

**COMMONWEALTH OF VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
DIVISIONS OF WATER PERMITTING AND PLANNING**

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**Subject:** Guidance Memo No. **GM-16-2006**, TMDL Action Planning for Local Total Maximum Daily Loads as Required in the Small MS4 General Permit (VAR04) Effective July 1, 2013 and MS4 Individual Permits

**To:** Regional Directors and MS4 Permittees

**From:** Melanie D. Davenport, Director, Water Permitting Division  
Jutta Schneider, Director, Water Planning Division



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**Copies:**

**Summary:** This guidance document provides staff and permittees with background information and procedures for developing and implementing local Total Maximum Daily Load (TMDL) Action Plans as required in the Special Condition of the 2013-2018 General Permit for Discharges of Stormwater from Small (Phase II) MS4s and MS4 Individual permits.

**Contact Information:**

**Disclaimer:**

**This document is provided as guidance and, as such, sets forth standard operating procedures for the agency. However, it does not mandate any particular method nor does it prohibit any particular method for the analysis of data, establishment of a wasteload allocation, or establishment of a permit limit. If alternative proposals are made, such proposals should be reviewed and accepted or denied based on their technical adequacy and compliance with appropriate laws and regulations.**

**DEFINITIONS** – For the purposes of this guidance document, the following definitions shall apply:

**Best Management Practices (“BMPs”)** – Schedules of activities, prohibitions of practices, maintenance procedures, and other management practices, including both structural and nonstructural practices to prevent or reduce the pollution of surface waters and groundwater systems (From 9 VAC 25-870-10).

**Census Defined Urban Area** (also known as Census Designated Urban Area) – Land areas defined by the United States Census Bureau as urban areas, because they represent densely developed territory, and encompass residential, commercial, and other non-residential urban land uses. The Census Bureau delineates urban areas after each decennial census by applying specified criteria to decennial census and other data (U.S Census Bureau, 2015).

**Load Allocation (“LA”)** - The portion of the loading capacity attributed to (1) the existing nonpoint sources of pollution and (2) natural background sources. LA may include pollutant loadings from a jurisdictions' non-regulated area.

**Maximum extent practicable (“MEP”)** - The technology-based discharge standard for municipal separate storm sewer systems established by CWA § 402(p). MEP is achieved, in part, by selecting and implementing effective structural and nonstructural BMPs and rejecting ineffective BMPs and replacing them with effective BMPs. MEP is an iterative standard, which evolves over time as urban runoff management knowledge increases. As such, the operator's MS4 program must continually be assessed and modified to incorporate improved programs, control measures, BMPs, etc., to attain compliance with water quality standards (From 9 VAC 25-870-10).

**Newly Designated MS4 permittees** – MS4 permittees receiving initial permit coverage under the July 1, 2013 General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems.

**Pollutant(s) of Concern (“POC”)** – The pollutant(s) impairing a water body for which one or more TMDL(s) has been developed.

**Service Area** (also known as Regulated Land) – The conveyances and drainage area served by the permittee's MS4. For Phase II MS4s the service area is a delineation of the conveyances and drainage area that fall within a Census Defined Urbanized Area. For Phase I MS4s the service area is a delineation of the conveyances and drainage area that fall within the entire jurisdiction (e.g. county) (adapted from VDEQ, Guidance Memo 15-2005).

**TMDL Implementation Plan** – A document guided by an approved TMDL(s) that at a minimum provides details of the BMPs to address the load allocation of one or more TMDLs. The plan includes measureable goals needed to achieve pollutant(s) source load reductions; outlines a schedule to attain water quality standards; and costs, benefits, and environmental impacts to reduce pollutant(s) and remediate impaired waterbodies.

**Total Maximum Daily Load (“TMDL”)** – The sum of the individual wasteload allocations (WLAs) for point sources, load allocations (LAs) for nonpoint sources (i.e. unregulated sources), and a margin of safety.

**Unit Area Load (UAL)** - The total amount of a pollutant leaving an area which can reach a water body from one or multiple sources per unit area (e.g. pounds of total phosphorus/acre/year). A TMDL prescribes a reduction in certain source categories or land uses to meet water quality use attainment which may result in a set reduction to the UAL (adapted from Benham et al. 2009).

**Unregulated Land** – Unregulated land means those acres that are not owned or operated by the MS4 permittee AND are located outside the permittee's regulated land (VDEQ, Guidance Memo 15-2005).

**Wasteload Allocation (“WLA”)** - The portion of a receiving waters' pollutant loading capacity that is allocated to existing or future point sources of pollution, such as an MS4.

***For terms not defined above, please refer to the 9 VAC 25-890-10, 9 VAC 25-870-10, or 9 VAC 25-31-10 of the Virginia Administrative Code.***

## **BACKGROUND**

Since 1998 DEQ has developed Total Maximum Daily Loads (TMDLs), with public input, to restore and maintain the water quality of impaired waterbodies. Section 303(d) of the Clean Water Act requires that wasteload allocations be implemented through the National Pollutant Discharge Elimination System (NPDES) permit program. In 2002, EPA issued guidance directing states to develop and assign WLAs to MS4s during TMDL development. Loadings from all land uses, including urban land uses, are characterized to develop each local watershed TMDL model. As point sources, MS4s are assigned individual or aggregate WLAs in TMDLs for receiving streams or watersheds to which the MS4 discharges. These WLAs have been developed using methodologies that have varied depending on best available data and regulatory requirements applicable at the time of TMDL development. Regardless of the methodology used to develop a WLA, the *reduction* assigned to each land use or source category under the purview of the MS4 is the most relevant information in the TMDL report when developing a TMDL Action Plan. The general methodologies and basis of MS4 WLAs are described as follows:

- WLAs may be developed by categorizing the land uses within the Census Defined Urban Area. This analysis is typically based on the most recent land cover dataset (e.g. the National Land Cover Dataset for 1992, 2001, 2006, or 2011). Unit area loads (UALs) for the pollutant(s) of concern (POCs) are then developed for each land use. Unit area loads are not explicit in most local TMDL reports, as they are calculated in spreadsheets or in the model's internal calculations, and generally are not reported separately. The WLA is the product of the regulated area for each land use and the respective UAL.
- In some instances at the time of TMDL development, medium to high density development and/or impervious land cover areas were used as a surrogate for the regulated MS4 area in the absence of a clearly defined service area.
- As MS4s delineate their service areas, future WLAs can be developed by categorizing the land uses within the MS4 service areas and multiplying the acreage for each category by the respective UAL for the POC.

Pollutant loadings from within the jurisdictional boundary (e.g. city or county boundary) may also be represented by load allocations (LA) for those areas assumed to be outside of the regulated MS4 service area. Permittees are not required to incorporate approaches for addressing those LAs into their Action Plans. LAs are addressed through TMDL implementation plans (IPs) which characterize best management practices that may be used to reduce unregulated pollutant loads, which includes nonpoint source pollutants. This guidance document only speaks to the requirements to address WLAs to meet the Special Condition for approved TMDLs other than the Chesapeake Bay TMDL ("Special Condition for Local TMDLs").

The Special Condition for Local TMDLs in the 2013 General VPDES Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (VAR04) ("GP") and the eleven Phase I Individual MS4 Permits require permittees to develop Action Plans that address all POC(s) for which the permittee has been assigned a WLA under an approved TMDL. The local TMDL Action Plans should identify BMPs and other management strategies that the permittee will implement to meet the TMDL WLA and achieve compliance with the Special Condition. Local TMDL Action Plans can be implemented in multiple stages over multiple permit cycles using an adaptive, iterative approach provided the permittee demonstrates adequate progress toward achieving reductions necessary to meet the WLA(s). This approach is consistent with the maximum extent practicable standard that all MS4 permittees must meet. Implementation of the TMDL Action Plans is tracked via the permittee's Annual Reports.

## **PERMIT REQUIREMENTS**

With the exception of newly designated permittees and permittees not identified in TMDLs, the Phase II Small MS4 GP requires that:

1. Action Plans for local TMDLs approved before July 1, 2008 must be completed by July 1, 2015 and submitted with the Annual Report due October 1, 2015.
2. Action Plans for local TMDLs approved between July 1, 2008 and June 30, 2013 must be completed by July 1, 2016 and submitted with the Annual Report due October 1, 2016.

Newly designated MS4 permittees should have included a schedule for developing local TMDL Action Plans as part of the MS4 Program Plan and registration statement submitted to obtain initial coverage under the 2013 GP and should follow that approved schedule. Likewise, Phase I permittees must follow the schedule in their Individual Permit. In accordance with Section I.B.7 of the GP, permittees must include an estimated date by which they will achieve the assigned WLAs as part of the reapplication package.

DEQ may request additional information in the review process, as needed. In the Action Plan permittees are responsible for establishing schedules and milestones to meet the assigned WLA(s). The approved Action Plan schedule will supersede any implied or explicit completion date or schedule provided in the local TMDL or implementation plan. Permittees are strongly encouraged to work closely with the DEQ regional TMDL and MS4 staff throughout the development of the Action Plan(s).

## **APPLICABLE WLAs**

Prior to Action Plan development, permittees will need to determine the local TMDLs in which the MS4 has been assigned a WLA. Permittees may search for approved local TMDLs by city and/or county on the [TMDL Reports](#) page of DEQ's website. Permittees may verify whether they are subject to a local TMDL by using the Virginia Environmental Geographic Information System (VEGIS) to determine the waterbodies to which the MS4 discharges. This information should be refined and/or corrected as the permittee completes the mapping efforts required under GP Section II.B.3. General instructions for using VEGIS and a link to the program are located on [DEQ's VEGIS website](#).

Detailed information regarding the portion of each watershed that drains to an MS4 system may not be available during local TMDL development and WLA assignment, so a conservative, land-use based approach is often used. It is important to note that the actual areas within a local TMDL watershed that are subject to a MS4 WLA are those areas that are specifically regulated under the MS4 permit. TMDL studies do not attempt or intend to define the MS4 regulatory area. Rather, the areas used to develop loadings associated with the MS4 permits in local TMDLs (e.g. impervious developed or Census Defined Urbanized Areas) are only surrogates for establishing WLAs and estimating a pollutant loading contributed by these permitted sources.

DEQ encourages permittees to participate in both the local TMDL and implementation plan development processes, which may provide insight into BMP applicability and strategies to meet water quality standards. If an implementation plan has been developed for a TMDL, permittees may examine the implementation plan for appropriate non-point source BMPs for the POC and other strategies for reducing pollutants. While an implementation plan may provide strategies for permittees to consider, permittees are not required to follow the strategies listed in an implementation plan to address their WLA(s). Additionally, implementation plans will not be written to prescribe what regulated entities like MS4s must do to meet their WLA.

## **Aggregate WLAs**

Permittees with adjacent or interconnected land areas may either be assigned one WLA each or an aggregated WLA to represent their discharges to the TMDL water body. Aggregated WLAs may be

developed when permittees are closely interconnected and there is not sufficient information or detail to disaggregate the WLA. An aggregated WLA can be addressed when MS4 permittees work together to create a collaborative watershed strategy to meet these WLAs. Otherwise, the overall reduction assigned to the aggregated WLA should be addressed consistently by all applicable MS4 permittees. As service areas become more precisely delineated and ultimately become the basis for WLAs, aggregation of MS4 WLAs may occur less frequently.

### **Prospective WLAs for Existing TMDLs**

Newly designated Phase II, existing Phase II MS4 permittees with expanded urbanized areas as the result of the 2010 Census, and existing MS4 permittees in TMDL watersheds that pre-date the practice of assigning WLAs to MS4s may drain to waters for which a local TMDL has been developed. These permittees may not currently have a WLA assigned to them under these TMDLs.

DEQ continually updates existing TMDLs to foster implementation. In general, the highest priority for TMDL revision is given to the most outdated TMDLs that are undergoing TMDL nonpoint source implementation plan development and nutrient or sediment TMDLs. While some TMDL revisions may be initiated due to unforeseen near-term causes (e.g. significant permit change or identification of fundamental errors in TMDL modeling), DEQ will make every effort to advertise planned TMDL updates on the TMDL priorities web page and the 303(d)/305(b) Integrated Report.

While not a requirement, permittees may choose to estimate pollutant export and loadings from all regulated areas to prepare for TMDL revisions and to prioritize jurisdictional watershed planning. The steps needed to estimate the loading include the following:

- 1) Identify the applicable TMDL(s) and pollutant(s).
- 2) Determine where and how much area is associated with the MS4 and identify how the TMDL(s) dealt with that associated area. Identify areas that may overlap or are interconnected with another MS4's jurisdiction (e.g. VDOT or other) as these areas may lead to an aggregate WLA in the TMDL and engagement with other MS4s.
- 3) Determine the UAL according to the original TMDL's basis for MS4 WLA calculations (or pollutant load runoff for the land uses associated with the MS4 area).
- 4) Calculate the loadings from the UAL and area per land use and sum. If overlapping and comingling with another MS4 is currently impossible to separate then develop an aggregated loading.

#### *Existing Permittees with Expanded Area*

Existing permittees who were previously assigned a WLA and whose urbanized area expanded as a result of the 2010 Census are required to meet the current WLA(s) and associated reductions assigned prior to the identification of an expanded urbanized area. Should the WLAs be modified by DEQ to incorporate the expanded urbanized area, permittees will be required to address the updated WLA and associated POC reductions in future permit cycles.

#### **New permittees**

New permittees that discharge to impaired waterbodies with one or more approved local TMDL(s) may not have been assigned WLA(s) yet. The Department recommends permittees begin planning for future WLAs by considering the reductions assigned to relevant urban land uses (e.g. for sediment) or to the relevant source categories (e.g. for bacteria). Relevant land uses may be termed "Medium Intensity Developed" and "High Intensity Developed" or "Pervious Developed" and "Impervious developed" in the TMDL table(s) describing existing and allocated pollutant loadings by land use type. Relevant source categories are typically humans and pets.

#### **Early TMDLs**

TMDLs issued prior to 2004 do not consistently assign WLAs to MS4s; however, there is some regional variation regarding this practice. For MS4s not assigned a WLA, the pollutant loadings are represented in

the LA. The Department recommends permittees begin planning for future WLAs by considering land use based reductions as discussed above.

### **ACTION PLAN CONTENT**

The proposed strategies to demonstrate compliance with their assigned WLA(s) will be determined by the permittee; however, the Action Plan should also include justification for these choices. Permittees should address the following in their Action Plan(s) (*examples are given*):

1. The name(s) of the Final TMDL report(s);  
*Examples: Total Maximum Daily Load Development for the Back Bay, North Landing River, and Pocaty River Watersheds.*
2. The pollutant(s) causing the impairment(s);  
*Examples: E. coli, and Enterococci Due to Recreation Use Impairments, and Total Phosphorus Due to Low Dissolved Oxygen in Aquatic Life Use Impairments*
3. The WLA(s) assigned to the MS4 as aggregate or individual WLAs;  
*Examples:*
  - o *E. coli aggregate WLA of 2.32E+12 colony forming units per year (cfu/yr) ; 94% reduction for subwatershed 1 in the North Landing River;*
  - o *E. coli of aggregate WLA of 1.31E+12 cfu/yr; 87% reduction for subwatershed 4 in the Pocaty River;*
  - o *Enterococci aggregate WLA of 4.17E+11 cfu/yr ; 97% reduction in subwatershed 6 on Beggars and Bridge Creek; and*
  - o *Total phosphorus aggregate WLA of 1.08 kg/yr; 63.96% reduction in the Pocaty River*
4. Significant sources of POC(s) from facilities of concern owned or operated by the MS4 permittee that are not covered under a separate VPDES permit. A significant source of pollutant(s) from a facility of concern means a discharge where the expected pollutant loading is greater than the average allocated pollutant loading for the land use identified in the TMDL;  
*Examples:*
  - o *Evaluate permittee owned/operated properties for potential sources of pollutants*
  - o *Identify and characterize potential sources by land use type (using GIS and zoning maps) and the presence/absence of MS4 outfalls on the properties*
  - o *Identify any site review, runoff characterization, and site visits performed*
  - o *Summarize or attach any report documenting evaluation of owned/operated properties*
5. Existing or new management practices, control techniques, and system design and engineering methods, that have been or will be implemented as part of the MS4 Program Plan that are applicable to reducing the pollutant for which the WLA was established;  
*Examples:*
  - o *Changes to the permittee's Code/Ordinance in order to facilitate a reduction in pollutant discharges. Including, but not limited to the following:*  
*Reduce the threshold for regulated land disturbing activities (Sediment, Phosphorus); Institute stream buffer protection (Sediment, Phosphorous and Bacteria); Prohibit feeding of waterfowl (Bacteria)*
  - o *Incorporation of new best management practices (BMPs) into the MS4 Program Plan Stormwater Pollution Prevention Plans (Sediment and Bacteria) - Develop a stormwater pollution prevention plan (SWPPP) for one or more named parks, areas, or facilities; Pollution Prevention Inspections (Sediment and Bacteria) - Conduct an annual pollution prevention inspection at a park, area or facility; Land Disturbing Activity Tracking (Sediment, Phosphorus) – Maintain the existing program to track land disturbance activities to inform routine inspections, as-built inspections, surveys, and identification of areas likely to incur heavier than normal sediment loading; Sponsorship of Adopt-A-Stream Program (Sediment,*

Phosphorus and Bacteria - Promote the Adopt-A-Stream program by sponsoring an annual stream clean-up day; Social Media (Sediment and Bacteria) – Use social media accounts to deliver stormwater program messages and to distribute stormwater related information to its citizens; Public Events (Sediment and Bacteria) - Participate in public events, for example the annual County Fair and the annual Heritage Festival to deliver stormwater program messages to citizens; Illicit Discharge Tracking and Documentation (Sediment and Bacteria) - Track and document suspected and illicit discharges, investigation, compliance and enforcement actions in accordance with the procedures included in the City/County Illicit Discharge Detection and Elimination (IDDE) Standard Operating Procedures Manual.

6. Legal authorities such as ordinances, state, federal, and other permits, orders, specific contract language, and interjurisdictional agreements applicable to reducing the POCs identified in each respective TMDL;

*Examples:*

*Describe implications and name the authorities, for example: Water Protection Ordinance (sediment, phosphorus and bacteria), MS4 Program Plan (sediment, phosphorus and bacteria), Public Services Standards Manual (sediment, phosphorus and bacteria), Animals and Fowl Ordinance (bacteria), Solid Waste Management and Recycling Ordinance (bacteria)*

7. Enhancements to public education, outreach, and employee training programs to also promote methods to eliminate and reduce discharges of the POC(s) for which a WLA has been assigned;

*Examples:*

- *Cross training of Public Works, Animal Control, and Waste Management staff and an associated checklist to improve identification of sediment, phosphorus and bacteria sources*
- *“Scoop the poop” signs at parks (identify park) (bacteria)*
- *“Adopt A Stream flyer (sediment, phosphorus)*
- *“Storm-wise” brochure (sediment, phosphorus)*

8. A schedule of interim milestones and implementation of the items in 5, 6, and 7;

*Examples:*

<i>BMP/Milestone Activity</i>	<i>Schedule</i>
<i>Submission of Local Action Plan</i>	<i>October 1, 2015</i>
<i>Social Media</i>	<i>Biannual (before and after hurricane season)</i>
<i>Public Events</i>	<i>Biannual</i>
<i>Employee Cross Training</i>	<i>Every two years</i>
<i>MS4 Outfall Dry Weather Field Screening-Monthly</i>	
<i>Illicit Discharge Tracking</i>	<i>Activity Monthly/ Report Annually</i>

9. Methods to assess TMDL Action Plans for their effectiveness in reducing the pollutants identified in the WLAs; and

*Examples:*

*Goals in the Action Plan to reduce the POC by a percentage would describe water quality monitoring plans and how findings from water quality monitoring would inform best management practice planning, discharge/source elimination efforts and perhaps education/outreach.*

*Goals in the Action Plan to build structural BMPs would be evaluated for effectiveness via estimated load reductions achieved.*

*Programmatic goals in the Action Plan (e.g. institute ordinances, provided education/outreach), would discuss any follow-up questionnaires to recipients of*

*outreach, or assessments of the effectiveness of the ordinance. Tracking the number of waste disposal bags used per year or providing a pet waste survey at a high-use area would each be ways to track effectiveness of a pet waste ordinance.*

10. Measurable goals and the metrics that the permittee and DEQ will use to track those goals (and the milestones required by the permit). Evaluation metrics other than monitoring may be used to determine compliance with the TMDL(s).

*Examples:*

*Goals in the Action Plan to reduce the POC by a percentage (e.g. ) 60% would be measured by water quality samples. Whereas a goal to institute pet waste ordinances would characterize and quantify outreach activities and pet stations.*

### **Approaches to meeting WLAs**

Action Plans should be developed in accordance with information and data in the TMDL. However, it is not necessary for a permittee to employ the same models and tools used to develop the TMDL in development and evaluation of the Action Plan. For example, watershed-based TMDLs often use Hydrological Simulation Program-Fortran (HSPF) to model the hydrology and pollutant fate and transport. The permittee may use other tools and models that may be better suited to their specific circumstance to develop a control strategy and evaluate alternatives. Permittees should consult with DEQ regional TMDL staff if they have questions regarding the methodology and data used in development of the MS4 TMDL WLAs.

Permittees may employ both structural and non-structural BMPs to address WLAs. There are a number of other resources permittees may reference to identify BMPs that may be implemented to address local WLAs. Reports are available through the [Center for Watershed Protection](#) and the [Water Environment Research Foundation \(WERF\)](#) that provide information on BMPs that can be used to address non-nutrient TMDLs. Existing implementation plans may also be valuable resources for permittees for information concerning relevant BMPs, BMP reduction efficiencies, cost and benefits, and educational strategies to address POC reductions necessary to meet the WLAs. Demonstration of adequate progress may be achieved through tracking, monitoring, and/or reporting of BMP implementation, and/or other strategies as approved by DEQ as part of the TMDL Action Plan.

#### *Nutrient and Sediment TMDLs*

In May of 2015, DEQ issued Guidance Memorandum 15-2005 to provide background information and procedures to meet the Chesapeake Bay TMDL Special Condition requirements in the 2013-2018 General Permit for Discharges of Stormwater from Small (Phase II) MS4s, the reissued Phase I MS4 permits, and any Individual Phase II permits that were issued. Permittees may refer to Guidance Memorandum 15-2005 for strategies and information on how to calculate reductions from BMPs in watersheds with local nutrient and sediment TMDLs. It should be noted that the Action Plans for local TMDLs **do not** need to follow the requirements for the Chesapeake Bay TMDL Action Plan. BMP efficiencies used in GM 15-2005 can be used in Action Planning for local watersheds. Reduction numbers assigned in GM15-2005 may not be equivalent to reductions required to meet a local TMDL, because instream conditions and delivery of the pollutant differ between the tidal waters and the local water body. DEQ encourages permittees to review reduction requirements for both the Chesapeake Bay TMDL and the local TMDL for planning purpose in order to use resources most effectively. While TMDL implementation progress can be credited toward progress in all the watershed scales that it serves (e.g. local and Chesapeake Bay) permittees should keep accounting of progress for local watersheds separate from progress towards meeting the Chesapeake Bay TMDL requirements. If a permittee intends to track progress using only one accounting method, then they should use the more restrictive of the local or Chesapeake Bay TMDL reduction requirements to satisfy conditions of both. Documentation should be kept in the Action Plan describing the reduction requirements.

#### *Pathogenic Pollutant TMDLs*

For pathogenic pollutants (i.e. Enterococci, fecal coliform, and E. coli), any illicit discharges (e.g., combined sewer overflows, illicit connections and discharges, cross-connections, leaking pipes, or

separate sewer overflows) must be addressed by the permittee regardless of the assignment of a WLA and should be described in the TMDL Action Plan when a WLA is assigned. Beyond illicit discharges, existing programmatic practices, ordinances, and outreach currently in place under the MS4 program may be sufficient to address anthropogenic sources of bacteria. For pathogen TMDLs permittees are encouraged to consider practices such as public outreach and education to influence behaviors. This may include signage and supplies to encourage the collection and removal of pet waste at areas of high concentration, for example dog parks; residential outreach through fliers or pamphlets included with utility bills; and other education programs. Addressing areas frequented by homeless populations or outdoor public areas where there are no sanitary facilities may be areas that MS4 permittees also choose to target. Wildlife sources may be addressed (if applicable) through existing ordinances, trash control to minimize presence of nuisance wildlife, and improvement of vegetated buffers around stormwater management ponds to deter geese. The source assessment chapter in the TMDL report describes which sources were most prevalent in the watershed(s) at the time the TMDL was developed. Permittees may wish to reference the Environmental and Water Resource Institute's 2014 [Pathogens in Urban Stormwater Report](#) for techniques that can be used to address these TMDLs.

#### *Polychlorinated Biphenyl (PCB) TMDLs and Other Toxicants*

The TMDL report will identify sources of PCBs known during TMDL development. Although urban areas often contain unidentified contaminated areas, common sources can include industrial sites associated with specific Standard Industrial Classifications (SIC; VDEQ 2016), locations where equipment containing PCBs is/was stored or handled, and/or past spill locations. Metal recycling operations and railyards are good examples of industrial sites that may be a source of PCBs. The recommended method to address these contaminants is through a pollutant minimization approach. Often times a first step would include a desktop analysis where federal, state, or local records are reviewed. For instance, MS4 permittees may look for superfund sites within the service area by going to EPA's website at <https://www.epa.gov/superfund/search-superfund-sites-where-you-live>. Permittees may then consider tracing back through the system after identifying past and current high risk sites or land uses, followed by confirmation monitoring of soil and/or stormwater runoff when appropriate. Litten (2007) describes this type of approach as either a "top-down" sampling effort that begins with a known source that is confirmed, or alternatively a "bottom-up" sampling approach that begins with limited knowledge and engages in a systematic hunt. Upon discovery of a source of PCBs, a collaborative effort with DEQ may be necessary to address the site. There is also prospective benefit from exploring the removal of PCBs from existing BMPs (Schuler 2015) already established to address nutrient or sediment loadings.

PCBs, as well as mercury and polycyclic aromatic hydrocarbons (PAHs), make initial entry into surface waters in miniscule quantities from stormwater or during recent or historic releases. The pollutant minimization approach described above is recommended to be used as the basis for any TMDL Action Plan addressing mercury and PAHs.

### **COMPLIANCE & MODIFICATIONS**

To demonstrate compliance with the Special Condition for Local TMDLs, permittees must submit TMDL Action Plans that include all of the items listed in Section I.B in accordance with the schedule described in the permit. Permittees are responsible for meeting the schedule and milestones set in the approved Action Plan. If a permittee determines that elements of the approved Action Plan are insufficient to meet the WLA, a modification request should be submitted to DEQ as soon as the permittee determines that the plan needs to be updated.

Modifications to the approved Action Plan may be made in accordance with the MS4 General Permit Section II.F.1. The Department may also request that the Action Plan be modified to include additional and/or alternative strategies to address the POC. The Department encourages permittees subject to aggregate WLA(s) to take a collaborative approach to addressing those WLAs.

The permittee must make adequate progress in meeting the WLA in accordance with the approved Action Plan(s). Permittees are encouraged to discuss any concerns regarding demonstration of adequate progress with DEQ's MS4 permitting staff.

## **OTHER CONSIDERATIONS**

### *Multiple WLAs*

MS4 permittees may be assigned multiple TMDL WLAs. Permittees may prioritize TMDL Action Plan implementation using best professional judgment, including knowledge of the local watersheds, the local infrastructure, and insight into local water quality planning efforts to determine the number and types of BMPs that will be necessary to meet the requirements of the local TMDLs. The permittee should include as part of the Action Plan a section that establishes the justification for the prioritization and the proposed implementation schedule. If appropriate, permittees may address multiple TMDLs within a single Action Plan, although all applicable TMDL WLA's must be addressed in accordance with the schedule described above.

### *Chesapeake Bay TMDL WLAs*

As previously mentioned, DEQ issued Guidance Memorandum 15-2005 to address reductions required by the Chesapeake Bay TMDL for MS4 permittees. While the general methods of GM15-2005 can provide insight, the Chesapeake Bay TMDL was modeled at the tributaries' fall lines (roughly along interstate 95) and with the goal of determining pollutant loadings reaching the Chesapeake Bay. Local TMDLs determine the allowable pollutant loading at the watershed scale for impaired stream or river segments. While a BMP may be used to meet pollutant reductions in both the Chesapeake Bay TMDL and a local TMDL, the estimated pollutant reductions will be different for reasons explained in the "Nutrient and Sediment TMDLs" section.

### *TMDL Water Bodies No Longer on the Impaired Waters List*

TMDLs are planning tools developed on a watershed scale to improve water quality in one or more impaired assessment units (e.g. stream segments). There are several potential outcomes after the completion and implementation of a TMDL. An MS4 may discharge directly to an impaired segment or within an impaired segment watershed. After successfully implementing the TMDL Action Plan the local impairments may be remediated. In some cases, changes in a designated use or water quality standard may result in all applicable TMDL segments being removed from the impaired waters list. These are cases where there is evidence to suggest the WLA is being met. However, the MS4 permittee should document the current level of activity in the Program Plan and identify the WLA that was assigned in the TMDL.

## **References**

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