BUREAU OF WATERSHED MANAGEMANT PROGRAM GUIDANCE

Storm Water Management Program

TMDL Guidance for MS4 Permits: Planning, Implementation, and Modeling Guidance

Addendum A (Percent Reduction)

Effective: February 2016
Guidance #: 3800-2015-13

This document is intended solely as guidance and does not contain any mandatory requirements except where requirements found in statute or administrative rule are referenced. Any regulatory decisions made by the Department of Natural Resources in any matter addressed by this guidance will be made by applying the governing statutes and administrative rules to the relevant facts.

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A. Statement of Problem

As permitted Municipal Separate Storm Sewer Systems (MS4s) are added in watersheds with approved TMDLs it is not always clear how to assign a percent reduction corresponding with the appropriate Waste Load Allocation (WLA) or Load Allocation (LA) for new, expanded, or missed MS4 areas.

B. Background

At the time of TMDL development, there may not be sufficient information to separate out individually permitted MS4s from other MS4s permitted areas. For example, state and county highway MS4s and UW campus MS4s may not have been able to be assigned a specific WLA and their allocation gets lumped in with the city/village/town WLA where it is located. However all permitted MS4s that are located within in a municipality that received a WLA will be subject to the same annual average percent reductions. Additionally, urban developed areas not regulated under an MS4 permit are by default considered part of the non-point source LA when a TMDL is developed; however, once permitted, the MS4 system must be addressed in a consistent methodology as the other permitted MS4s contained in the TMDL.

C. Discussion

As discussed in the MS4 TMDL guidance, dated October 2014, permitted MS4s will implement their assigned WLAs based on an annual average percent reduction. This approach will also apply to new, expanded, or missed MS4s that were not assigned WLAs or percent reductions in the EPA approved TMDL.

During the development of a TMDL, it is common to assign an average unit area load across the MS4 service area as the baseline condition from which allocations are then derived. From this baseline load condition, a percent reduction (often equivalent) is applied across all sources to come up with the applicable LAs and WLAs.

For sediment or Total Suspended Solids (TSS) and Total Phosphorus (TP), the baseline condition for agricultural non-point sources generally reflects compliance with NR 151 agricultural performance standards including tolerable soil loss rate and the phosphorus index. Neither of these performance standards have an easy or direct translation with the baseline condition and the NR 151 percent reductions used for permitted MS4s.

In order to be equitable and consistent with the baseline condition assumed in TMDLs for permitted MS4s, the “no-controls” and subsequent NR 151.13 percent reduction will be utilized as the baseline MS4 condition for all new, expanded, or missed permitted MS4s. Consistent with existing Department guidance, implementation of the TMDL for new, expanded, or missed MS4s will utilize a percent reduction framework consistent with the EPA approved TMDL. The methodologies outlined below are designed to be consistent with allocations needed to achieve water quality standards.

D. Guidance

The following approach is recommended for assigning MS4 annual average percent reductions to permitted MS4s that are not specifically identified in a TMDL but discharge to a receiving water to which the TMDL applies:

1. In a TMDL reach where there is a permitted MS4 that was assigned a WLA, the same annual average percent reduction will apply to new, expanded, or missed permitted MS4s in the same reach so long as the MS4 has the same baseline condition. In some TMDLs, such as the Wisconsin River TMDL, the MS4 baseline load condition may vary due to soil or other conditions. If this is the case, consult with the DNR and we will select or adjust the percent reduction as needed to ensure consistency with the EPA approved TMDL.

2. In a TMDL reach where there was no WLA assigned to any MS4, the following approach should be used:

For a TMDL that uses 20% TSS reduction as the baseline loading condition (TMDLs approved after January 1, 2012) the conversion to the no-controls modeling condition is calculated by reach as follows:

TSS % Reduction (no-controls) = 20 + (0.80 * % NPS reduction from baseline in TMDL)
TP % Reduction (no-controls) = 15 + (0.85 * % NPS reduction from baseline in TMDL)

For a TMDL that uses 40% reduction as the baseline loading condition (TMDLs approved prior to January 1, 2012) the conversion to the no-controls modeling condition is:

TSS % Reduction (no-controls) = 40 + (0.60 * % NPS reduction from baseline in TMDL)
TP % Reduction (no-controls) = 27 + (0.73 * % NPS reduction from baseline in TMDL)

Note: For TMDLs that specifically call out nonpermitted MS4 reductions, such as the Milwaukee TMDLs, use the % reduction assigned to the nonpermitted MS4s in the equations above instead of the "% NPS reduction from baseline in the TMDL" listed in the equations above.

The recommended calculation approach will give a somewhat different annual average percent reduction than if it had been calculated from conversion of a mass LA. However, the recommended approach will yield reductions that are consistent with those that would have been calculated had non-permitted MS4 area been included in the TMDL's calculation as an area of MS4 WLA instead of an area of LA.

Example Calculation: The Rock River TMDL report does not have MS4 annual average percent reductions calculated for Reach 80. Following the above guidance, the calculated MS4 annual average percent reductions for TSS and TP are as follows:

TSS % Reduction (no-controls) = 40 + (0.60 * % NPS reduction from baseline in TMDL)
*Appendix I of the approved RR TMDL report, dated July 2011, identifies the % NPS reduction from baseline for TSS as 25%.
TSS % Reduction (no-controls) = 40 + (0.60 * 25) = 55% (Rock River Basin Reach 80)

TP % Reduction (no-controls) = 27 + (0.73 * % NPS reduction from baseline in TMDL)
*Appendix H of the approved RR TMDL report, dated July 2011, identifies the % NPS reduction from baseline for TP as 49%.
TP % Reduction (no-controls) = 27 + (0.73 * 49) = 63% (Rock River Basin Reach 80)

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