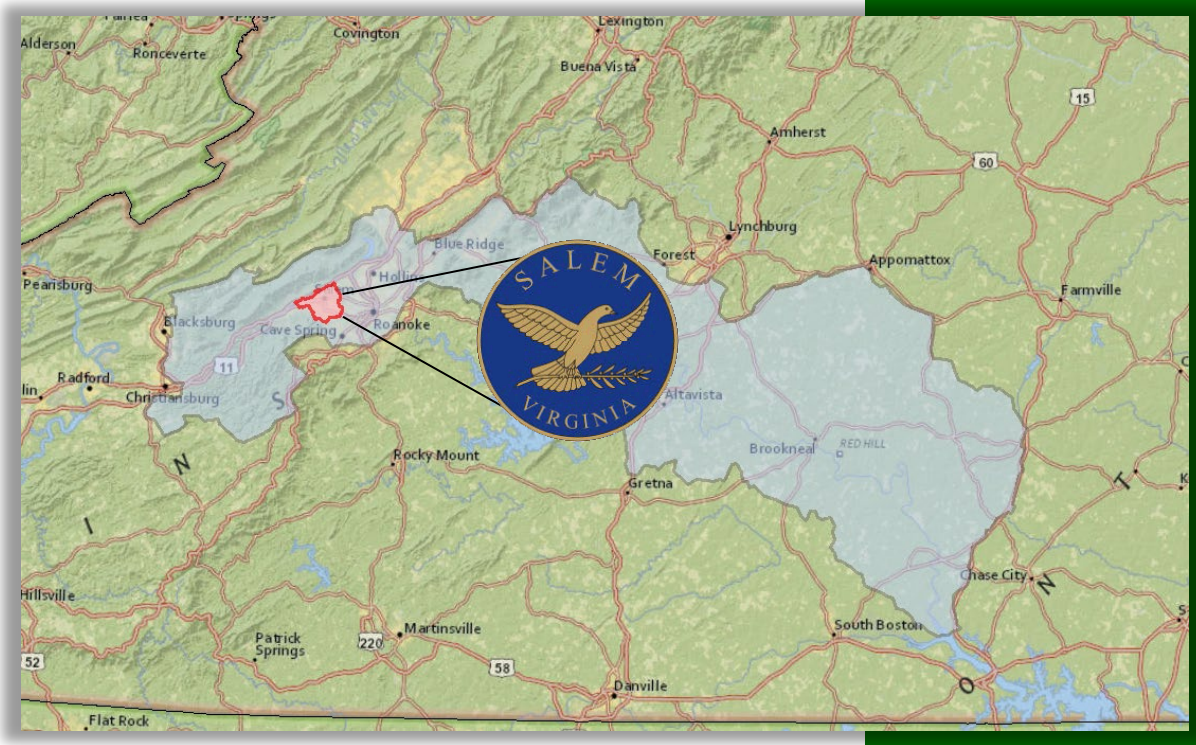
Action Plan for the Roanoke River PCB TMDL

City of Salem

A Plan to Address the City's Assigned Wasteload Allocation for the Roanoke River PCB TMDL



Permit #: VAR40010
Prepared: June 2016
Updated: April 2025

This document addresses Part II B of the VPDES Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer System. This document serves as a City-specific TMDL Action Plan to identify the best management practices and other interim milestone activities to be implemented to address the PCB wasteload allocation assigned to the City's regulated MS4 area in the *"Roanoke River* PCB *TMDL Development (Virginia)"* approved by the Environmental Protection Agency on April 9, 2010. For the purposes of this Plan, the 2000 and 2010 Census Urbanized Areas were used to define the City of Salem's regulated MS4 area as defined in 9VAC25-890 Section 1.

Wetland Studies and Solutions, Inc.
a DAVEY company

EXECUTIVE SUMMARY

The City of Salem (City) is authorized to discharge stormwater from its municipal separate storm sewer system (MS4) under the Virginia Pollutant Discharge Elimination System (VPDES) General Permit for Discharge of Stormwater from Small MS4s (MS4 General Permit). To maintain permit compliance, the City implements an MS4 Program Plan that includes best management practices (BMPs) to address six minimum control measures (MCMs) and special conditions for the Total Maximum Daily Loads (TMDLs) in which the City has been assigned a wasteload allocation (WLA). The Environmental Protection Agency (EPA) describes a TMDL as a "pollution diet" that identifies the maximum amount of a pollutant the waterway can receive and still meet water quality standards. A WLA determines the required reduction in pollutant of concern loadings from the MS4 to meet those standards. The MS4 General Permit serves as the regulatory mechanism for addressing the load reductions described in the TMDL, predominantly through the requirement of a TMDL Action Plan.

The purpose of this Action Plan is to address the WLA assigned to the City for the Roanoke River Polychlorinated Biphenyl (PCB) TMDL in accordance with the special conditions in the MS4 General Permit. The TMDL entitled the "*Roanoke River PCB TMDL Development (Virginia),*" approved by the EPA on April 9, 2010, assigns a WLAs to the City's MS4 in the Upper Roanoke River study area for Mason Creek, Peters Creek, and the Roanoke River of 8.8 mg/yr, 0.2 mg/yr, and 42.3 mg/yr, respectively. These WLAs are equivalent to a 99.05% reduction from the existing conditions. The Action Plan addresses PCBs in accordance with the special conditions, demonstrating that the City uses an adaptive and iterative approach to reduce or eliminate the pollutant to the maximum extent practicable. Compliance with the special conditions is demonstrated within the Action Plan through:

- ✓ Summary of the City's MS4 Program Plan MCMs list laws, programs, and other regulatory mechanisms relied upon by City that are applicable to reducing PCBs;
- ✓ The City's MS4 Public Education and Outreach strategy and plan;
- ✓ An assessment of City-owned and operated properties; and
- ✓ A methodology to measure Action Plan effectiveness through MS4 annual reporting.

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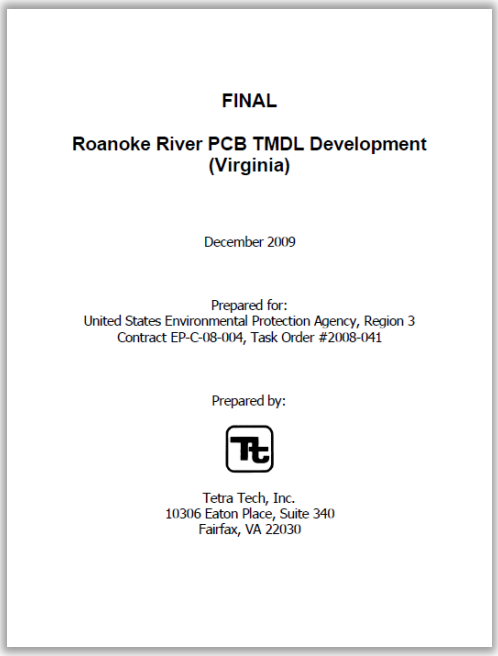
ACRONYMS

BMP	Best Management Practice
CUA	Census Urbanized Area
CWA	Clean Water Act
DEQ	Virginia Department of Environmental Quality
EPA	Environmental Protection Agency
IDDE	Illicit Discharge Detection and Elimination
LA	Load Allocation
MCM	Minimum Control Measure
MEP	Maximum Extent Practicable
MOS	Margin of Safety
MS4	Municipal Separate Stormwater Sewer System
MS4 GP	General Permit for Discharge of Stormwater from Small MS4s
NPDES	National Pollutant Discharge Elimination System
SWPPP	Stormwater Pollution Prevention Plan
SWM	Stormwater Management
TMDL	Total Maximum Daily Load
VPDES	Virginia Pollutant Discharge Elimination System
VSMP	Virginia Stormwater Management Program
WLA	Wasteload Allocation

1.0 INTRODUCTION AND PURPOSE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Roanoke River PCB TMDL Development (Virginia)

December 2009

Prepared for:
United States Environmental Protection Agency, Region 3
Contract EP-C-08-004, Task Order #2008-041

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Mandated by Congress under the Clean Water Act , the National Pollutant Discharge Elimination System (NPDES) storm water program includes the Municipal Separate Storm Sewer System (MS4), Construction, and Industrial General Permits. In Virginia, the NPDES Program is administered by the Virginia Department of Environmental Quality (DEQ) through the Virginia Stormwater Management Program (VSMP) and the Virginia Pollutant Discharge Elimination System (VPDES). The City of Salem (City) is authorized to discharge stormwater from its MS4 under the VPDES General Permit for Discharge of Stormwater from Small MS4s (MS4 General Permit). As part of the MS4 General Permit authorization, the City developed and implements an MS4 Program Plan with best management practices (BMPs) to address the six minimum control measures (MCMs) and the special conditions for applicable total maximum daily loads (TMDLs), as outlined in the MS4 General Permit. Implementation of these BMPs is consistent with the provisions of an iterative MS4 Program, which constitutes compliance with the standard of reducing pollutants to the "maximum extent practicable."

In 1998, DEQ listed portions of the Roanoke River watershed on their biennial 303(d) TMDL Priority List and Report due to violations of the state's water quality standard for PCBs. PCBs are a group of synthetic chemicals consisting of 209 different compounds and are known to be carcinogenic in humans. The particularly stable structure of the compounds allows them to accumulate in the fatty tissue of fish and other animals, causing bioaccumulation in the food chain and a threat to human health. As a consequence, the PCB TMDLs for the Roanoke River were developed and approved by the Environmental Protection Agency (EPA) on April 9, 2010.

The TMDL assigned a waste load allocation (WLA) to the City's MS4 in the Upper Roanoke River study area by subwatershed. The City was assigned WLAs of 8.8 mg/yr for Mason Creek, 0.2 mg/yr for Peters Creek, and 42.3 mg/yr for the Roanoke River. These WLAs represent a 99.05% reduction from the existing loads. The WLA represents the allowable PCB load from the City's MS4s to prevent instances of exceedance of PCB discharge water quality standards. The expectation from the Commonwealth for the City is to address the WLA through iterative implementation of programmatic BMPs.

1.1 Total Maximum Daily Loads

A TMDL is the amount of pollutant a water body can assimilate and still meet water quality standards for its designated use. Typically, TMDLs are represented numerically in three main components:

- WLA for point source contributions and MS4 Permit operators.
- Load Allocations (LA) for non-point source contributions and natural background sources.
- Margin of Safety (MOS)

Point source pollution is any single identifiable source from which pollutants are discharged. If point source discharges, including a permitted MS4, are present in the TMDL watershed, then any allocations assigned to that permittee must be in the form of a WLA. The City's MS4 outfalls are defined as point source discharges and therefore fall under this category in the TMDL. Pollution that is not from an identifiable source, such as a pipe or a ditch, but rather originates from multiple sources over a relatively large area, are considered to be non-point source pollution. These sources are typically categorized as contaminated sites, where analysis of on- site soil samples found measurable concentrations of PCBs, and where LAs are assigned for each. The MOS is a required component that accounts for the modeling uncertainty in the response of the waterbody to loading reductions and in this TMDL is included both implicitly in conservative estimates and also explicitly, specified at 5% of the total TMDL. The TMDL is expressed in the following equation:

$$TMDL = \sum WLA + \sum LA + MOS$$

The TMDL represents the sum of calculable sources plus a margin of safety that is required to not exceed the state water quality standard. Water quality targets for PCBs are derived from bioaccumulation factors and the Virginia DEQ fish tissue criterion for total PCBs, which are developed to be protective of fish for human consumption. The human health criterion that applies to waterbodies used for public water supply is also covered under this approach, though it is less stringent.

1.2 MS4 General Permit TMDL Special Conditions

The City operates a regulated MS4 that lies within the Roanoke River PCB TMDL watershed and is therefore subject to the WLAs assigned in the TMDL. The special conditions for the TMDL listed in the MS4 General Permit require the City to develop a TMDL Action Plan designed to reduce loadings for pollutants of concern where the City is given a WLA to an impaired water for which a TMDL has been approved by the EPA as described below:

- For TMDLs approved by the EPA prior to July 1, 2018, and in which an individual or aggregate wasteload has been allocated to the City, the City shall update the previously approved local TMDL action plans to meet the conditions of Part II B 4, B 6, B 7, and B 8 as applicable, no later than 18 months after the permit effective date and continue implementation of the action plan. Updated action plans shall include:

1) An evaluation of the results achieved by the previous action plan; and
2) Any adaptive management strategies incorporated into updated action plans based on action plan evaluation.

- For TMDLs approved by EPA on or after July 1, 2018, and prior to October 31, 2023, and in which an individual or aggregate wasteload has been allocated to the City, the City shall develop and initiate implementation of action plans to meet the conditions of Part II B 4, B 5, B 6, B 7, and B 8 as applicable for each pollutant for which wasteloads have been allocated to the City MS4 no later than 30 months after the permit effective date.

The City shall complete implementation of the TMDL action plans as soon as practicable. TMDL action plans may be implemented in multiple phases over more than one permit cycle using the adaptive iterative approach provided adequate progress is achieved in the implementation of BMPs designed to reduce pollutant discharges in a manner that is consistent with the assumptions and requirements of the applicable TMDL. Each local TMDL action plan developed by the City shall include the following:

Each local TMDL action plan developed by the City shall include the following:

- The TMDL project name;
- The EPA approval date of the TMDL;
- The wasteload allocated to the City (individually or in aggregate), and the corresponding percent reduction, if applicable;
- Identification of the significant sources of the pollutant of concern discharging to the City's MS4 and that are not covered under a separate VPDES permit. For the purposes of this requirement, a significant source of pollutants means a discharge where the expected pollutant loading is greater than the average pollutant loading for the land use identified in the TMDL;
- The BMPs designed to reduce the pollutants of concern in accordance with Parts II B 5, B 6, B 7, and B8;
- Any calculations required in accordance with Part II B 5, B 6, B7, or B 8;
- For action plans developed in accordance with Part II B 5, B 6, and B 8, an outreach strategy to enhance the public's education (including employees) on methods to eliminate and reduce discharges of the pollutants; and
- A schedule of anticipated actions planned for implementation during this permit term.

1.3 Salem's PCB Action Plan

The purpose of the City's Action Plan for the Roanoke River PCB TMDL is to address each of the Local TMDL special conditions listed in Part II B. As an adaptive and iterative approach to meet surface water quality goals, the Action Plan may be revised from time to time to reduce PCB discharges from the City's MS4 to the maximum extent practicable (MEP).

The MS4 General Permit requires the City to 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:

(1) Location of the potential source;

(2) 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

(3) A description of any measures being implemented or to be implemented to prevent exposure to stormwater and the discharge of PCBs from the site.

If at any time during the term of this permit, the City 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.

The Action Plan is incorporated, by reference, into the City's MS4 Program Plan, which outlines the BMPs that address the entirety of the conditions set forth in the MS4 General Permit.

2.0 THE ROANOKE RIVER PCB TMDL

The TMDL study area includes most of the upper and lower sections of the Roanoke River as it passes through southwest and southern Virginia toward North Carolina, comprising approximately 2,379 square miles. The upper section begins at the river headwaters in the Blue Ridge Mountains downstream to Niagara Dam, which is approximately 1.5 miles east of the City of Roanoke. The lower section begins at the Leesville Dam downstream to the confluence with the Dan River. The Roanoke River as it flows into Smith Mountain Lake, along with the lake's tributaries, are excluded from the PCB TMDL study area. Figure 1 depicts the study areas, as indicated in the TMDL. There are two impaired sections of the Roanoke River which flow through the City—near Dixie Caverns to Mason Creek and Masons Creek to Back Creek.

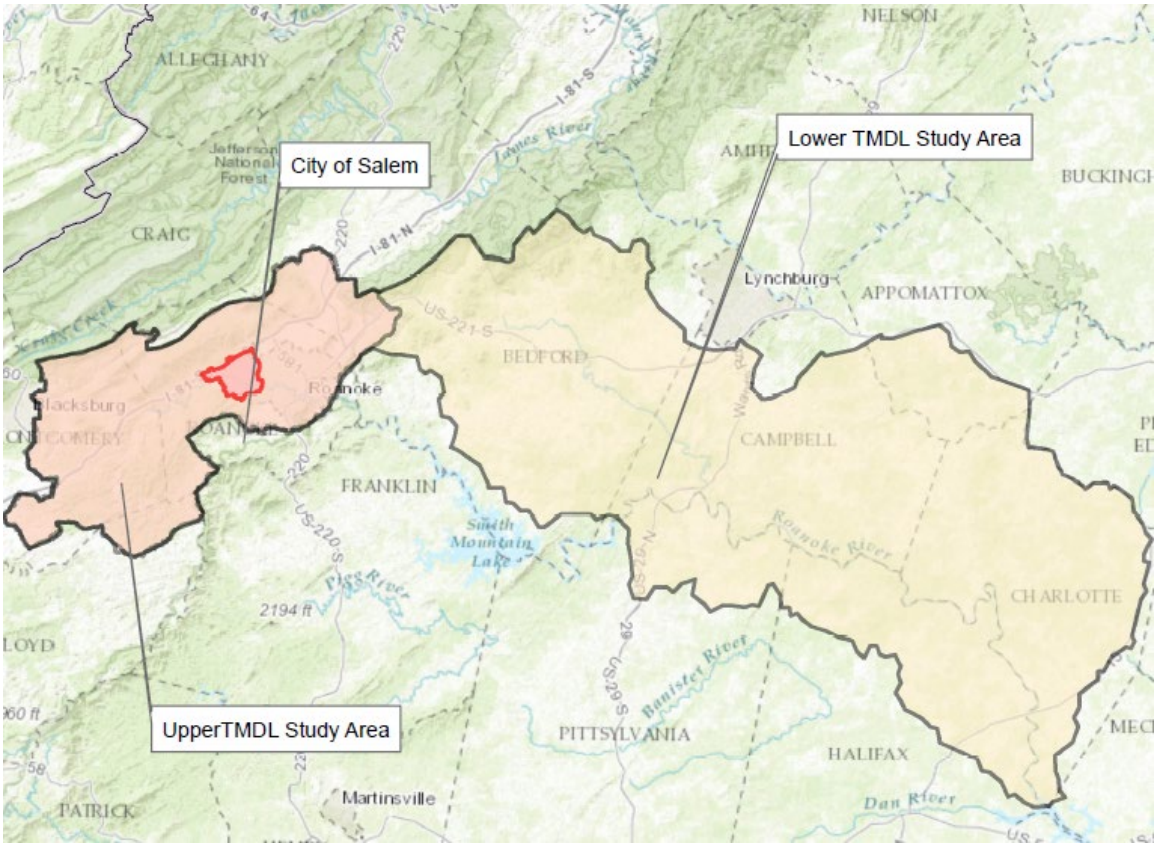


Figure 1. Map of the Upper and Lower Sections of the Roanoke River TMDL Watershed

The PCB impairment is due to violations to water quality standards as it relates to safe human consumption of fish. This particular pollutant is typically found in lake, stream, and river sediments in watersheds that have been contaminated or were contaminated prior to the ban on manufacture and use of PBCs in 1979. Due to significant resistance to breakdown, PCBs remain associated with sediment for many years, and sites and facilities that are no longer directly associated with PCB handling may still be discharging the pollutant due to historical contamination.

2.1 Wasteload Allocation

The "*Roanoke River PCB TMDL Development (Virginia)*" assigns a WLA for PCBs to existing point sources, including permitted MS4s. The TMDL was established based on scenarios where no violations of water quality standard would occur. This includes reductions from point source and non-point source contributors, including MS4s, and range from 5% reduction for atmospheric loadings to 100% reduction for known contaminated sites. The City's MS4, as a point source, is assigned a WLA in the Upper Roanoke River study area broken down by subwatershed drainage area, as summarized in Table 1.

Table 1: WLA for Discharges from Salem's MS4 in the Upper Roanoke River Study Area

Watershed	Baseline Discharge (mg/yr)	Wasteload Allocation (mg/yr)	Percent Reduction
Mason Creek	923.7	8.8	99.05%
Peters Creek	18.6	0.2	99.05%
Roanoke River	4,451.6	42.3	99.05%

2.2 Characterization of PCB Sources in the TMDL

Potential sources of PCBs from MS4s are classified in the TMDL as either current or legacy. Current sources have a pathway to a waterbody that is defined and that is also able to be controlled or disrupted. Legacy sources are often not as easily defined, as they exist at the interface with a waterbody where there is a continuous exchange of material. Legacy sources cannot be easily controlled due to having no disruptable pathway; they must be removed at the source. Examples of each are as follows:

Current Source Examples

- Contaminated Soils – Upland facilities and lands that are or were historically associated with PCB handling may contain contaminated soil. If not properly protected or removed, soil that comes in contact with stormwater can be washed into waterbodies.
- Leachate – Landfill sites and industrial disposal areas containing PCBs, if not properly capped or lined, may release contaminated water that has infiltrated. This leachate then becomes associated with the surrounding soil and may be washed into a waterbody.
- Transformers and Storage Containers – Many electrical transformers manufactured prior to 1979 used PCBs as fire-retardant ballast. Fluorescent light fixtures installed in buildings prior to 1979 may also contain PCB ballast. These materials, and any containers used to store them, are potential sources.
- Effluent Discharge – Liquids containing PCBs may be released into the storm drain or sanitary sewer.
- Off-gassing Deposition – Contaminated sites where PCBs are exposed to the air may produce off-gassing of PCB molecules. These can then be carried in the atmosphere and redeposited locally.

Legacy Source Examples

- In-stream Sediments – PCBs washed into streams can become associated with streambed sediment and be rereleased when shear stress is excessive, such as during a heavy storm event.
- Streambank soils – Contaminated soils within a streambank may become eroded during storm events, releasing PCBs into the downstream flow.
- Biota – Animals exposed to PCBs may accumulate them in their fatty tissue, where they may remain for its lifetime. Some plants may also accumulate PCBs through their roots or via atmospheric deposition.
- Atmospheric Deposition – Background concentrations in the atmosphere may be deposited directly to waterbodies.

For the WLA calculation in the TMDL, those areas known to be contaminated within the spatial context of the MS4, and that are not otherwise regulated under a specific stormwater permit, are considered a component of the associated MS4. Sites with known contamination that were studied in the TMDL are spread throughout the study area, though none are located within the City.

3.0 POTENTIAL PCB SOURCE CHARACTERIZATION

Consistent with the special conditions of the MS4 General Permit, properties owned and operated by the City were assessed to determine their potential for presence of sources of PCBs to the City's MS4 or directly into surface waters. Potential sources include facilities and buildings that were constructed prior to the PCB ban in 1979, those associated with the municipal waste stream, those potentially producing PCB pollution due to former site uses, or those storing any PCB related materials.

An assessment of City-owned facilities begins with an overall identification and location of all properties as depicted in Figure 2.

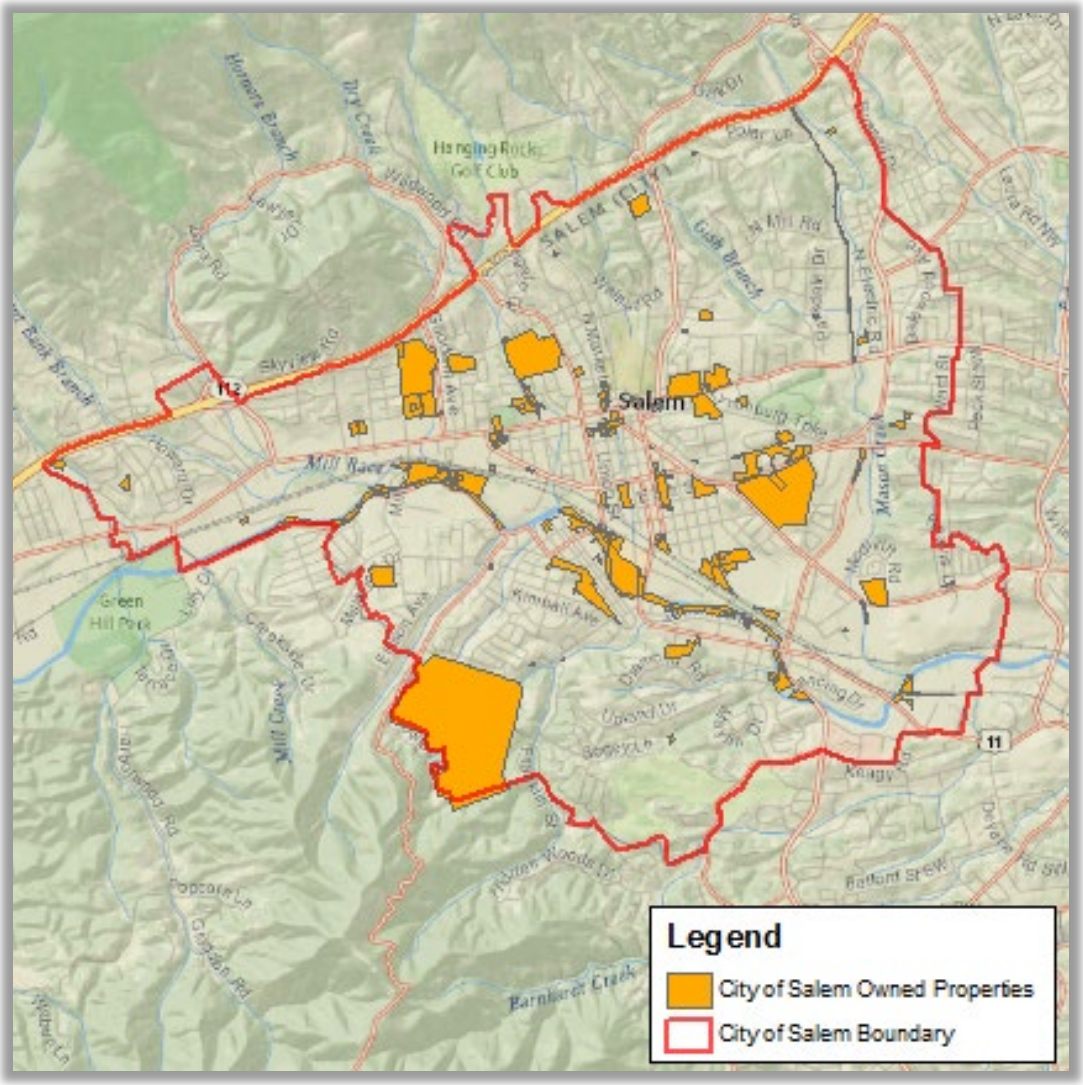


Figure 2. City-owned properties

The next level of assessment was conducted as illustrated in Figure 3 and included for each property shown in Figure 2. Additionally, the US EPA's PCB Transformer Registration Database was searched to determine if any City-owned facilities or properties are registered sites, which would indicate the presence of any PCB-containing transformers. No City-owned facilities are listed in the database.

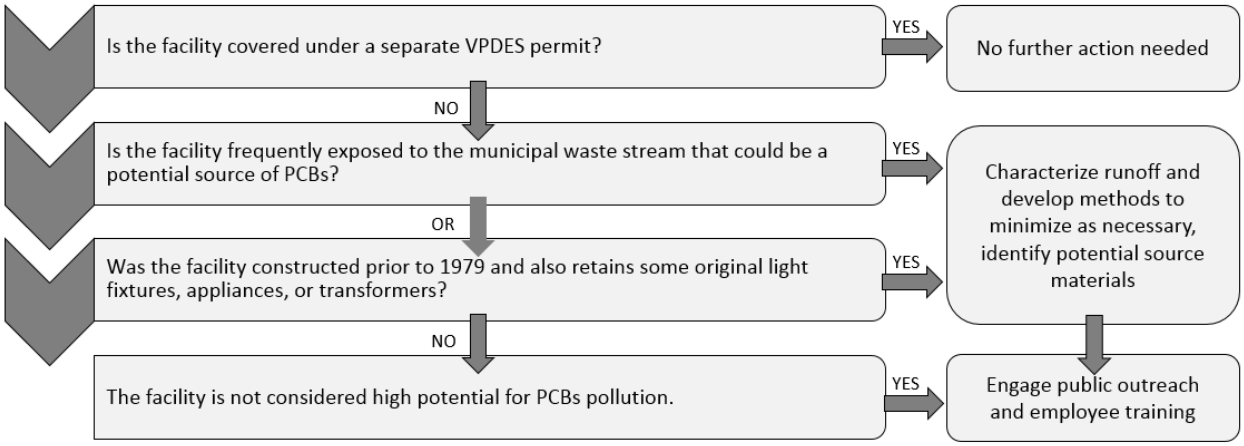


Figure 3. City-owned properties assessment process

3.1 City Property Assessment – Municipal Buildings

A poly-chlorinated biphenyl's (PCB) survey was conducted at 21 facilities in the City that were built prior to the PCB ban in 1979. The site's property boundary footprint and building exteriors were visually inspected, and no building interiors were inspected. An inspection sheet was utilized for each site. Please note, no city-owned facilities were listed in the United States Environmental Protection Agency (EPA) PCB Transformer Registration Database. However, visual inspection of transformers near or at the facilities was included. An electronic survey was also submitted to various administrative personnel knowledgeable of the different facilities, day-to-day operations and history. The PCB site inspections were conducted in 2019 on April 23 and April 24. Table 2 lists the location of each potential PCB source included in the survey, thereby complying with Part II B 7 (a) special conditions for PCB TMDLs.

Table 2: City of Salem Facilities Built Prior to 1979

Facility	Address	Year Built	Potential PCB Source
Streets Facility	1300 Indiana Street	1978	Paint, Caulk, & Sealants
Streets Facility	1202 Indiana Street	1974	Paint, Caulk, & Sealants
Salem High School	400 Spartan Drive	1977	Paint, Caulk, & Sealants
Salem Schools	406 East 4th Street	1973	Paint, Caulk, & Sealants
Water Department Bldg.	1106 Tidewater Street	1973	Paint, Caulk, & Sealants
Fire Station	415 Electric Road	1970	Paint, Caulk, & Sealants

Facility	Address	Year Built	Potential PCB Source
Civic Center	1001 Roanoke Blvd./1004-1008 Texan St.	1966	Paint, Caulk, & Sealants
Courthouse Firehouse	2 E Calhoun St./105 South Market St.	1964	Paint, Caulk, & Sealants
School Board	510 S College Avenue	1963	Paint, Caulk, & Sealants
East Salem Elementary	1765 Roanoke Boulevard	1961	No
West Salem Elementary	520 North Bruffey Street	1952	No
Fire/EMS Admin	216 South Broad Street	1950	Paint, Caulk, & Sealants
Parks & Rec Moyer	915 Union Street	1940	Paint, Caulk, & Sealants
GW Carver Elementary	6 East 4th Street	1940	No
Health Clinic	15 East Clay Street	1935	Paint, Caulk, & Sealants
Andrew Lewis MS	616 South College Avenue	1932	Paint, Caulk, & Sealants
Registrar	19 East Clay Street	1929	Paint, Caulk, & Sealants
Longwood Building	601 East Main Street	1920	Paint, Caulk, & Sealants
Parks & Recreation	620 Florida Street/731 Indiana Street	1920	Paint, Caulk, & Sealants
City Hall	114 North Broad Street	1913	Paint, Caulk, & Sealants
Old Passenger Station	1031 South College Street	1900	Paint, Caulk, & Sealants

Each facility was inspected utilizing the EPA PCB Inspection Manuel (August 2004) and the inspection sheet. The observations and survey results below comply with Part II B 7 special conditions for PCB TMDLs.

1978 – Streets Facility: *1300 Indiana Street (Part of Streets & Maintenance Facility)*
The City conducted a field reconnaissance and PCB Testing in 2019 at the Streets and Maintenace Department Facility. The City investigated potential sources of PCBs in stormwater runoff by determining drainage patterns, researching historic uses, evaluating current operations, and collection of additional media samples. The study found there are low levels of PCB concentrations potentially originating from the Streets Facility. In addition, there are also low levels of PCB concentrations potentially derived from other offsite sources. The research, site visits, and laboratory results support the conclusion that PCB sources are anticipated to be historic or relic and below regulatory action levels for corrective action. There are no apparent discernible PCB sources at the Streets Facility. The Streets Facility implements a site-specific SWPPP with source controls to minimize the potential discharge of pollutants from the property.

1974 – Streets Facility: *1202 Indiana Street (Part of Streets & Maintenance Facility)*
The City conducted a field reconnaissance and PCB Testing in 2019 at the Streets and Maintenace Department Facility. The City investigated potential sources of PCBs in stormwater runoff by determining drainage patterns, researching historic uses, evaluating current operations, and collection of additional media samples. The study found there are low levels of PCB concentrations potentially originating from the Streets Facility. In addition, there are also low levels of PCB concentrations potentially derived from other offsite sources. The research, site

visits, and laboratory results support the conclusion that PCB sources are anticipated to be historic or relic and below regulatory action levels for corrective action. There are no apparent discernible PCB sources at the Streets Facility. The Streets Facility implements a site-specific SWPPP with source controls to minimize the potential discharge of pollutants from the property.

1977 - Salem High School: *400 Spartan Drive*
Salem High School is a large parcel with parking lots, educational buildings, running tracks, and ball fields. Building materials installed from 1950-1979 were reported as likely present on the survey. Multiple pad-mounted and pole-mounted transformers were observed on-site in good condition with some labeled as "No PCBs". No knowledge of existing or historical PCB use or storage on-site were noted in the survey.

1973 - Salem Schools: *406 East 4th Street*
Salem Schools is a one-story building with a small parking lot. Building materials installed from 1950-1979 were reported as likely present on the survey. There were no pad-mounted or pole-mounted transformers observed on-site. No knowledge of existing or historical PCB use or storage on-site were noted in the survey.

1973 - Water Department Building: *1106 Tidewater Street*
The Water Department Building is a wooded parcel with a large metal building and multiple wooden single-story structures reportedly slated for demolition. Original building materials appeared to be present. One pole-mounted transformer was observed on-site in good condition and a "No PCBs" label could not be determined from ground level. No knowledge of existing or historical PCB use or storage on-site were noted in the survey.

1970 - Fire Station: *415 Electric Road*
The Fire Station parcel consists of a brick building with an asphalt parking lot. Original building materials appeared to be present. Multiple pole-mounted transformers were observed on-site in good condition and "No PCBs" labels could not be determined from ground level. No knowledge of existing or historical PCB use or storage on-site were noted in the survey.

1966 - Civic Center: *1001 Roanoke Boulevard; 1004-1008 Texas Street*
The Civic Center parcel consists of a large event venue building, tennis courts, two large ball fields, stadium seating, and multiple asphalt parking lots. Original building materials appeared to be present. Multiple pad-mounted and pole-mounted transformers were observed on-site in good condition. Most of the pad-mounted transformers were not labeled as "No PCBs" and the pole-mounted transformer labels could not be determined from ground level. No knowledge of existing or historical PCB use or storage on-site were noted in the survey.

1964 - Courthouse/Firehouse: *2 East Calhoun Street; 105 South Market Street*
The Courthouse/Firehouse parcel consists of two buildings sharing a city block with asphalt parking lots. Original building materials appeared to be present. One pad-mounted transformer was observed on-site in good condition and labeled "No PCBs". No knowledge of existing or historical PCB use or storage was noted on-site in the survey.

1963 - School Board: *510 South College Avenue*
The School Board parcel is a one-story building with a small parking lot. Building materials installed from 1950-1979 were reported as likely present on the survey. Pole-mounted transformers were observed on-site in good condition and a "No PCBs" label could not be determined from ground level. No knowledge of existing or historical PCB use or storage on-site were noted in the survey.

1961 - East Salem Elementary: *1765 Roanoke Boulevard*
The East Salem Elementary parcel consists of a large education building with multiple asphalt parking lots. Building materials installed from 1950-1979 were reported as not present on the survey. Multiple pole-mounted transformers were observed on-site in very good condition and "No PCBs" labels could not be determined from ground level. No knowledge of existing or historical PCB use or storage on-site were noted in the survey.

1952 - West Salem Elementary: *520 Bruffey Street*
The West Salem Elementary parcel consists of a large education building with asphalt parking lots. Building materials installed from 1950-1979 were reported as not present on the survey. Pole-mounted capacitors and a pad-mounted transformer labeled "No PCBs" were observed on-site in good condition. No knowledge of existing or historical PCB use or storage on-site were noted in the survey.

1950 - Fire/EMS Admin: *216 South Broad Street*
The Fire/EMS Administrative parcel consists of a one-story building. Original building materials appeared to be present. No pad-mounted or pole-mounted transformers were observed on-site. No knowledge of existing or historical PCB use or storage on-site were noted in the survey.

1940 - Parks and Recreation Moyer: *915 Union Street*
The Parks and Recreation Moyer parcel consists of a one-story single-family structure with proximate gravel parking. Original building materials appeared to be present. No pad-mounted or pole-mounted transformers were observed on-site. No knowledge of existing or historical PCB use or storage on-site were noted in the survey.

1940 - George Washington Carver Elementary: *6 East 4th Street*
The George Washington Carver Elementary parcel consists of a large education building with asphalt parking lots, playground and a large playing field. Building materials installed from 1950-1979 were reported as not present on the survey. One unlabeled pad-mounted transformer was observed on-site in good condition. No knowledge of existing or historical PCB use or storage on-site were noted in the survey.

1935 - Health Clinic: *15 East Clay Street*
The Health Clinic parcel consists of a one-story single-family structure. Original building materials appeared to be present. No pad-mounted or pole-mounted transformers were observed on-site. No knowledge of existing or historical PCB use or storage on-site were noted in the survey.

1932 - Andrew Lewis Middle School: *616 South College Street*
The Andrew Lewis Middle School parcel consists of a large education building with asphalt parking lots. Original building materials appeared to be present but was reported as unknown on the survey. Pole-mounted and a pad-mounted transformer were observed on-site in good condition. The pad-mounted transformer appeared to be labeled as "No PCBs" and the pole-mounted transformer could not be determined from ground level observations. No knowledge of existing or historical PCB use or storage on-site were noted in the survey.

1929 - Registrar: *19 East Clay Street*
The Registrar parcel consists of a one-story single-family structure. Original building materials appeared to be present. No pad-mounted or pole-mounted transformers were observed on-site. No knowledge of existing or historical PCBs use or storage on-site were noted in the survey.

1920 - Longwood Building: *601 East Main Street*
The Longwood Building parcel consists of a one-story single-family structure located in the Longwood recreational park. Original building materials appeared to be present. No pad-mounted or pole-mounted transformers were observed on-site. No knowledge of existing or historical PCB use or storage on-site were noted in the survey.

1920 - Parks and Recreation: *620 Florida Street/731 Indiana Street*
The Parks and Recreation parcel consists of a single-family structure with asphalt parking, batting cages, ball field with associated block buildings and asphalt parking lot. Original building materials appeared to be present. Pole-mounted transformers were observed on-site in good condition and it could not be determined if "No PCBs" labels were present from ground-level. No knowledge of existing or historical PCB use or storage on-site were noted in the survey.

1913 - City Hall: *114 North Broad Street*
The City Hall parcel consists of a two-story brick structure with multiple offices. Original building materials appeared to be present. One pad-mounted transformer was observed on-site in good condition and appeared to be labeled as "No PCBs". No knowledge of existing or historical PCB use or storage on-site were noted in the survey.

1900 - Old Passenger Station: *1031 South College Avenue*
The Old Passenger Station parcel consists of a one-story brick structure that formerly served as a railway train passenger station. Original building materials appeared to be present. One pole-mounted transformer was observed on-site in good condition. No knowledge of existing or historical PCB use or storage on-site were noted in the survey.

In the evaluation, Seventeen (18) facilities owned by the City were evaluated for potential PCB sources. Potential PCB sources identified were the presence of paint, window caulks and sealants that predate 1979. The facilities that appeared to have these materials or were listed as such in the survey are as follows:

- **1978 – Streets Facility:** 1300 Indiana Street (Part of Streets & Maintenance Facility)
- **1974 – Streets Facility:** 1202 Indiana Street (Part of Streets & Maintenance Facility)

- **1977 - Salem High School:** 400 Spartan Drive
- **1973 - Salem Schools:** 406 East 4th Street
- **1973 - Water Department Building:** 1106 Tidewater Street
- **1970 - Fire Station:** 415 Electric Road
- **1966 - Civic Center:** 1001 Roanoke Boulevard; 1004-1008 Texas Street
- **1964 - Courthouse/Firehouse:** 2 East Calhoun Street; 105 South Market Street
- **1963 - School Board:** 510 South College Avenue
- **1950 - Fire/EMS Admin:** 216 South Broad Street
- **1940 - Parks and Recreation Moyer:** 915 Union Street
- **1935 - Health Clinic:** 15 East Clay Street
- **1932 - Andrew Lewis Middle School:** 616 South College Street
- **1929 - Registrar:** 19 East Clay Street
- **1920 - Longwood Building:** 601 East Main Street
- **1920 - Parks and Recreation:** 620 Florida Street/731 Indiana Street
- **1913 - City Hall:** 114 North Broad Street
- **1900 - Old Passenger Station:** 1031 South College Avenue

The facilities that were listed as not having materials remaining from any renovation activities from 1950-1979 in the survey are as follows:

- **1961 - East Salem Elementary:** 1765 Roanoke Boulevard
- **1952 - West Salem Elementary:** 520 Bruffey Street
- **1940 - George Washington Carver Elementary:** 6 East 4th Street

The presence of paints, caulks and sealants in good condition are *de minimus* quantities of material at the facilities. Contribution to stormwater runoff is unlikely if the materials are in good condition or included in a controlled demolition setting.

No evidence or records of PCB use or storage at the facilities were reported. The site reconnaissance and electronic survey indicated no electrical power substations or natural gas pipeline compressor stations were historically or currently at the facilities. No spills or leaks were noted at all the electrical transformers observed at or proximate to each of the facilities. The pole-mounted transformer poles were labeled as owned by the City or AEP and all appeared to be in good condition. At this time no stormwater sampling is recommended based on field observations and completion of the electronic survey.

3.2 City Properties with Potential PCB Sources

The following properties were identified as **potential** sources of PCBs:

Municipal Buildings – While the City conducted an assessment of the Municipal Buildings (Section 3.1) and found no obvious sources, City owned buildings and facilities that were constructed prior to 1979 may still utilize electrical equipment and appliances that contain PCBs. Fluorescent light fixture ballasts and transformers are common features in buildings from this era.

If not identified and properly disposed of, these sources can potentially cause exposure during maintenance, replacement, or an accident. The City will continue to utilize proper disposal procedures per the Good Housekeeping and Pollution Prevention Manual and applicable laws and regulations.

City of Salem Electric Department – The City owns and operates its own electricity distribution system. The Electric Department was established in 1892, prior to the 1979 ban; therefore, there is a potential that PCB containing sources could be brought to the facility. However, a facility assessment was conducted and no PCB sources were found. The Electric Department has procedures in place for sampling and lab testing possible PCB sources such as transformers, capacitors, etc., designated holding building during PCB testing, spill response, inspection, removal and proper disposal and record keeping of potential sources of PCBs.

Salem Street and General Maintenance Facilty (Streets Facility) - As a result of an inquiry, the City conducted a field reconnaissance and PCB Testing in 2019. The City investigated potential sources of PCBs in stormwater runoff by determining drainage patterns, researching historic uses, evaluating current operations, and collection of additional media samples. The study found there are low levels of PCB concentrations potentially originating from the Streets Facility. In addition, there are also low levels of PCB concentrations potentially derived from other offsite sources. The research, site visits, and laboratory results support the conclusion that PCB sources are anticipated to be historic or relic and below regulatory action levels for corrective action. There are no apparent discernible PCB sources at the Streets and Maintenacne Facility. The Streets and Maintenance Facility implements a site-specific SWPPP with source controls to minimize the potential discharge of pollutants from the property.

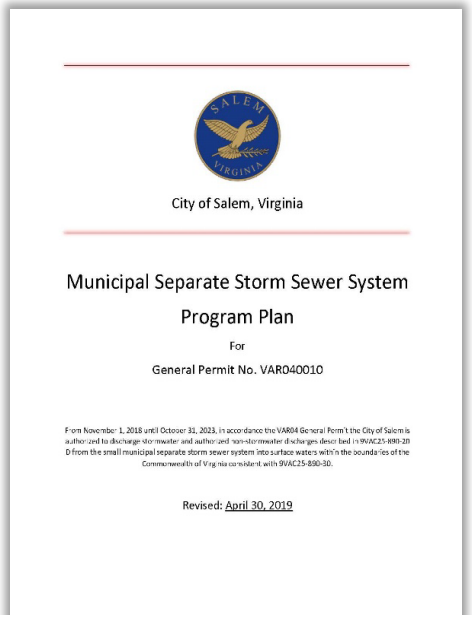
3.3 Land Disturbance Activities

The provisions of the Construction General Permit (CGP) require that contractors install, implement, and maintain control measures as identified in the SWPPP at the construction site to minimize pollutant discharges.

Discharges of stormwater from construction activities that include the demolition of any structure with at least 10,000 square feet of floor space built or renovated before January 1, 1980, to surface waters identified as impaired in the 2016 § 305(b)/303(d) Water Quality Assessment Integrated Report or for which a TMDL wasteload allocation has been established and approved prior to the term of the CGP for PCB are not eligible for coverage under the CGP unless the contractor develops, implements, and maintains a SWPPP in accordance with the CGP that minimizes the pollutants of concern and, when applicable, is consistent with the assumptions and requirements of the approved TMDL wasteload allocations, and implements an inspection frequency consistent with Part II G 2 (a) of the CGP.

4.0 MS4 PROGRAM OVERVIEW

The City's MS4 Permit covers stormwater discharges from areas included within the census urbanized areas. The City's collective efforts, as described in the City's MS4 Program Plan, result in significant reduction of pollutants that may be discharged from its regulated MS4.


City of Salem, Virginia

Municipal Separate Storm Sewer System

Program Plan

For

General Permit No. VAR040010

From November 1, 2018 until October 31, 2023, in accordance the VAR04 General Permit the City of Salem is authorized to discharge stormwater and authorized non-stormwater discharges described in 9VAC25-890-20 D from the small municipal separate storm sewer system into surface waters within the boundaries of the Commonwealth of Virginia consistent with 9VAC25-890-30.

Revised: April 30, 2019

4.1 Minimum Control Measures

The General Permit requires the Program Plan to include BMP's to address the requirements of six MCMs described in Part I E of the General Permit. The following summary of the City's MS4 Program Plan MCMs list laws, programs, and other regulatory mechanisms relied upon by the City that are applicable to reducing PCBs.

4.1.1 MCM 1 Public Education and Outreach on Stormwater Impacts

The City's MS4 Program includes, by reference, a Public Education and Outreach Program (PEOP) that incorporates educational information about TMDL pollutants of concern. The PEOP includes, as Water Quality Issue #3, an increase in stormwater pollution prevention training.

4.1.2 MCM 2 Public Involvement and Participation

The City will post this Action Plan on their stormwater pollution prevention webpage at: https://www.salemva.gov/252/Program-Information . Availability of the Action Plan will increase awareness of the TMDL with web page visitors.

4.1.3 MCM 3 Illicit Discharge Detection and Elimination

MS4 Program includes an Illicit Discharge Detection and Elimination (IDDE) Program with written procedures to detect, identify, and address non-stormwater discharges, including illegal dumping, to the small MS4, along with policies and procedures for when and how to use legal authorities. The City prohibits non-stormwater discharges into the storm sewer system through language provided within an Illicit Discharge Ordinance. The IDDE Program includes a proactive approach to reduce illicit discharges with annual outfall screening to seek out and remove non-stormwater discharges into the MS4. IDDE BMPs are described in the MCM 3 BMPs of the City's MS4 Program Plan.

4.1.4 MCM 4 Construction Site Stormwater Runoff Control

The City has adopted a Virginia Erosion and Sediment Control Program and City Ordinances to regulate stormwater runoff from land disturbance projects which require a construction SWPPP that when implemented and maintained minimizes pollutant discharges from construction activity.

4.1.5 MCM 6 Good Housekeeping

The City's MS4 Program includes a Pollution Prevention/Good Housekeeping Program that includes policies and procedures to ensure that day-to-day operations minimize the exposure of pollutants to rainfall on City-owned and operated properties to the maximum extent practicable. The program is supported with the City's Pollution Prevention & Good Housekeeping Manual and annual training for applicable staff. MCM 6 BMPs in the City's MS4 Program Plan describe pollution prevention and good housekeeping BMPs. A site-specific SWPPP is implemented and maintained at the Streets Facility to minimize the discharge of PCBs.

No new policies and procedures or modifications to existing policies and procedures were identified as necessary to meet the requirements of the special conditions.

4.1.6 Additional Applicable City Codes

In addition to the IDDE, ESC, and SWM Ordinances described in Section 4.1, the following City Code sections also serve as mechanisms to reduce the potential for PCBs discharge to the MS4:

- "*Removal of trash, garbage, etc.,*" as described in the City Code, Article 1, Section 30-4. A violation is a class 4 misdemeanor. Proper disposal of waste can prevent exposure to precipitation and subsequent runoff to the storm sewer.
- "*Allowing noxious, etc., matter or nuisance to be placed, etc., in or upon house, lot, etc.,*" as described in the City Code, Article 1, Section 30-5. The prohibition of noxious, unwholesome or offensive matter can prevent potential of materials stored outdoors on property.

5.0 IMPLEMENTATION OF THE STRATEGY TO REDUCE PCB

The implementation of a strategy to reduce PCBs is a critical step in protecting the environment. As part of the MS4 Program, the strategy focuses on identifying, managing, and eliminating sources of PCB contamination across City owned properties and construction sites, including older infrastructure.

5.1 Evaluation of the Results Achieved by the 2018 - 2023 Action Plan

The City has implemented a comprehensive approach to evaluating properties for the presence of PCBs. This evaluation process involved inspections and surveys of properties, including research to identify any potential sources of PCBs. The evaluation more closely targeted older buildings that may have used materials such as caulking, paint, and electrical equipment containing PCBs. During the 2018 - 2023 MS4 Permit cycle, the City completed all requirements of the MS4 General Permit which also included an in-depth PCB study of the Streets and Maintenance property.

5.2 Adaptive Management Strategies for the 2023 – 2028 Action Plan

Similar to previous years, the City will continue to implement all strategies outlined in Section 6.0, ensuring that all necessary actions to manage and mitigate PCB sources are completed. The City plans to conduct a reassessment to ensure the City of Salem Electrical Department is utilizing the designated holding building during PCB testing, adequately supplied and trained on spill response, conducting inspections, removing and properly disposing of known or suspected PCB materials, and maintaining records of potential sources of PCBs.

If at any point during the term of this permit, the City identifies a previously unidentified significant source of PCBs within the MS4 service area, the City will notify the Department of Environmental Quality (DEQ) in writing. This notification will be made within 30 days of the discovery. The proposed actions in Section 6.0 below represent implementation to the maximum extent practicable.

6.0 SCHEDULE

The City will implement the MS4 Program components described in Section 4 to reduce the potential of PCB discharge to surface waters to the maximum extent practicable. The method of assessment is implemented through the annual reporting process with the review of the effectiveness of each MS4 Program Plan BMP. Table 3 provides a schedule of anticipated actions recommended or planned during the implementation of this Action Plan.

Table 3: Schedule of Anticipated Actions Planned for Implementation of PCB Reduction

Strategies	Method	Timeframe	Metric
Identification of significant sources of PCBs	Assessment of City Properties	Completed	SWPPP developed
Site-specific SWPPPs for City owned properties with the potential to discharge PCBs	SWPPP developed, implemented and maintained for the Streets Facility	Completed and ongoing	SWPPP inspections conducted annually
MS4 Program MCMs developed to address and minimize PCBs	MCMs 1 - 4 and 6 and City Ordinances developed and implemented	Completed and ongoing	Annual reporting
New discoveries previously unidentified significant sources of PCBs reported, if found	Notification to DEQ in writing within 30 days of discovery, if found	Ongoing	Letter, if applicable
Reassessment of Electric Department	Conduct a reassessment of the City of Salem Electric Department PCB handling procedures and record keeping	June 30, 2027	Reassessment Documentation