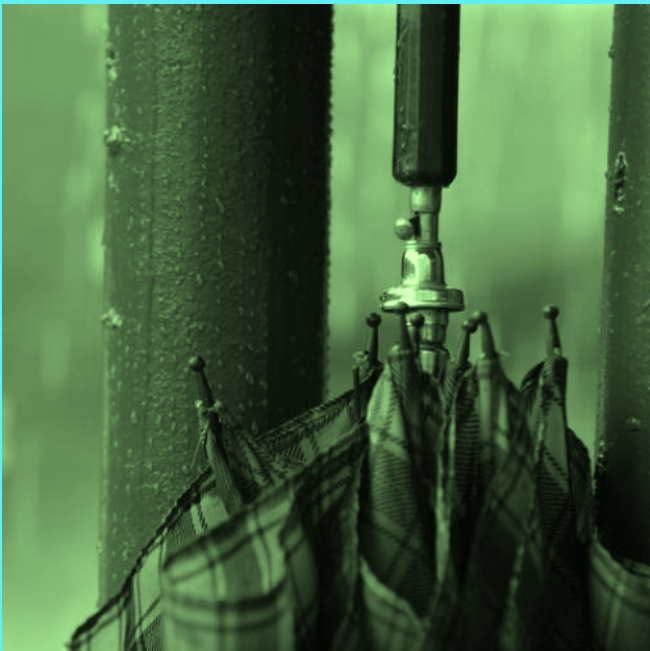


# Setting Implementation Strategies in the TMDL Implementation Plan



wq-strm7-84c

Stormwater Module 4c  
Minnesota Pollution Control Agency

# Training goals

## Recognize

- ✧ What a TMDL Implementation Plan is
- ✧ The relationship between the TMDL, TMDL Implementation Plan and MS4 permit
- ✧ What an Implementation Plan could contain for permitted MS4 stormwater

# Acronyms

TMDL total maximum daily load

MS4 municipal separate storm sewer system

WLA waste load allocation

LA load allocation

NPDES National Pollutant Discharge Elimination System

SWPPP stormwater pollution prevention plan (construction) OR  
stormwater pollution prevention program (municipal)

BMP best management practice

WMO Watershed Management Organization

# What is a TMDL Implementation Plan?

A document that can be used as a guide to achieve a TMDL waste load allocation (WLA)

It may include

- ✧ A summary of the TMDL WLA
- ✧ BMP strategies and/or specific BMPs
- ✧ Timelines
- ✧ Costs
- ✧ Expected pollutant load reductions
- ✧ Information about other watershed strategies and activities
- ✧ Information on monitoring and tracking

# A TMDL Implementation Plan is not

- ✧ Linked to permit requirements
- ✧ An enforceable document
- ✧ A master plan for achieving the WLA  
*(it is a set of recommendations)*



# Implementation plan basics

1. State requirement
2. Approved within one year of EPA approval of TMDL
3. Can be started anytime during TMDL process
4. More detailed than TMDL
5. Basic guidelines are outlined in EPA/MPCA guidance
6. Can be modified at any time (this has not happened yet)

# Relationship between TMDL, implementation plan, permit

TMDL sets a  
WLA



Permit requires  
compliance with WLA



WLA is met by implementing  
BMPs described in SWPPP



Implementation plan  
contains recommended BMPs

# How does this guidance differ from TMDL program guidance?

Specific to permitted MS4 stormwater

Provides greater detail on issues specific to permitted MS4 stormwater

Can serve as a guide to meet the WLA

Can be linked to the permit process (but not as a requirement)



# Why develop this guidance?

To ensure **detail** in implementation plans

- ✧ MS4s will have to come up with specifics anyway, so why not use the Implementation Plan?
- ✧ Invests MS4s in the implementation strategies
- ✧ Provides MS4s with information for SWPPPs
- ✧ Helps MPCA review SWPPPs

# An implementation plan should contain information on four topics

1. Derivation of wasteload allocations
2. Recommended stormwater management strategies
3. Tracking and verification monitoring
4. General compliance schedule



# 1. Derivation of wasteload allocations

MS4s must understand the WLA and how it was derived

The implementation plan should include:

- ✧ Individual target loads for each MS4
- ✧ Summary of model, model inputs, and model assumptions
- ✧ Description of method for delineating watershed

# Target load: a load goal for each MS4 in the TMDL *(may not be a WLA)*

- ✧ When the WLA is given as an individual WLA, the WLA is the target goal
- ✧ When the WLA is given as a categorical WLA, target loads should be calculated for each MS4
- ✧ The target load can be computed using:
  - ✧ Area approach
  - ✧ Population approach
  - ✧ Impervious approach
  - ✧ Land use approach
  - ✧ Model approach

# Example target load calculation

(Categorical WLA = 100)

	Area	Target load
MS4 A	10	33.3
MS4 B	20	66.7
	Population	Target load
MS4 A	50	66.7
MS4 B	25	33.3

# Summary of model, model inputs, and model assumptions

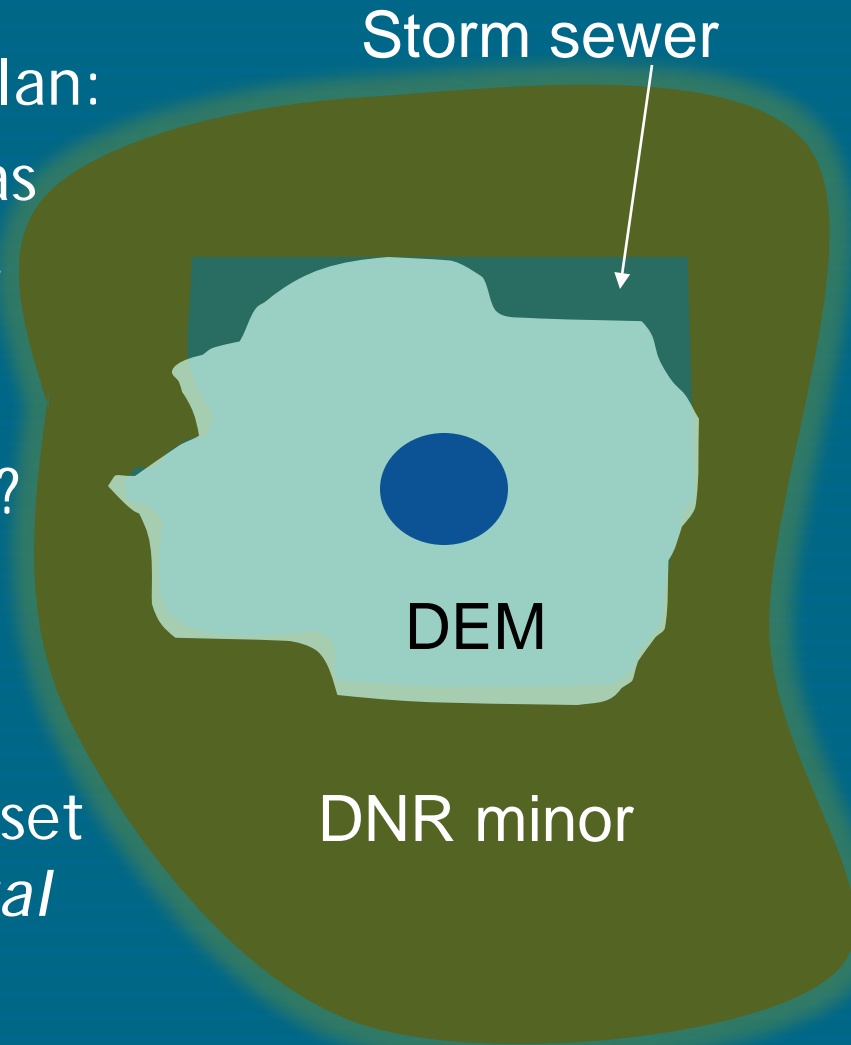
- ❏ What model was used?
- ❏ What are the modeling inputs?  
(e.g. land use, soils, curve numbers, imperviousness)
- ❏ What BMPs were included in the model and what are their attributes?  
(e.g. wet detention basins with 80% removal efficiency)



# How was the watershed delineated?

Answer in the implementation plan:

- ❖ What watershed coverage was used? (e.g. DNR minor watershed, lakeshed, elevation model, etc.)
- ❖ Were stormsheds considered in the watershed delineation? If not, does this affect the watershed boundary?
- ❖ To what extent does the watershed boundary used to set the WLA differ from the *actual* boundary?



## 2. Recommended stormwater management strategies

The implementation plan can identify management strategies and BMPs needed to meet the WLA

The implementation plan could include:

- ✧ Overview of Stormwater Management Strategy
- ✧ Overview of adaptive management approach
- ✧ Information on BMPs
- ✧ Summary of existing management strategies in the watershed (e.g. watershed plans, county plans)
- ✧ Summary of funding needs and mechanisms
- ✧ If applicable, trading guidelines



# a. Stormwater management strategy

## Five strategies available to MS4

1. Retrofit
2. New development
3. Prevention and education
4. Non structural
5. Trading

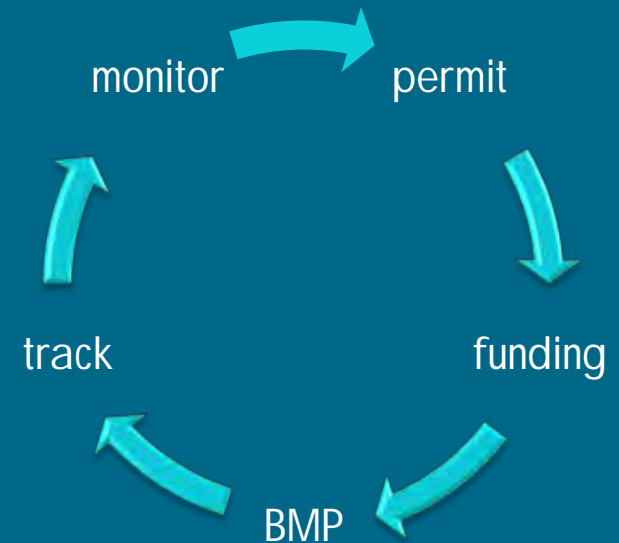


A MS4 usually uses more than one, but implements in a priority order

## b. Adaptive management approach

Implementation plan can contain:

- ✧ Is management strategy tied to permit and/or funding cycles?
- ✧ In a general way, link the BMP strategy to the various cycles
- ✧ In a general way, describe when tracking and/or monitoring will occur



## c. BMP information

Implementation plan can describe specific BMPs:

- ❏ Type of BMP (description)
- ❏ Where implemented
- ❏ Estimated load reduction
- ❏ Cost
- ❏ Maintenance requirements
- ❏ Timelines
- ❏ Responsible parties



## d. Summary of existing management strategies in the watershed

The implementation plan can contain:

- ✧ What other water-related plans exist?
- ✧ What requirements do these plans have for stormwater?
- ✧ How can these plans be linked to the TMDL implementation plan?
- ✧ Are there other plans of potential importance, such as development plans?

## e. Summary of funding needs and mechanisms

The implementation plan can contain:

- ✧ Current funding sources (e.g. stormwater utility)
- ✧ Current funded projects
- ✧ Needed funds (cost estimates)
- ✧ Potential funding sources
- ✧ A funding strategy

## f. Trading guidelines – *if applicable*

- ✧ Is trading an acceptable way to meet the WLA?
- ✧ Who can trade with who, including across sectors?
- ✧ Can WLA be traded for LA?
- ✧ What are the trading ratios?
- ✧ When can trading commence?

### 3. Tracking and verification monitoring

The implementation plan can provide a mechanism for MS4s to track progress

Implementation plan contains:

- ✧ Description of how MS4s will track progress toward meeting the TMDL
- ✧ Discussion of when verification monitoring will be necessary and how it will be conducted

# Tracking progress toward meeting the WLA

## Four possible strategies

Monitor  
receiving  
water

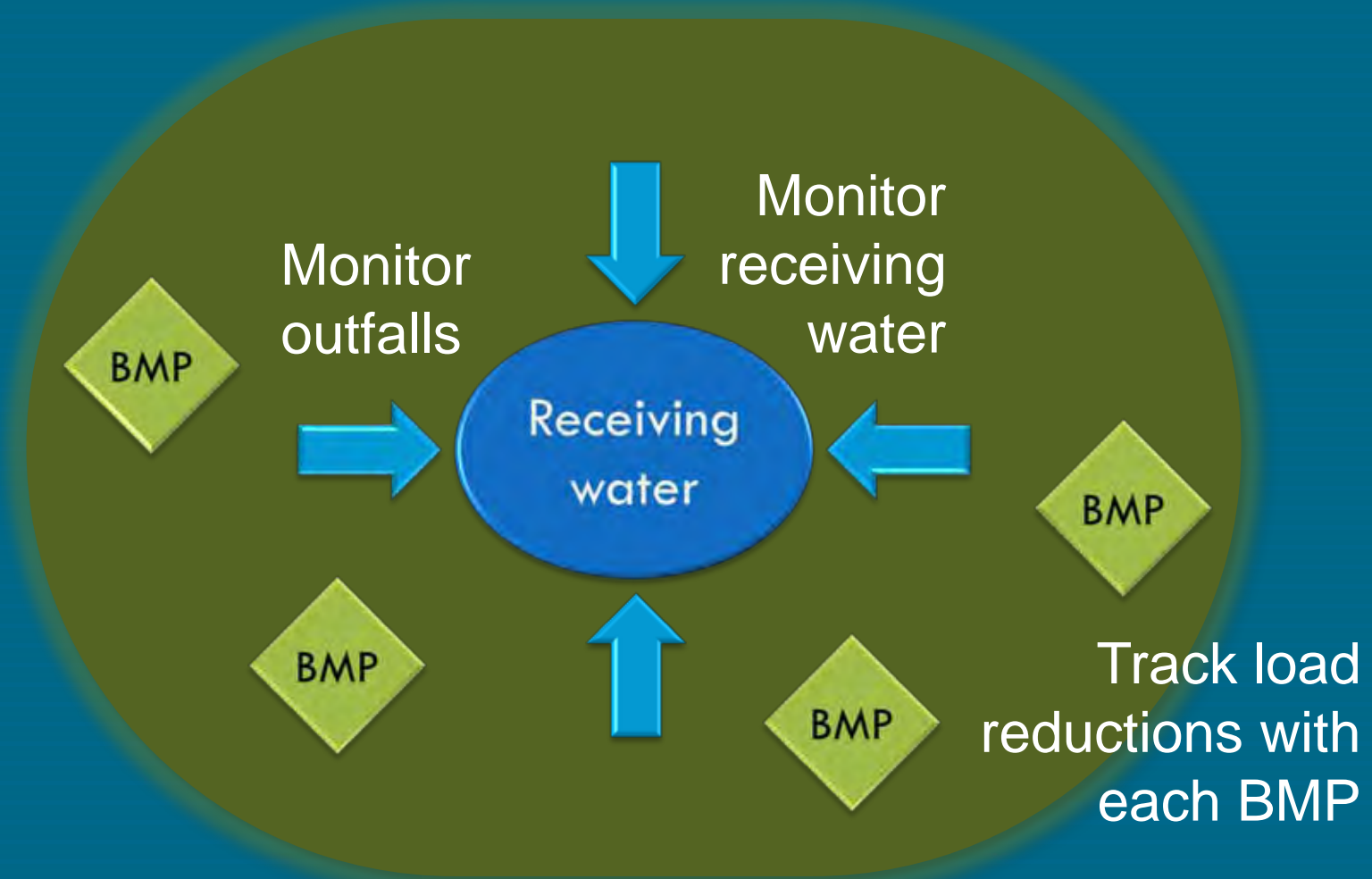
Monitor  
outfalls

Model

Simple  
tracking  
(spreadsheet  
approach)



# Tracking method - illustrated



## Model the system

# Verification monitoring

- ✧ Responsibility and methods are undetermined at this time
- ✧ Verification will be needed

## 4. General compliance schedule

The implementation plan should provide a framework for developing the adaptive management approach

Implementation plan contains general compliance schedule based on consideration of

- ✧ pollutant
- ✧ recommended BMPs
- ✧ permit cycles and
- ✧ funding cycles

# Summary

- ✧ Permit requirement is to meet TMDL WLA
- ✧ Implementation Plan can guide MS4s
- ✧ Implementation Plan contains information on
  - ✧ Derivation of Wasteload Allocations
  - ✧ Recommended stormwater management strategies
  - ✧ Tracking and verification monitoring
  - ✧ General compliance schedule

Goal: make Implementation Plan as detailed  
(prescriptive) as possible