Total Maximum Daily Load (TMDL) and National Pollutant Discharge Elimination System (NPDES) Permit Training

Module 3: Understanding Total Maximum Daily Loads (TMDLs) with Stormwater Sources and the National Pollutant Discharge Elimination System (NPDES) Stormwater Permitting Process

User's Guide (May 2013)

The U.S. Environmental Protection Agency (EPA) has developed a 67-slide training module (approximately 2.5 hours for the self-guided module; 10 minutes to complete quiz) that provides information on the development of Total Maximum Daily Loads (TMDL) with stormwater sources and the National Pollutant Discharge Elimination System (NPDES) stormwater permitting process to improve stormwater wasteload allocation (WLA) development and implementation. This module is the result of collaboration among EPA headquarters and EPA Region 10, with input from the other EPA Regions. This document provides key information on using this module.

This module can be used as a stand-alone training or in conjunction with EPA's other related training modules to provide a more in-depth training for TMDL and NPDES permitting staff. (The additional training modules are available at www.epa.gov/npdes/tmdltraining). The goal of this module, and the overall training series, is to improve TMDLs and NPDES permits through cross-program education, as well as to promote frequent discussion and collaboration between the TMDL and NPDES programs.

The material in this presentation should not be quoted or cited as official EPA policy.

Intended Users and Target Audience

This module is intended for use by EPA or state agency NPDES stormwater permitting staff and TMDL staff who want to better understand how to develop TMDLs with stormwater sources that more likely lead to successful implementation through NPDES stormwater permits.

Module Objectives and Summary

Learning objectives for this module are as follows:

- Provide an overview of TMDLs and NPDES stormwater permitting
- Provide an understanding of how TMDL writers can address stormwater in TMDL development
- Provide an understanding of how NPDES stormwater permit writers can develop permits to implement stormwater WLAs

The module begins by reviewing key aspects of the TMDL program and the NPDES Stormwater Permitting program. After that brief programmatic overview, the module focuses on the integration of the two programs. The module steps through the TMDL process to highlight how stormwater source

considerations can affect the TMDL development process, including impairment characterization, establishing water quality targets, stormwater source assessment, TMDL approach selection, and WLA categorization and expression. The module presents several real-world TMDL examples to highlight key points of TMDL development with stormwater source considerations. The second half of the module transitions to NPDES stormwater permitting considerations to implement stormwater WLAs. This includes options for numeric and narrative effluent limits in stormwater permits, monitoring requirements and compliance schedules to show progress toward stormwater WLAs, and implementation planning considerations. This portion of the module also contains real-world NPDES stormwater permit examples to illustrate different approaches for translating stormwater WLAs into permit requirements. The module wraps up with a series of tips for TMDL developers and NPDES stormwater permit writers to promote better communication and coordination. An optional quiz is available to gauge participants' understanding of TMDL and NPDES stormwater permitting integration issues after the training.

How to Use This Module

There are two potential options for using this module: 1) as a recorded self-paced module or 2) as a live training (where it is possible to tailor the Powerpoint to the specific needs of the targeted audience). In both options, a follow-up discussion with staff on mutual issues of concern in both programs is encouraged. Each option is described below.

Recorded Self-Paced Module

This module is available as a recorded presentation to enable participants to review the material on demand in a self-paced environment. Click on the link for the self-paced module found at www.epa.gov/npdes/tmdltraining. When the module launches, tabs will appear on the left-hand side of the screen that allow the user to choose an outline, thumbnails, or notes view of the presentation, while the slides appear on the main screen. Users can pause or go back to a previous slide much like using a DVD player. Hitting the "UP ARROW" or "DOWN ARROW" will go back to the beginning of the previous slide or move to the beginning of the next slide.

Powerpoint Presentation for Use in Live Meetings

In addition, this module is available as a Powerpoint presentation with slides and an associated script for use in live meetings. If necessary, a presenter can update the slide and script content to reflect regional or state specific TMDL issues. The recommended timeframe is approximately 2.5 hours for the presentation and 30 minutes for group discussion (see example discussion questions below). EPA and/or state staff may update and adapt the training module to reflect region-specific and state-specific issues and concerns, as well as incorporate new policy and legal considerations as they arise.

Discussion Questions

After the presentation, the training facilitator can lead the participants in a discussion to further explore the training content. Potential discussion questions are provided below.

1. Has the NPDES permitting authority in your state/region used Residual Designation Authority (RDA) to identify currently unregulated stormwater sources that cause or contribute to a water quality impairment and are in need of NPDES stormwater permit coverage? If so, what are the benefits and challenges associated with this approach?
2. What types of stormwater surrogates have been used or considered for TMDLs in your state/region? What has been the experience of TMDL practitioners in your state/region in identifying and developing a TMDL with a surrogate TMDL target?
3. The temporary nature of construction sites can pose challenges for developing and assigning WLAs. What approaches have been used to assign WLAs to construction sites in your state/region? Of the approaches discussed in the module, which seem to make the most sense for your state/region? How are these WLAs usually translated as water quality-based effluent limitations in NPDES permits?
4. For NPDES stormwater permits, water quality-based effluent limitations can be in either numeric or narrative (e.g., BMP) form. Have numeric effluent limitations been used in stormwater permits to implement stormwater WLAs in your state/region? If so, what were the technical, programmatic, and stakeholder challenges surrounding using numeric effluent limits versus narrative (e.g., BMP based) effluent limits in the stormwater permit? If water quality-based effluent limitations are expressed in narrative (e.g., BMP) form, what other information is or should be included in the NPDES permits (e.g., types of monitoring, translation of WLA into numeric to be used to gauge progress etc.)?
5. When and who should select the BMPs? Should TMDLs include BMP recommendations? Should the NPDES stormwater permits prescribe the BMPs necessary to achieve the WLA for a stormwater source? Should the stormwater permittee select BMPs with appropriate documentation to demonstrate how the BMPs will meet the WLA?
6. What is the most effective means to link the stormwater WLA under an approved TMDL to the NPDES stormwater permit? Through the TMDL Implementation Plan (if developed)? Through language in the WLA? Through the reasonable assurances section of the TMDL? Should the TMDL and the permit contain references to each other or replicate the language found in each other?
7. What information is most helpful to include in the TMDL from the NPDES writer's perspective? What information can the NPDES program provide to TMDL writers while TMDLs are under development?

Associated Resources

For further information on the TMDLs with stormwater sources and NPDES stormwater permitting to implement stormwater WLAs, participants can review the following resources:

MPCA (Minnesota Pollution Control Agency). 2008. *MPCA Stormwater TMDL Policy for Setting WLAs.* Minnesota Pollution Control Agency, St. Paul, MN. www.pca.state.mn.us/publications/wq-strm7-01.pdf.

MPCA (Minnesota Pollution Control Agency). 2008. *Technical Guidance Used by MPCA to Develop Policies for Setting TMDL WLAs for Regulated Stormwater*. Minnesota Pollution Control Agency, St. Paul, MN. www.pca.state.mn.us/publications/wq-strm7-03.pdf.

NRC (National Research Council). 2008. *Urban Stormwater Management in the United States*. Committee on Reducing Stormwater Discharge Contributions to Water Pollution, Water Science and Technology Board, Division on Earth and Life Studies, National Research Council of the National Academies. National Academies Press, Washington, DC.

USEPA's Urban BMP Performance Tool: http://cfpub.epa.gov/npdes/stormwater/urbanbmp/bmpeffectiveness.cfm

USEPA's TMDL and Stormwater Resources website: www.epa.gov/owow/tmdl/stormwater

USEPA (U.S. States Environmental Protection Agency). 2008. *Total Maximum Daily Loads to Stormwater Permits Draft Handbook*. Washington, DC. http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/stormwater_index.cfm

USEPA (U.S. Environmental Protection Agency). 2008. *Incorporating Green Infrastructure Concepts into Total Maximum Daily Loads*. U.S. Environmental Protection Agency, Washington, DC. www.epa.gov/owow/tmdl/stormwater/

USEPA (U.S. Environmental Protection Agency). 2007. *Total Maximum Daily Loads with Stormwater Sources: A Summary of 17 TMDLs*. EPA 841-R-07-002. U.S. Environmental Protection Agency, Office of Wetlands, Oceans and Watersheds, Washington, DC. www.epa.gov/owow/tmdl/17_TMDLs_Stormwater_Sources.pdf

USEPA (U.S. Environmental Protection Agency). 2007. *Total Maximum Daily Loads and National Pollutant Discharge Elimination System Storm Water Permits for Impaired Water Bodies: A Summary of State Practices*. U.S. Environmental Protection Agency, Region 5, Chicago, IL. www.epa.gov/region5/water/wshednps/pdf/state_practices_report_final_09_07.pdf

USEPA (U.S. Environmental Protection Agency). 2007. *An Approach for Using Load Duration Curves in the Development of TMDLs*. EPA 841-B-07-006. U.S. Environmental Protection Agency, Office of Water, Office of Wetlands, Oceans, and Watersheds, Washington, DC. www.epa.gov/OWOW/tmdl/duration_curve_guide_aug2007.pdf.

USEPA (U.S. Environmental Protection Agency). 2007. *Options for the Expression of Daily Loads in TMDLs (Draft)*. U.S. Environmental Protection Agency, Office of Wetlands, Oceans and Watersheds, Washington, DC. www.epa.gov/owow/tmdl/draft_daily_loads_tech.pdf.

Wayland, R.H., and J.A. Hanlon. 2002. Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs. Memorandum from Robert H. Wayland, III, Director, Office of Wetlands, Oceans and Watersheds, and James A. Hanlon, Director, Office of Wastewater Management, U.S. Environmental Protection Agency, Washington, DC. www.epa.gov/npdes/pubs/final-wwtmdl.pdf