil (PDD 2013).
- On the remainder of the Long Bridge Park site, excavation, removal, and disposal of soils that had the highest concentrations of PCBs and lead that exceeded regulatory limits for contaminants were completed. Contaminated soils were hauled off site to a soil safe treatment and disposal facility.
- Treatment of moderately contaminated soils on site and incorporation of the soils into designated waste management units with on-site landscaped features were completed.
- Institutional controls, including deed restrictions, were adopted to prevent any use of groundwater on the site.

County acquisition of the area began in 2001. In 2006, Virginia DEQ issued a Certificate of Satisfactory Completion based on the condition of maintaining the cap and the no dig zone. Following this issuance, the site was zoned for recreational use. The County took final acquisition of the North Tract property in 2010. Long Bridge Park was developed on the site, as shown in the photo on the next page.

Additional information about the history of this site is provided in the “[Long Bridge Park Master Plan for Park and Recreation Facilities](#)” and the website, [Long Bridge Park: From Brownfield to Playing Fields](#).



Other Potential Non-Significant Sources in Arlington County

Roadways and Parking Lots

Sediment from construction activity, vehicle tracking, and sanding operations accumulate on paved surfaces such as roadways and parking areas. This sediment may be a potential source of PCBs due to atmospheric deposition. The County owns and maintains more than 375 miles of roads and multiple parking areas. Several major roadways in the County are owned and maintained by the Virginia Department of Transportation (VDOT), which can also be sources of PCB loading. There are also a number of Federal or privately owned and maintained roadways and parking lots throughout the County.

PCB Transformers and Energy Substations

According to EPA's online [PCB Transformer Registration Database](#), last modified on September 3, 2019, six records were listed for transformers containing PCBs in Arlington County. All six records were associated with Joint Base Fort Myer / Henderson Hall (JBMHH). JBMHH is a MS4 Phase II permitted facility and has its own PCB TMDL Action Plan. There were no records for any transformers at County owned or operated facilities or right of ways.

During a conversation with County staff, Dominion Energy’s Environmental Compliance Coordinator stated that older transformers that contained PCB have been replaced in Arlington County. There are a number of energy substations owned and operated by Dominion Power in the County.

Management Strategies for Reducing PCB Loading

There are a number of major challenges in reducing PCB loading from stormwater discharges. First, there are no PCB-specific stormwater management controls, with measured and documented effectiveness, to capture and treat PCBs from stormwater runoff. Even if there were such controls, it would be extremely difficult, and well beyond the scope of an MS4 program, to control atmospheric deposition of PCBs—a primary pathway. Additionally, as previously discussed, PCBs are a legacy pollutant and persistent throughout the environment.

With these challenges in mind, as well as the opportunity that results from the chemical nature of PCBs which binds them to soil particles, the County will employ a pollution minimization strategy implementing various practices focused on reducing sediment loading from controllable sources to address this pollutant of concern (POC). The components of this strategy are described below.

Legal Authorities Applicable to PCB Loading Reduction

The following sections of Arlington County Code provide directives that are applicable to reducing sediment loading to the storm drain system, and subsequently, surface waters to the maximum extent practicable.

County Code	Provisions
Chapter 26: Utilities, §26-7.B. and C.	Prohibits the discharge of unauthorized non-stormwater discharges to the storm drain system or surface waters.
Chapter 57: Erosion and Sediment Control	Requires erosion and sediment controls to prevent or minimize transport of sediment from land disturbing activities
Chapter 60: Stormwater Management	Requires construction controls and post construction stormwater management to reduce runoff and pollutants
Chapter 61: Chesapeake Bay Preservation	Requires Water Quality Impact Assessment for land disturbance in a Resource Protection Area (RPA)

In addition to the above requirements imposed by the County on various third parties, the County has legal authority to carry out its own actions as set forth in this Action Plan.

WPCP PCB Pollution Minimization Plan

The County’s Water Pollution Control Plant (WPCP) is a 40 MGD advanced wastewater treatment facility that discharges to the tidal section of Four Mile Run. The effluent discharge from the plant constitutes a major input to the stream at the outfall. As a condition of its current VPDES permit (issued December 1, 2019), the WPCP was required to develop a PCB Pollution Minimization Plan (PMP). The PMP was submitted to DEQ on November 25, 2020. The plan was revised and approved by DEQ on March 19, 2021. The PMP focuses on the identification of any significant sources of PCBs in the collection system and what actions or controls can be taken to reduce loading. The WPCP receives wastewater from two large industrial users, Washington National Airport and the Pentagon. The plant does not accept any

hailed industrial waste. The WPCP submits annual reports showing the progress in meeting the goals of its PMP.

Street Sweeping

Arlington County owns and maintains more than 65% of the roadways (~375 miles out of a total of ~571 miles) in the County. Arlington County's [street sweeping program](#) is a part of the County's commitment to protect local streams, the Potomac River, and the Chesapeake Bay. Street sweeping helps remove accumulated floatables, sediment, nutrients, waste, and other pollutants from streets and prevent these pollutants from entering the MS4 and local streams. Sediment control is particularly beneficial because of the association between PCB and sediment. Reducing sediment loading subsequently reduces PCB loads to surface waters. The County does not maintain private, state (VDOT), or federal owned and maintained roads.

The current permit cycle requires the County to sweep a minimum of 30,000 lane miles. The County's street sweeping program is divided into two components --residential and commercial sweeping. The residential sweeping program (currently 59 civic associations have been grouped into 14 street sweeping zones) is conducted annually between April and October. The commercial sweeping program targets high traffic / traveled roadways within the County. The County also conducts street sweeping in response to resident reports and accidents.

Pollution Prevention Protocols for Street and Parking Lot Maintenance

The County continues to implement its Pollution Prevention Protocols for Street, Road, Sidewalk, and Parking Lot Maintenance. This document provides information on the practices used by the County to minimize pollution discharges, including sediment, which may transport PCBs, from activities and operations associated with maintenance and repair of County owned roadways and parking lots. The protocols were updated in May 2022 and will continue to be updated as needed.

Stormwater Infrastructure Inspection & Maintenance Program

As part of the County's [Stormwater Infrastructure](#) Maintenance Program, the County inspects, cleans, maintains, repairs, and upgrades stormwater infrastructure on a scheduled basis. Cleaning infrastructure removes accumulated debris and sediment.

As required by the MS4 permit, a minimum of 500,000 linear feet of the MS4 will be inspected during the current permit cycle. 85,000 linear feet of pipe will be inspected by CCTV. Remote control carriage-mounted video cameras are inserted into a storm structure and travel through the pipe segment. The generated video is then analyzed to identify cracks, dislodged pipe joints, flow conditions and any other system characteristics.

A minimum of 10,000 storm structures will be inspected and cleaned during this permit term as part of the County's catch basin cleaning program. Cleaning out catch basins and other inlets removes debris and sediment thereby reducing PCB loads associated with the removed material.

Stormwater Management

As described in the County's MS4 Program Plan and Chesapeake Bay TMDL Action Plan, the County has an existing and comprehensive stormwater management program. This program includes regulation of development activity under Chapter 60 of the Arlington County Code as well as retrofits of existing developed land as part of the implementation of the County's adopted Stormwater Master Plan.

The Chesapeake Bay TMDL Action Plan documents significant nutrient and sediment reductions as a result of stormwater management facilities installed with development projects since the 2006 accounting baseline established by DEQ. These reductions are cross-referenced for this Action Plan. It is expected that these reductions will continue to occur with future development activity because most of this activity in Arlington is redevelopment. Documentation and sediment reduction computations will be provided in annual reports along with the updated 2nd permit cycle Bay TMDL Action Plan.

The Chesapeake Bay TMDL Action Plan also documents sediment reductions for in-place and planned watershed retrofit projects (e.g., green streets projects, Trades Center filtering systems, the Ballston Pond retrofit, Sparrow Pond retrofit, stream resiliency projects, etc.). As additional projects are completed, documentation and sediment reduction computations will be provided in annual reports along with the updated 2nd permit cycle Bay TMDL Action Plan.

Although PCBs are not a pollutant of concern for the Bay TMDL nor are removal rates for PCBs published in the Stormwater Clearinghouse or other DEQ guidance, the types of stormwater management facilities installed with development and watershed retrofit projects can reduce PCB loads as a result of runoff and sediment reduction. The Chesapeake Bay TMDL required reductions for sediment can serve as a general proxy for associated PCB reductions.

Implementation of Stormwater Management Facilities & Retrofit Projects

Arlington has constructed multiple types of stormwater management facilities (SWMFs) and retrofit projects throughout the County. There are currently over 190 public SWMFs throughout the County, including bioretention facilities, stormwater vaults, manufactured best management practices (BMP), green roofs, bioswales, permeable pavement, and cisterns. Green infrastructure reduces stormwater runoff and captures pollutants of concern (sediment, nutrients, bacteria), thereby reducing loading of these pollutants to the MS4 and surface waters. Similarly to SWMFs, stream resiliency and pond retrofit [projects](#) have the potential to reduce downstream sediment loads as a result of the significant sediment reductions that occur with these projects. The [Ballston Pond retrofit project](#) will manage runoff from approximately 450 acres of urban / suburban landscape.

A list and location of public stormwater management facilities completed since FY2018 is provided in the County's MS4 Annual Report. This list will be updated annually.

Maintenance of Stormwater Management Facilities

SWMFs require inspection and maintenance to continue to function as designed. Public SWMFs are inspected and maintained on an annual basis and in some cases more frequently to ensure accumulated pollutants such as sediment and trash are being removed and disposed of, and to ensure vegetation is healthy.

In addition to public facilities, there are over 6,000 private SWMFs throughout the County, including bioretention facilities, micro-bioretention systems, planter boxes, dry wells, infiltration systems, detention vaults, green roofs, cisterns, manufactured systems, and permeable pavement systems.

The County requires maintenance agreements for stormwater management facilities that have been installed per regulatory requirements, including those on individual residential lots. Private facilities are required to be inspected annually and maintained as needed. Facility owners must submit an inspection

form and photos to the County and provide documentation when needed maintenance is conducted. Information on how and who can conduct inspections is provided on the County's [website](#). The link to the website and online forms are provided in letters sent to property owners. Maintenance is required based on the findings of the inspections. [Maintenance guidance](#), including information fact sheets, videos, and list of maintenance contractors is provided online. Should a property owner fail to conduct an inspection or necessary maintenance, the County can choose to do the work and charge the owner.

Arlington County Trades Center Stormwater Pollution Prevention Plan Implementation

The Stormwater Pollution Prevention Plan (SWPPP) for the Trades Center continues to be updated and implemented. The Trades Center SWPPP provides information about the facility and operations that are conducted at the facility, identifies potential sources of stormwater pollutants, provides an inventory and maintenance schedule for the on-site stormwater management facilities, and identifies standard operating procedures and controls to minimize non-stormwater discharges and pollutant releases to the storm drain system and surface waters.

Several SWMFs are located throughout the Trades Center to treat stormwater runoff. SWMFs include StormFilters®, StormCeptors®, and Ultra Urban Filters®. Inlet protection devices and drain filter inserts are also in place in various locations throughout the facility that have been identified as having high pollutant loading potential.

Site inspections are conducted on a quarterly basis to ensure good housekeeping is being conducted and best management practices are being implemented to minimize pollutant loading to the MS4.

Integrated Spill Prevention, Control and Countermeasures and Hazardous Materials Management Plan

The Trades Center has an Integrated Spill Prevention, Control and Countermeasures Plan and Hazardous Materials Plan (Integrated Plan). The plan establishes standard operating procedures and identifies controls and measures to prevent spills or discharges of oil or other pollutants and to contain any spills before they reach a storm drain or stream.

Implementation of Other High Priority Municipal Facility SWPPPs

In addition to the Trades Center, there are five additional HPMFs within the County.

- North Side Salt Storage Facility (Old Dominion Drive and 25th Street North)
- 26th St N Leaf / Mulch Storage and Distribution Center (4628 26th Street North)
- Department of Parks and Recreation Nursery (4220 South Four Mile Run Drive)
- ART Bus Facility (2910 Richmond Hwy)
- ART Bus Storage Facility (1429 North Quincy Street)

SWPPPs have been developed for each of these County owned facilities, as required by the MS4 permit. The plans provide information on the various on-site stormwater management facilities as well as the good housekeeping and pollution prevention controls (e.g., proper waste management, covered storage, sweeping) that are implemented to minimize non-stormwater discharges and pollutant releases from the facilities. These facilities are inspected as specified in the respective SWPPP.

Construction Site Erosion and Sediment Control (ESC) / SWPPP Inspections

County construction inspectors check that Pollution Prevention (P2) plans required for County land disturbance permits are being implemented. The SWPPP requires erosion and sediment and pollution

prevention controls. These required efforts help to minimize the transport of sediment that may contain PCBs from land disturbing activities to the MS4 and surface waters.

The following language has been included in the County's pollution plan template, which references PCBs:

Watershed / Impaired Waters / Total Maximum Daily Load (TMDL) Information

This project site is in the Chesapeake Bay and Potomac River watersheds; TMDLs have been established for sediment, nutrients (nitrogen, phosphorus), and PCBs. A TMDL has also been established for bacteria in the Four Mile Run Watershed. Measures will be taken to minimize the discharge of these pollutants of concern to the storm drain system and surface waters.

For projects located in the Potomac River Watershed, measures will be taken to prevent /minimize the discharge of PCBs from the project site. Proper sediment controls and stabilization measures will be implemented. Debris and waste materials generated during demolition activities shall be properly disposed in accordance with local, state, and federal regulations.

Department of Environmental Services Construction Standards & Specifications

The County updated its [Construction Standards & Specifications Manual](#) in September 2020. A letter to industry was issued that included a summary of revised specifications and details. Section 01500, formerly titled, "Temporary Sediment and Erosion Control", was renamed "Erosion and Sediment Control and Pollution Prevention". The section was updated with detailed language and requirements for specific controls and pollution prevention measures to prevent unauthorized non-stormwater discharges to the MS4 and surface waters.

All non-stormwater discharges to the County's storm drain system, which includes the curb and gutter as well as the underground pipe network, or any open watercourse must comply with the conditions of the County's Virginia Stormwater Management Program, Municipal Separate Storm Sewer System (MS4) Permit. Examples of unauthorized non-stormwater discharges include but are not limited to, wash water, slurry runoff from saw cutting, discharges associated with vehicle, equipment, and/or material washing, concrete wash water, process water, waste water, leaks from portable lavatories, equipment, vehicles and/or waste receptacles. Only clear, uncontaminated stormwater discharges and/or permitted non-stormwater discharges (as specified in a Virginia Pollutant Discharge Elimination System (VPDES permit)) are allowed to be discharged to the storm drain system or surface waters. Contaminants, including but not limited to, volatile organic compounds, petroleum products, metals, PCBs, pesticides, and herbicides, shall not be discharged to the County's storm drain system.

Review of Virginia Pollutant Discharge Elimination System (VPDES) Permits

The County reviews information supplied with registration applications for Petroleum Contaminated Sites (VAG83) that are submitted to DEQ, including any associated groundwater studies and/or proposed treatment systems that will be implemented to treat groundwater prior to being discharged to the County's MS4 and surface waters.

Household Hazardous Waste Collection Program

The Water Pollution Control Plant manages the County's [household hazardous materials](#) (HHM) program, which provides for the safe collection, transport and disposal of HHM material. This program promotes citizen awareness regarding proper handling of HHM, reduces the amount of HHM in the

municipal solid waste stream, and limits the amount of HHM which could be improperly disposed of or released into the environment.

A study conducted by the City of Spokane Wastewater Division found that PCBs are present in low concentrations in a number of products, including paint, motor oil, antifreeze, deicers, and fuel. Having a comprehensive HHM collection program is an effective strategy to help ensure the public has a way to dispose of these products and materials properly.

Collection Events – E-CARE (Environmental Collection and Recycling Event)

The County hosts biannual [E-CARE](#) events where residents can safely dispose of HHM, bikes, electronics, small metal items, and other recyclable items. This program is intended to increase the likelihood that these items are disposed of properly by their owners. The County advertises these events in advance via various notification and outreach efforts.

Solid Waste Bureau (SWB) Scrap Metal / Appliance Collection Program

The DES Solid Waste Bureau Operations Unit manages a scrap metal / appliance collection program. Residents can request and schedule a curbside pick-up through the County's online request a service portal. Items are collected and transported by a County contractor to a private commercial recycling and disposal facility. Residents can also drop off scrap metal and appliances that do not contain Freon at the SWB Earth Products Recycling Yard. Items delivered to the EPRY are temporarily stored in a metal container. The items are picked up and transported to a private commercial scrap metal recycling and disposal company by a County contractor.

County Facility Renovation & Waste Disposal

Older County owned buildings may have PCB containing materials and items such as paint, caulk, light ballasts and pipes. If present, any PCBs in the majority of these items would be in concentrations less than 50 ppm and therefore are not considered "PCB-contaminated" under the Toxics Substances Control Act (40 CFR 761.3). Additionally, in accordance with Virginia code (9 VAC 20-81-630), derived from federal regulations (40 CFR 761.3), wastes that contain PCBs with concentrations between 1.0 ppm and 50 ppm are handled by the Virginia Solid Waste Program and can be disposed of in permitted sanitary landfills. As buildings are renovated, waste materials will be properly collected and disposed of at certified commercial waste disposal facilities outside of the County.

Employee Training

Stormwater pollution prevention training is conducted for County employees who work at HPMFs, conduct field work, and/or oversee construction projects. The training includes information on recognizing and reporting non-storm discharges and spills as well as implementing pollution prevention controls to prevent discharges of potential pollutants such as sediment, hydrocarbon, and chemicals from project sites to the County's MS4 and surface waters. Proper waste management and disposal are also covered. Spill response training is also done in conjunction with requirements of the Trade Center SPPCCP. Future stormwater pollution prevention trainings will provide emphasis on pollutants such as PCBs.

High Risk / Commercial Facility Inspections

County staff conduct annual inspections of commercial facilities that have been identified to be potential sources of significant pollutant loading. Inspections involve a detailed visual assessment of the property. Screening observations / parameters include cleanliness of site (general housekeeping

conditions); outdoor storage / exposed materials; waste management areas (including grease storage), and any evidence of unauthorized non-stormwater discharges such as wash water discharges. Points of connection to the County’s MS4 are screened for any evidence of dry weather flow and/or illicit non-stormwater discharges.

Public Education and Outreach

The County continues to implement its public education and outreach program. Information is provided on the County’s website and disseminated through social media posts, e-newsletters, email distribution lists, press releases, brochures, presentations, public events, and public meetings.

County Website

The County’s updated [Report Stream Pollution website](#) provides information on how to report pollution releases or dumping as well as concerns pertaining to sediment tracking or runoff from construction sites.

The County’s [Prevent Pollution](#) website provides information on proper disposal of electronics, paint, and household hazardous waste. There is a link to learn about PCBs and building material disposal. The link goes the PCB brochures developed by the Northern Virginia Regional Commission’s Division of Planning and Environmental Resources. The brochures contain information on BMPs for PCB controls and how to report PCBs. Additional resources can be found on their [website](#).


What should I do?	
Control	
Contaminated runoff or illegal dumping	Do not allow contaminated wash water or dumpster drainage to go down storm drains.
Trash, litter, or other waste	Control litter to prevent release of PCBs from inks on packaging and paper products into our streams.
Spills, leaks, or drips	Monitor equipment and storage containers for leaks and spills that may enter the environment.
Inspect	
Electrical or insulation equipment	If equipment was manufactured before 1980, ensure PCBs are present. Check with Virginia Department of Environmental Quality or U.S. Environmental Protection Agency for proper disposal.
Worksite storm drains and hazardous waste	Check storm drains to ensure hazardous runoff cannot reach them. Never dump wastewater into storm drains.
Clean up	
Equipment and dirt/debris	Remove debris prior to washing equipment with water. Protect storm drains to prevent pollutants from entering.
Spills, leaks, or drips	Immediately clean up leaks, spills, or drips of chemicals, paints, or oils according to proper disposal guidelines.

Resources


- U.S. Environmental Protection Agency
www.epa.gov/t2
- Agency for Toxic Substances and Disease Registry
www.atsdr.cdc.gov/
- City of Alexandria
www.alexandria.gov
- Fairfax County
www.fairfaxva.gov
- ICore by Freepik
www.freepik.com
- Virginia Department of Environmental Quality
www.deq.state.va.us
- Virginia Department of Health
www.vdh.state.va.us
- Roanoke County
www.roanokeva.gov


Division of Planning and Environmental Services

July 2020



www.nvrc.org / @nvrcregion





Polychlorinated Biphenyls
in buildings and facilities

PCBs

Storm Drain Marking

The County continues to implement its [storm drain marking](#) program. This program involves volunteers and County staff affixing No Dumping – Drains to Local Stream decals on storm drains throughout the County, including those located at high priority municipal facilities.



Schedule of Implementation and Anticipated Actions for 2021-2026

Management Strategies & Practices	Actions	Implementation / Milestone
WPCP PCB Pollution Minimization Plan (PMP)	Continue to implement approved plan	Ongoing
Street Sweeping	-Continue street sweeping program -Sweep 30,000 lane miles over duration of permit term	-Ongoing -By June 2026
Pollution Prevention Protocols for Street and Parking Lot Maintenance	-Continue to implement protocols <i>Protocols updated for permit cycle 2021-2026, information incorporated into employee training in 2022</i>	Ongoing
Stormwater Infrastructure Inspection & Maintenance	-Continue catch basin inspection and cleaning program; inspect at least 10,000 catch basins over the duration of this permit -Inspect 500,000 linear feet by end of permit term	Ongoing/ by June 2026
Stormwater Management Facilities and Retrofit Projects	-Continue to implement various retrofit and resiliency projects to reduce pollutant loading -Continue to require SWMFs for non-exempted land disturbing activities (LDA) ≥ 2500 sf	Ongoing <i>Bay TMDL required sediment reductions reported through Bay TMDL Action Plan and subsequent annual reports¹</i>
Maintenance of Stormwater Management Facilities	Continue to ensure both public and private SWMFs are inspected and maintained	Ongoing
Arlington County Trades Center and other High Priority Municipal Facility Stormwater Pollution Prevention Plan Implementation	-Implement SWPPPs for facilities: ensure good housekeeping practices are being taken -Continue to conduct facility inspections -Continue to inspect and maintain SWMFs -Continue to conduct employee training	Ongoing
Integrated Spill Prevention, Control and Countermeasures Plan and Hazardous Materials Plan	-Implement plan and revise as needed -Continue employee training -Maintain inventory of materials -Maintain contracts for waste collection and disposal	Ongoing
Construction Site ESC/SWPPP Inspections	Continue to inspect permitted projects and monitor compliance with ESC/SWPPP requirements for land disturbing activities	Ongoing
Construction Standards & Specifications	Continue to ensure contractors and permit holders comply with section 01500	Ongoing

¹The Bay TMDL reductions for sediment can serve as a general proxy for PCB reductions, subject to the complexity/uncertainty described in the Stormwater Treatment and Stream Restoration sections above.

Household Hazardous Waste Collection Program	-Continue program -Continue outreach about program	Ongoing
Collection Events – E-CARE	-Continue to hold events -Continue to advertise program	Semi-annual
Solid Waste Bureau (SWB) Scrap Metal / Appliance Collection Program	-Continue collection program -Continue to advertise program -Inspect temporary storage containers	Ongoing
County Facility Renovation & Waste Disposal	-Continue to review and update contracts as necessary -Continue to dispose of waste properly	Ongoing
Employee Pollution Prevention Training	Continue employee training	Ongoing
High Risk / Commercial Facility Inspections	Continue to conduct inspections and complaint driven investigations.	Ongoing
Public Education and Outreach	-Continue programs and outreach efforts to disseminate pollution prevention information -Continue to update County website, signs, educational materials	Ongoing
Illicit Discharge Detection and Elimination Program	-Investigate pollution reports and unauthorized discharges. -Continue to educate public about how to report and prevention pollution	Ongoing
Partnerships / Regional Campaigns	Continue to partner with Clean Water Partners, Washington Metropolitan Council of Governments (COG), and Northern Virginia Regional Commission on education and outreach initiatives	Ongoing
Storm Drain Marking	Continue storm drain marking	Ongoing

Methods for Assessment of Effectiveness

Assessing the effectiveness of methods to reduce PCB loading and a specific timeframe for WLA attainment is complicated since there are no effective structural controls that remove PCBs from stormwater runoff and PCBs are pervasive throughout the environment. Continuing atmospheric deposition of PCBs is a major source of the low levels of PCBs in stormwater runoff. Their stable nature prevents PCBs from readily breaking down, allowing them to persist in the environment for a very long time.

An additional challenge is re-suspension of legacy PCB contaminated sediment in stream channels from historic sources, which creates an ongoing source of PCBs to the water column.

Many of the management strategies and programs outlined in this plan can potentially reduce PCB loading as a result of runoff and sediment reduction. However, the lack of established PCB removal efficiencies for stormwater management facilities, retrofits, and resiliency projects means that actual PCB load reductions cannot be quantified directly from estimated sediment reductions.

Over the long-term, given that PCBs have been banned and that there are no discrete active sources in Arlington, PCB concentrations will decline as the compound breaks down over time.

It should also be noted that PCB loading to the environment as a result of atmospheric deposition should decrease over time since the production and use of the chemical was banned in the late 1970s (DDOE, 2015).

What can be assessed and will be documented is the implementation of the programs and practices summarized in this plan. Particular emphasis will be placed on the quantitative sediment reductions associated with implementation of the Chesapeake Bay TMDL Action Plan. Documentation and sediment reduction computations will be provided in annual reports.

The County evaluated DEQ conducted PCB fish tissue sampling in a tidal section of Four Mile Run (station 1AFOU000.45) in 1997, 2008, and 2015. Sampling was also done in 2004 and 2015 in Pimmit Run close to its convergence with the Potomac River (station 1APIM000.15). Total PCB concentrations (wet weight) in species sampled (largemouth bass, white perch, channel catfish, carp, gizzard shad, and American eel) decreased. While this is small data set, it supports the hypothesis that PCB concentrations will decline as the compound breaks down over time. Data from 2023 and future years will be evaluated when it becomes available to see if this declining trend continues.

Summary

There are multiple reasons why reducing PCB loading from urban lands and in-stream PCB concentrations is extremely challenging, including:

- The legacy, non-active source status of PCB contamination;
- The ubiquitous nature of PCBs in the environment;
- The slow chemical breakdown of PCBs; and,
- The lack of established stormwater treatment systems with quantifiable PCB removal efficiencies.

Because of these factors, in the best professional judgment of County staff, the current estimate is that the WLA for the PCB TMDL in the County cannot be achieved in the foreseeable future for legacy PCB contamination.

In the meantime, however, the pollution minimization and stormwater management initiatives aimed at reducing loading of sediment outlined in this Action Plan will reduce PCB loading and complement the gradual reduction of PCB loads from atmospheric deposition via chemical breakdown.

The County anticipates continuing the programs and practices outlined in this Action Plan, subject to adjustments based on new information, priorities, and experience. As progress continues to be made and new water quality information and technology become available, it may be possible in the future to estimate a date for WLA achievement.

Progress and implementation of practices described in this Action Plan will be documented in the County's MS4 Permit Annual Reports.

References

ATSDR. 2001. Division of Toxicology ToxFAQs™ Polychlorinated Biphenyls. U.S. Department of Health and Human Services, Public Health Services, Agency for Toxic Substances and Disease Registry (ATSDR). City of Spokane Wastewater Management Division. March 2015. PCBs in Municipal Products.

Department of the Army U.S. Army Garrison, Fort Belvoir. March 2013. Virginia Pollutant Discharge Elimination System (VPDES) MS4 Permit, Fort Belvoir PCB TMDL Action Plan at U.S. Army Garrison Fort Belvoir, Virginia. Prepared by Tidewater, Inc.

District Department of the Environment (DDOE). May 2015. Consolidated Total Maximum Daily Load (TMDL) Implementation Plan Report. Prepared by LimnoTech.

Division of Planning, Design, and Development (PDD) - Department of Parks and Recreation (DPR). Adopted 2004; revised March 2013. Long Bridge Park Master Plan for Park and Recreation Facilities.

Interstate Commission on the Potomac River Basin. 2007. Total Maximum Daily Loads of PCBs for Tidal Portions of the Potomac and Anacostia Rivers in the District of Columbia, Maryland, and Virginia. Submitted to Water Protection Division of U. S. EPA, Region III. October 31, 2007.

<https://www.deq.virginia.gov/home/showdocument?id=11429&t=637692156079770000>

Oregon DEQ. 2012. Fact Sheet: Source of Polychlorinated Biphenyls. Oregon Department of Environmental Quality.

United States Environmental Protection Agency (EPA). May 2021. Polychlorinated Biphenyls (PCBs) website, <https://www.epa.gov/pcbs/learn-about-polychlorinated-biphenyls-pcbs>.

Virginia Department of Environmental Quality (DEQ). 2021. PCB TMDLs website, <https://www.deq.virginia.gov/water/water-quality/tmdl-development/tmdls-under-development/pcb-tmdls>.

Appendix A – Summary of Public Comments

In accordance with part 1.E.2.f, the public was provided the opportunity to comment on the initial draft plan for a minimum of fifteen days to meet the local TMDL action plan requirements. The draft action plan was available on the County’s website (“[Bacteria & PCB TMDL Actions Plans](#)”) starting in late October 2022. Online public comment forms were made available from November 1 through November 15, 2022. Various media / outreach mechanisms were used to notify the public. The following table provides the public comments received and the County’s response to each comment.

Commenter	Comment	County Response
Joslin D Gallatin	Definitely adopt.	The Action Plan will be submitted to DEQ
Dick McNamara	The plan seems appropriate to solve today's problem. The Missing Middle Housing plans and Plan Langston Blvd will make this much worse to address in the future. 8400 units in PLB will probably have that many dogs for the single no kids occupants. Further MMH will more than triple the density of SFH homes in Arlington with equal added dogs. All water that feeds the Potomac River will be impacted, new sewers all around. Impacts are dramatic and for the worse. Every water shed and tributary will be more polluted and require more remediation that these plans do not currently address.	This comment was also provided for the Bacteria (<i>E. coli</i>) TMDL Action Plan This TMDL Action Plan is meant to be a living document that will be reviewed and revised over time. The County anticipates continuing the programs and practices outlined in this Plan. Any new technology and/or approaches developed to reduce PCB loading will be evaluated. Adjustments may be made to this plan if new or alternative measures or controls are determined to be effective and feasible to implement.
Dorothy L. Dake	Support continuation of programs and practices outlined in the plan to address PCBs.	The County anticipates continuing the programs and practices outlined in this Plan to address PCBs to the maximum extent practicable. The County will evaluate any new technology and/or approaches developed to reduce PCB loading. Adjustments may be made to this plan if new or alternative measures or controls are

		<p>determined to be effective and feasible to implement. Further, the County will continue its adaptive and comprehensive pollution prevention programs that aim to reduce discharges of pollutants of concern from multiple sources, including development activity, to local water resources. For more information, please visit: Stormwater Management – Official Website of Arlington County Virginia Government (arlingtonva.us)</p>
<p>National Algae Association, barry@nationalgaeassociation.org</p>	<p>We recommend: On Location Nutrient Runoff (N+P) Capture, Recycling and Repurposing at Farm Edges is needed to reduce nutrients entering waterways and creating harmful algae blooms on waterbodies.</p>	<p>The objective of this PCB TMDL Action Plan is to reduce PCB loading to the maximum extent practicable from controllable sources. The County will continue its adaptive and comprehensive pollution prevention programs that aim to reduce discharges of pollutants of concern, including nutrients, to local water resources.</p>