

# MS4 TMDL Implementation Guidance Update

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# What are TMDLs?

EPA requires that waters listed as impaired on Wisconsin's 303-d list have TMDLs developed.

TMDLs determine the amount of a pollutant a waterbody can receive and still meet water quality standards.

Total Maximum Daily Load =

Load Allocation



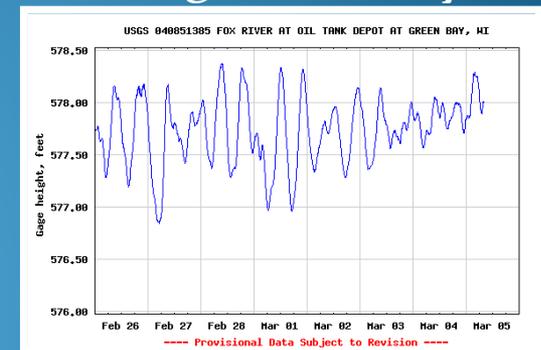
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Waste Load Allocation



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Margin of Safety



# TMDL Allocations

## Waste Load Allocation

- WWTPs / POTWs
- Industries
- **MS<sub>4</sub>s**
- Non-Metallic Mines
- Construction Sites
- CAFOs

## Load Allocation

- Agricultural
- Non-permitted Urban
- Background

- MS<sub>4</sub> = **M**unicipal **S**eparate **S**torm **S**ewer **S**ystem
- A conveyance or system of conveyances including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, constructed channels or storm drains
  - Owned or operated by a municipality
  - Designed or used for collecting or conveying storm water
  - Not a combined sewer system
  - Not part of a publicly owned wastewater treatment works

# Rock River TMDL WLAs for Storm Water Sources

- Group WLA of 10% of instream capacity covers:
  - Storm water construction sites (hundreds each year)
  - Storm water industrial facilities (hundreds in operation)
  - Wastewater general permittees
- Individual WLAs given for permitted MS4s
  - MS4 = Municipal Separate Storm Sewer Systems (MS4s)
  - 53 existing MS4s permitted in Rock River Basin
  - About 7 additional MS4s to be permitted over next year

# Drafting of MS4 TMDL Guidance

- Has been a long process. The final guidance differs substantially from the originally envisioned approach of using the mass allocation directly from the TMDL.
- DNR formed a team of stakeholders to provide input and assistance in drafting the guidance.
- DNR worked with EPA to create an approach that met Clean Water Act requirements but still provided a flexible implementation approach.

# TMDL Permit Requirements

Once EPA has approved a TMDL that contains permitted MS4s, the next permit issued must contain **an expression of the WLAs** consistent with the assumptions and requirements contained in the TMDL.

EPA approves the WLAs and generally these WLAs are mirrored directly in the permit.

The direct application of the WLA presents certain challenges in implementation due to assumptions required during the development of the TMDL.

# Challenges with Expression of TMDL as Mass

- Multiple factors make implementation on a mass basis challenging including:
  1. The aerial extent of the MS4 and its boundary may not match that of the TMDL due to incorporation of new areas and expansion of the municipal boundary.
  2. TMDLs are rarely able to account for watershed modified by storm sewers.
  3. Difference between the tools used to create the TMDL versus the compliance tools used by the MS4 – will not calculate the same mass.

# Challenges with Expression of TMDL as Mass

- Even if the TMDL used SLAMM or P-8 the rainfall record used in the TMDL will not match that required by NR 151.
- Some of the TMDLs developed in Wisconsin used SWAT or HSPF to calculate the urban loads (Rock River TMDL used SLAMM)



# Percent Reduction Framework

- Builds on the requirements already contained in NR 151 and the municipal wide analysis already conducted to comply with requirements stipulated in NR 151.13.
- EPA will allow a percent reduction approach because DNR has a defined no controls scenario and defined climate files used in NR 151.13.
- The usage of a percent reduction framework allows both the MS4 and DNR the ability to implement the reductions without having to reallocate and track WLAs across reachsheds, MS4s, and other land uses.

# Percent Reduction Framework

- Will minimize the need to continually update the TMDL as municipal boundaries evolve.
- Will ease reporting and tracking requirements.
- During the development of the TMDLs, the percent reduction is calculated using the following equation:

$$\text{Percent Reduction} = 100 * (1 - (\text{WLA Loading Condition} / \text{Baseline Loading Condition}))$$

# Percent Reduction Framework

- TMDL percent reduction expressed based on regulatory requirements.
- Rock River TMDL uses 40% TSS reduction and 27% TP as baseline loading conditions, the conversion to the no-controls modeling condition is:

$$\text{TSS Percent Reduction} = 40 + (0.60 * \% \text{ control in TMDL})$$

$$\text{TP Percent Reduction} = 27 + (0.73 * \% \text{ control in TMDL})$$

# Implementation of Percent Reduction Framework

- For the MS<sub>4</sub> area contained in each reachshed, the no controls load is calculated using SLAMM, P-8, or equivalent.
- The MS<sub>4</sub> area includes the entire acreage that the MS<sub>4</sub> is responsible for; subtract areas not under the jurisdiction of the permittee.
- As new MS<sub>4</sub> area is added or subtracted, the TMDL percent reduction applied to these areas remains the same.

# Implementation of Percent Reduction Framework

- The percent reduction calculated to meet the TMDL is applied to the no controls load, which provides the mass that needs to be controlled by the MS4. This mass will be different from that stipulated by the TMDL WLA.
- The corresponding mass calculated using that percent reduction should be used in any accounting required through water quality trading and or adaptive management.

# Compliance Points

- Unlike the requirements contained in NR 151.13, individual MS4s may be divided in multiple reachsheds.
- Compliance with TMDL requirements will need to be achieved on a reach by reach basis. Ultimately water quality standards must be met in-stream at the compliance point located at the farthest most downstream point of the reachshed.
- Compliance is with water quality standards. The TMDL reductions are the best estimate for meeting water quality standards and are modeled or simulated predictions. Ambient stream monitoring will ultimately be required to de-list impaired waters and show compliance with the TMDL.

# Anticipated Compliance Schedule

- An MS4 permittee will receive a TMDL implementation planning requirement in its next permit term.
- It is expected that the following term permit after the planning requirement term, that a compliance schedule to meet applicable TMDL reductions will be included in the MS4 permit.
- The compliance schedule will require that the permittee show continual progress by meeting 'benchmarks' of performance within each permit term.

# Anticipated Compliance Schedule

- MS4 permittees will have the primary role in establishing their own benchmarks for each 5-year permit term.
- It is possible that certain benchmarks will not be easily quantifiable but there needs to be evidence that such benchmarks will provide a legitimate step toward reducing the discharge of pollutants of concern.
- Under a TMDL, EPA does not acknowledge the concept of maximum extent practicable as defined in s. NR 151.006, Wis. Adm. Code, but rather compliance schedules can be structured in SWMPs and permits to allow MS4s the flexibility needed to meet TMDL goals.

# MS4 TMDL Guidance - Next Steps

- DNR has revised guidance based on public comments and it is being reviewed by DNR management before it can be finalized.
- Once guidance finalized, it will be posted on DNR guidance web page.
- DNR will send a message via GovDelivery to notify the public of having finalized such guidance.

# Questions

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