

**General Guidance for Developing a  
a Stormwater Wasteload Allocation  
(SW-WLA) Implementation Plan**



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## **Introduction**

This document provides Maryland's local jurisdictions with technical recommendations on how to develop implementation plans for Total Maximum Daily Load (TMDL) Stormwater Wasteload Allocations (SW-WLAs). It builds upon information provided in the current guidance document *Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated* (MDE 2011), and subsequent future versions of this document. It is important to emphasize that the following document merely provides technical recommendations, and other reasonable approaches taken by local jurisdictions to developing SW-WLA implementation plans could be acceptable as well, as discussed below.

A TMDL is the pollutant loading required to achieve specific water quality standards for a particular waterbody. TMDLs provide comprehensive pollution reduction targets across all sectors in a watershed, specifying Wasteload Allocations (WLAs) for all point sources (including municipal wastewater treatment plants, industrial process water discharges, and regulated urban stormwater) and Load Allocations (LAs) for nonpoint sources (including agriculture, non-regulated urban stormwater, and forests). SW-WLAs represent the portion of the WLA assigned to regulated urban stormwater sources.

For permitted Phase I municipal separate storm sewer system (MS4) jurisdictions, SW-WLA implementation must be addressed as part of their permit required restoration plans. Although the intent of this document focuses on the narrowly-defined purpose of providing guidance to regulated stormwater dischargers, most of the recommendations outlined here could also be applied in creating implementation plans for urban LAs. This is discussed in more detail later in this section.

Within this guidance are suggestions on specific data elements and modeling procedures that local jurisdictions could use to track and report progress towards achieving SW-WLAs. It is important to emphasize that these are recommendations, and local jurisdictions can apply different approaches in developing SW-WLA implementation plans, as long as the plan identifies the management action, controls and practices that will, when implemented, achieve the SW-WLAs. Additional guidance documents providing further recommendations for specific TMDL and SW-WLA pollutants, including nutrients, sediments, PCBs, trash, bacteria, and toxics have been developed by the Maryland Department of the Environment (MDE). These can be found on Maryland's TMDL Data Center website at:

<http://www.mde.state.md.us/programs/Water/TMDL/DataCenter/Pages/TMDLStormwaterImplementation.aspx>.

Also, for further recommendations on SW-WLA implementation, the Assurance of Implementation section of TMDL reports could serve as a useful resource for local jurisdictions. This section generally describes information on the current programs that are in place to facilitate TMDL implementation, potential funding mechanisms for implementation efforts, and technical information on management practices.

The recommendations for addressing the specific technical aspects of a SW-WLA implementation plan are outlined in the next section; however, prior to developing the plan, local jurisdictions should first check the latest *Integrated Report of Surface Water Quality in Maryland* (MDE 2014a) to determine whether the applicable waterbody is still identified as impaired for the TMDL pollutant. Information about the Integrated Report can be found on the Water Quality Assessment Report page of MDE's website at:

<http://www.mde.maryland.gov/programs/water/tmdl/integrated303dreports/pages/programs/waterprograms/tmdl/maryland%20303%20dlist/index.aspx>

Following the approval of the TMDL and prior to the development of the SW-WLA implementation plan, if current water quality monitoring data indicate that the waterbody is now meeting all applicable water quality standards, it may be more appropriate to develop a plan that focuses on watershed protection rather than restoration. If this were to occur, an individual impairment listing (unique waterbody-stressor combination) will shift from Category 4a of the Integrated Report to Category 2. These watershed "protection" plans should discuss how to manage any changes that are projected to occur in the watershed, such as using environmental site design (ESD) to the maximum extent practicable (MEP) for new development, to ensure that the waterbody continues to meet the applicable water quality standards. The protection approach is also applicable in cases where a TMDL assigned an "informational" SW-WLA to a discharger. Informational SW-WLAs are allocations that do not require reductions from the applicable permitted entities, where the entity's allocation is equal to its baseline load. An "informational" allocation is often assigned when the loading from a given permitted entity or source is minimal, or when reducing the load contribution from the source would have a limited impact on meeting the TMDL goals.

Although this document was developed to provide guidance for addressing SW-WLAs (urban stormwater allocations assigned to NPDES-regulated stormwater dischargers), as previously mentioned, there are many recommendations described within this document that would be useful for non-regulated jurisdictions or entities who are developing an implementation plan to meet an urban stormwater LA. There would, however, be several key differences. First, LAs are not provided in the TMDL Data Center WLA Search tool. Therefore, they would need to be extracted or calculated directly from the TMDL report. Furthermore, since MS4 permits require jurisdictions to submit a variety of documents beyond just the SW-WLA Implementation Plan, many elements of what the state and federal government consider to be a complete watershed implementation plan are not addressed in the Technical Recommendations section of this document.

Any complete watershed implementation plan should include elements addressing public involvement, coordination, and financial needs relating to proposed actions. The plan should describe how the public will be engaged during the implementation process. An effective process for communicating with the public is critical to successful implementation, because access to private land is often essential for implementation projects, and implementation projects cause changes that are often controversial. Urban LAs, which are not subdivided among individual urban sectors, as SW-WLAs generally

are, could be associated with urban stormwater conveyance systems that are owned and operated by multiple entities, including more than just the local jurisdiction. These include other local jurisdictions, state government, the federal government, and non-governmental organizations (i.e., local watershed groups) and institutions. Local jurisdictions should coordinate with these other entities, as it relates to the implementation of BMPs and management strategies, outreach and education, and follow-up monitoring. For instance, local watershed groups routinely monitoring the watershed stream network and perform implementation. Local jurisdictions may be able to cut down on the costs associated with monitoring, implementation, and outreach by coordinating with these local watershed groups. Often local watershed groups are also able to plan and install practices more quickly in the watershed than local jurisdictions. Therefore, including them in the planning process can lead to more rapid implementation. The implementation plan should describe these coordination efforts. In general the greater the coordination among all sectors, the easier the TMDL implementation process becomes. Lastly, plans should describe the strategy for addressing the financial needs relating to key management actions and BMPs, both in the short term and the long term. This generally consists of two components, cost estimates and funding. Cost estimates should be itemized, whereas the funding portion should describe the potential sources for paying the costs.

The federal Clean Water Act's Section 319 Nonpoint Source Program indicates that there are nine fundamental components of an effective watershed implementation plan (MDE 2014b). These elements are not only applicable to a holistic watershed implementation plan, but they can also be applied to plans for individual sectors within a watershed, i.e., urban stormwater. The technical recommendations outlined in the next section of this document, in addition to the public involvement, coordination, and funding elements described above correlate to the nine fundamental components of an effective watershed implementation plan, per the federal Clean Water Act's Section 319 Program. The Section 319 Nonpoint Source Program could also be a source of funding for non-MS4 jurisdictions for BMPs and management strategies being considered for addressing urban LAs. More information about how local jurisdictions can obtain funding for management strategies via the Section 319 Program can be found at (MDE 2014b):

<http://www.mde.state.md.us/programs/Water/319NonPointSource/Pages/Programs/WaterPrograms/319NPS/index.aspx>.

### **Technical Recommendations**

1. Determine the baseline load for the specific pollutant and determine the percent reduction required to meet the allowable SW-WLA
  - a. Determine the baseline pollutant loadings by source and location. This can be done using TMDL modeling information, Chesapeake Bay Program (CBP) modeling information (i.e., the Maryland Assessment Scenario Tool [MAST], for nutrients and sediments), or locally developed modeling tools. It is recommended that locations and types of pollution sources be identified. For some TMDLs, such as nutrients and sediments, this may be done by using unit loading rates for different land-use types and stormwater treatment levels. However, for some TMDLs, such as bacteria, sources might be defined by methods other than land-use based loading analyses, such as by source organism (see the pollutant specific guidance document on MDE's TMDL Data Center website for further recommendations).
  - b. Use the best available land-use/land-cover (LULC) data for these pollutant load reduction modeling efforts. Often, local jurisdictions have more detailed, current, and accurate LULC data than the State, CBP, and other data used in TMDL development.
  - c. Local jurisdictions may have land-use specific loading rates that they have calculated based on local water quality monitoring data. These rates are spatially unique and often have a high degree of accuracy. Local jurisdictions are encouraged to use these loading rates in their modeling efforts, as long as the loading rates are deemed to be scientifically defensible. Although some local jurisdictions have very accurate and spatially unique loading rates, many TMDLs have been developed using highly detailed and complex models that have been specifically created for use in a particular watershed. The loading rates used in these modeling efforts are based on extensive monitoring data collected for the purposes of TMDL development. For ease of implementation, some local jurisdictions may want to apply the same loading rates used in the TMDL. This allows for consistency between the SW-WLAs and their implementation plans and consequently makes tracking progress easier. For more guidance on the loading rates and methods applied in TMDL models, please see the pollutant specific guidance documents available on MDE's TMDL Data Center.
  - d. The assessment of baseline conditions should be consistent with the year/time period of the baseline conditions within the TMDL analysis. This year or time period usually reflects when the monitoring data used to calibrate the TMDL model was collected or the LULC data year applied within the TMDL modeling analysis. It is recommended that the local analysis reflect an evaluation of Best Management Practices (BMPs) instituted up to the TMDL's baseline condition. Baseline year/time period information has been provided for local jurisdictions in MDE's TMDL/WLA database on the TMDL Data Center website.



- that local jurisdictions should apply to maximize efficiency and reduce costs when implementing SW-WLAs.
- b. During the Phase II Watershed Implementation Plan (WIP) development process associated with Chesapeake Bay nutrient and sediment TMDLs, many local jurisdictions created and submitted county WIPs to MDE. The BMP strategies in these WIPs may also help address other pollutants, such as bacteria and some toxic substances. For further information on how to quantify the load reductions associated with individual pollutants, please see the specific guidance documents for these pollutants on MDE's TMDL Data Center website.
  - c. Since local TMDLs are at a smaller scale than the county Phase II WIP strategies, instead of developing new strategies, local jurisdictions could develop consolidated SW-WLA implementation plans and partition BMPs and management actions from the larger scale WIP down to the individual SW-WLA watersheds. The local jurisdictions would still have to calculate the specific reductions for each local TMDL watershed per pollutant and demonstrate that the reductions meet the required SW-WLAs.
  - d. For all pollutants and BMPs not addressed in the *Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated* document (MDE 2011), scientifically defensible BMP efficiencies should be applied. These efficiencies should be peer reviewed/vetted and should be based on statistically significant monitoring data.
3. Outline a schedule for BMP implementation and establish a final date for meeting required load reductions
    - a. Provide an estimate (date/year) of when implementation actions and resultant pollutant reductions will be achieved. It is recommended that interim, milestone dates for certain actions and expected reductions be included as well.
  4. Compare the expected pollutant reductions to the SW-WLAs and outline the process and criteria for evaluating implementation progress
    - a. Include a comparison of the total expected urban stormwater pollutant reductions from the combined suite of planned management practices and control actions to the SW-WLA required reductions.
    - b. Describe the current local system for tracking and reporting BMPs and management actions (e.g., annual reporting).
    - c. It is recommended that local jurisdictions implement an adaptive approach to their SW-WLA plans, consisting of a re-evaluation of strategies and possible implementation of new strategies. This includes the identification of evaluation criteria that will guide the adaptive process. These can consist of management metrics, performance metrics, or other feedback mechanisms that will be evaluated as part of future strategy refinement.
    - d. The SW-WLA plans may reference monitoring strategies. These strategies may be used to refine the understanding of sources, to evaluate or target alternative implementation options, to assess whether

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management actions and BMPs are performing as designed, to assess load reductions and, in general, as evaluation criteria for determining whether changes to the strategy are warranted. However, official monitoring for Integrated Report assessments and impairment status will be the State's responsibility.

## **References**

Maryland Department of the Environment (MDE). 2011. *Accounting for Stormwater Wasteload Allocation and Impervious Acres Treated*. Baltimore, MD: Maryland Department of the Environment, Water Management Administration.

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<http://www.mde.state.md.us/programs/Water/319NonPointSource/Pages/Programs/WaterPrograms/319nps/factsheet.aspx> (Accessed May, 2014).