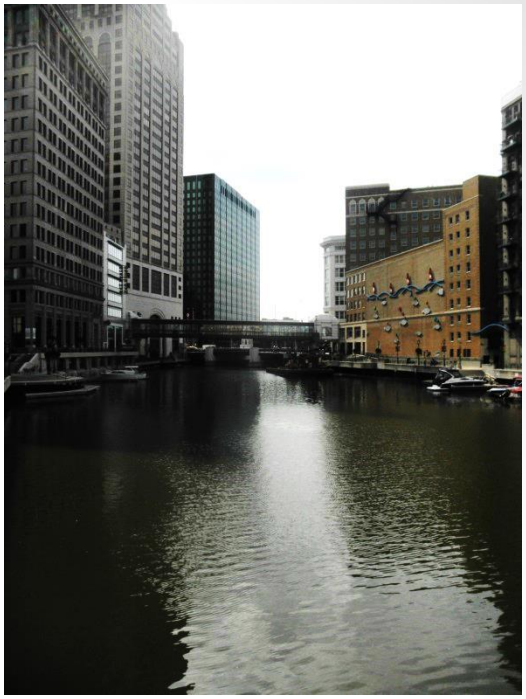


Milwaukee River Basin TMDL:

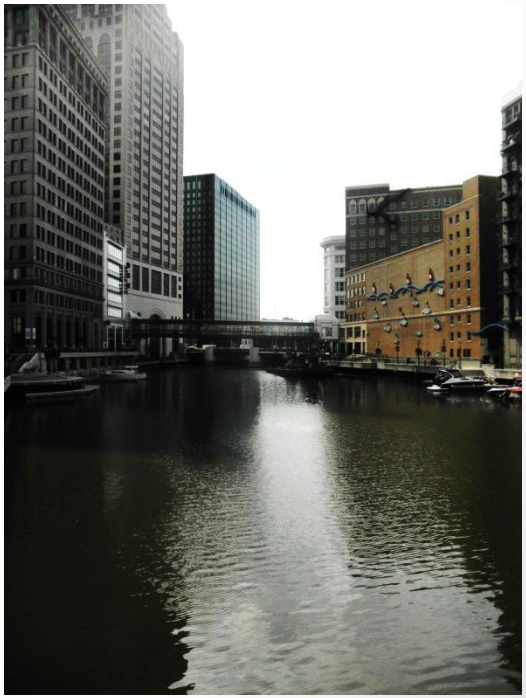
WPDES Outreach Session

Milwaukee River Basin Total Maximum Daily Loads (TMDLs)
WPDES Wastewater Individual Permit
Informational Meetings

Agenda

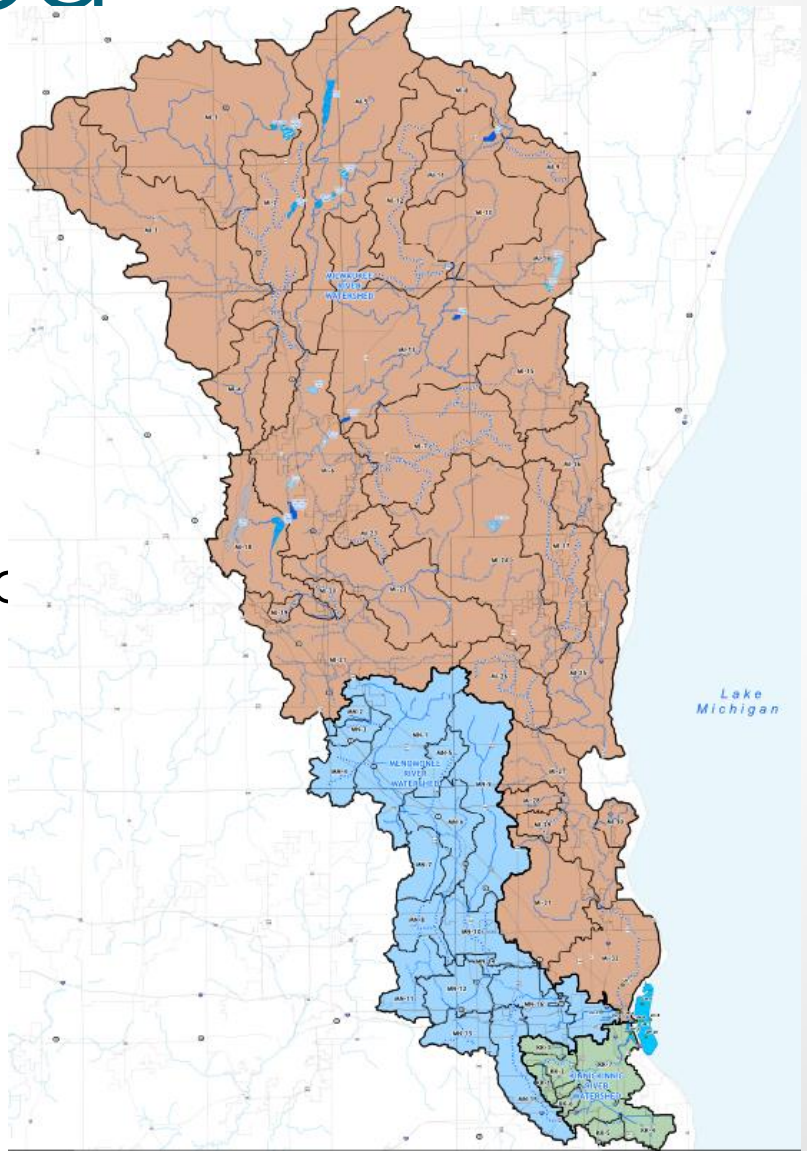
9:30	**Welcome & Introductions - (Laura Dietrich)**
9:35	TMDL Background & Brief Explanation of TMDL Tables & WW Individual WPDES Permit Waste Load Allocations (baseline loads) (Kevin Kirsch)
10:00	Total Suspended Solids, Fecal Coliform and Total Phosphorus Permit Limits and Compliance Schedules – (Laura Dietrich/Nick Lent)
10:30	Implementation of TMDL Waste Load Allocations in WW WPDES Permits (Laura Dietrich)
10:40	Schedule Moving Forward (Kevin Kirsch/Laura Dietrich)
10:45	Open Discussion / Q &A
11:30	Adjourn

TMDL Background



Milwaukee River Basin TMDL Study Area

- Milwaukee River Watershed
- Kinnickinnic River Watershed
- Menomonee River Watershed
- Milwaukee Harbor Estuary



Actions Taken after Approval of Regional Water Quality Management Plan Update

1. SWWT* formed
2. Watershed Restoration (WRP) Plans Developed by MMSD with public/stakeholder input for Menomonee River & Kinnickinnic River
3. Implementation Plans by SWWT for both
4. Discussion of TMDL

*Southeastern Wisconsin Watersheds Trust (Sweet Water)

MMSD
PARTNERS FOR A CLEANER ENVIRONMENT

Why 3rd Party TMDL?

1. Keep momentum of 2020FP and RWQMPU
2. Looming new phosphorous water quality standards
3. Development of sound basis for programs (Green Infrastructure/NR 151/Illicit discharges)
4. Models and data from RWQMPU available
5. GLRI Funding available
6. DNR support for the concept

MMSD
PARTNERS FOR A CLEANER ENVIRONMENT

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 **M**aximum **D**aily **L**oad =

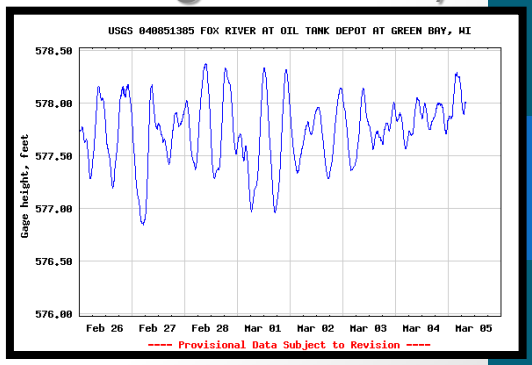
Load Allocation

+

Waste Load Allocation

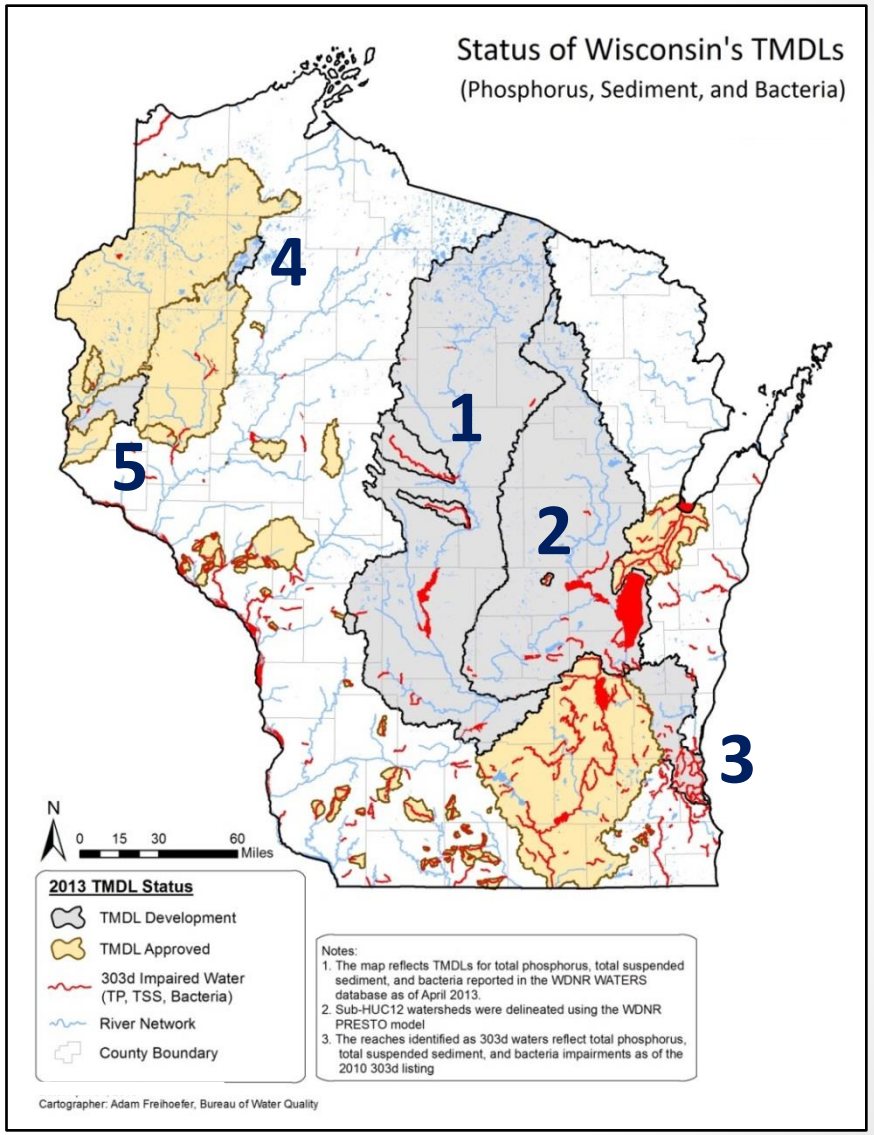
+

Margin of Safety



Statewide TMDL Development

1. Wisconsin River Basin
   Phosphorus and TSS
2. Upper Fox-Wolf Basin
   Phosphorus and TSS
3. Milwaukee River Basin
   Phosphorus, TSS, and Bacteria
4. Lac Courte Oreilles (9 Element Plan)
   Phosphorus
5. Lake Mallalieu
   Phosphorus



http://dnr.wi.gov/topic/tmdls/tmdldevelopment.html

Water Quality Standards

- Designated Uses:
  - Fish & Aquatic Life
  - Public Health
  - Recreation
- Water Quality Criteria:
  - Numeric: dissolved oxygen, pH, bacteria, toxic substances, phosphorus, etc.
  - Narrative: "no objectionable deposits," "substances in concentrations or combinations shall not be harmful to humans, fish, plants, or other aquatic life."

Phosphorus Criteria NR 102.06

- Rivers NR 102.06(3)(a) = **100 µg/L**
- Streams = **75 µg/L**
  - All unidirectional flowing waters not in NR 102.06(3)(a)
- Reservoirs
  - Stratified = 30 µg/L
  - Not Stratified = 40 µg/L
- Lakes range from 15-30 µg/L
- Lake Michigan =7 µg/L
- Lake Superior = 5 µg/L
- Exclusions
  - Ephemeral Streams
  - Wetlands
  - Lakes <5 ac

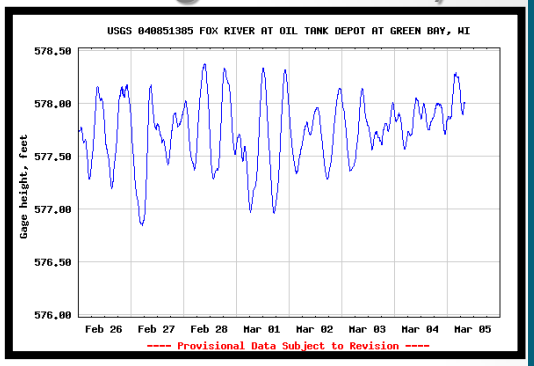
Load Allocation

+

Waste Load Allocation

+

Margin of Safety



Load Allocation

- Agricultural (includes load from CAFO land spreading)
- Non-permitted Urban
- Background

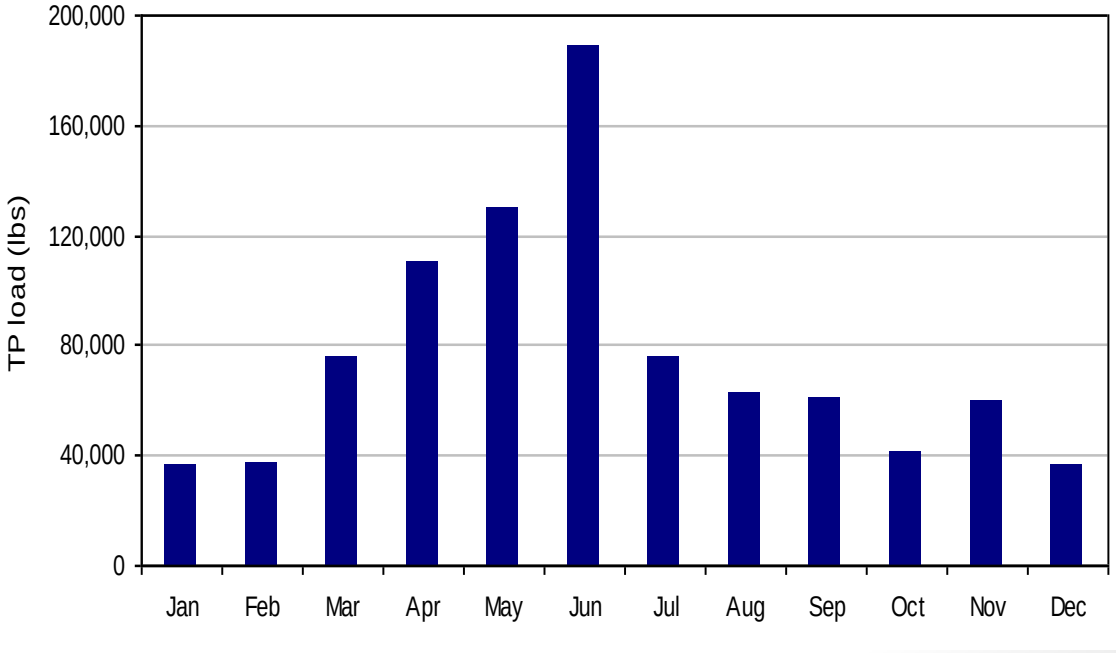
Waste Load Allocation

- **WWTPs / POTWs**
- **Industries**
- Permitted MS4s
- Non-Metallic Mines
- Construction Sites
- NCCWs

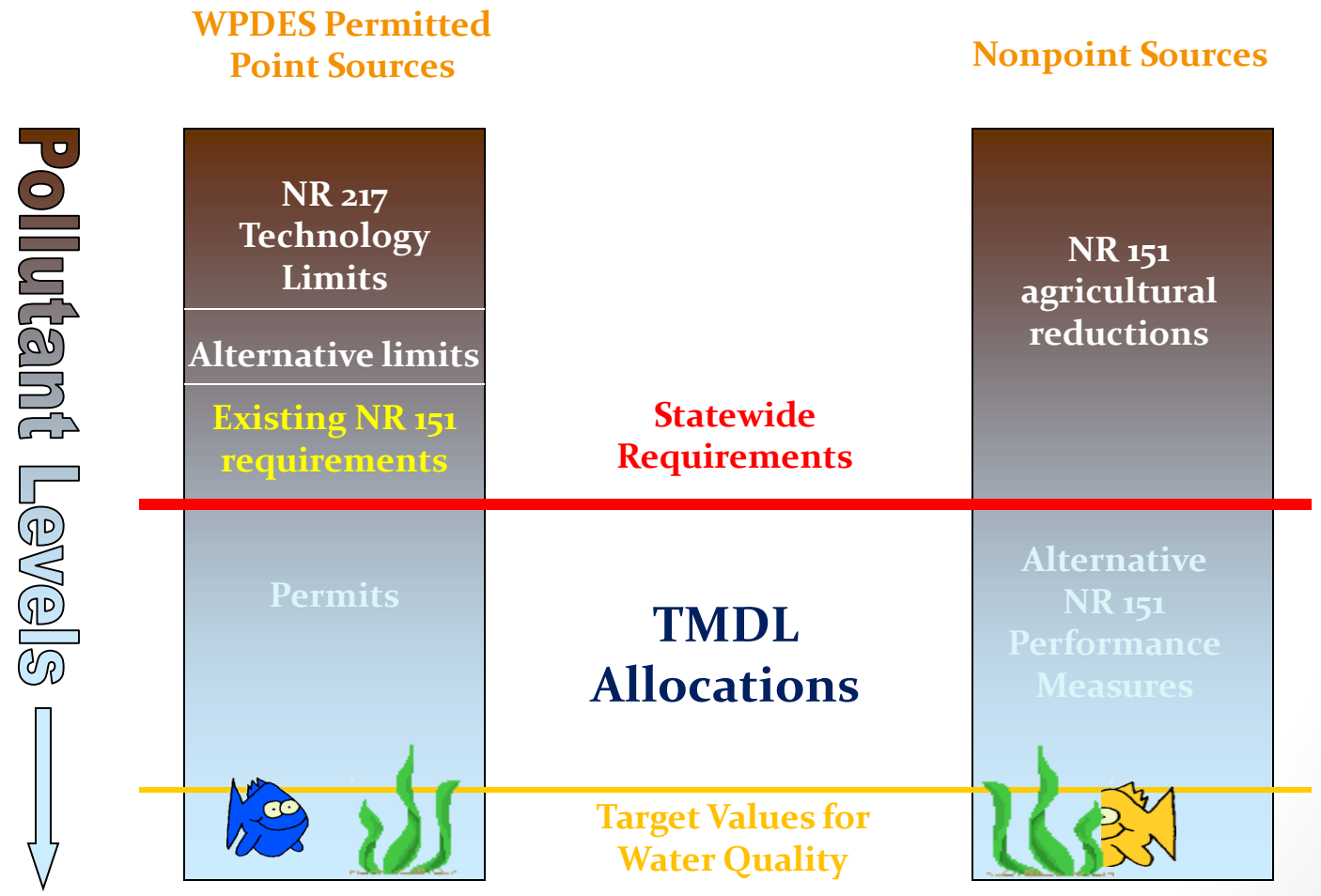
Expression of Allocations

- TMDL must express allocations by mass and on a daily basis (lbs/day) but can be implemented on different time scales.

- Because of the baseline conditions and language in NR 151, allocations can be implemented using percent reduction approach.



Define an Equitable Baseline Condition



Baseline Loads

- Baseline loads set to represent compliance with existing regulations and permit limits
- Baseline loads are only used to allocate the allowable loads to sources -- they *do not* affect the allowable loads themselves
  - Allowable load = Water Quality Target * Flow

Point Sources with Individual WPDES Permits

(POTWs and Industrial Dischargers)

- Permits with numeric limits
  - Baseline flow = permitted design flow
  - Baseline load = permitted concentration * design flow
- Permits without numeric limits
  - Baseline load = measured concentration * flow

Baseline loads and flows for Point Sources with Individual Permits are found in Appendix A Table A.7 of the TMDL Report

Point Sources with Individual WPDES Permits

(POTWs and Industrial Dischargers)

- Point source effluent concentrations calculated from allocated loads and checked to verify that they are not more restrictive than the water quality criteria

WALK-THROUGH OF REPORT AND TABLES

Report Outline

- Section 1 – Introduction
- Section 2 – Watershed Characterization
- Section 3 – Applicable Water Quality Standards
- Section 4 – Source Assessment
- Section 5 – Pollutant Loading Capacity
- Section 6 – Pollutant Load Allocations
- Section 7 – Implementation
- Section 8 – Public Participation
- Section 9 – References

Appendices

- Appendix A – Allocation Tables per Watershed
- Appendix B – Large Format Maps
- Appendix C – TMDL Development Team Decision Memorandum
- Appendix D – Fecal Coliform Load Duration Curves per TMDL Reach
- Appendix E – Translator Development for Bacterial Indicator TMDLs
- Appendix F – Example Allocation Calculation

Appendix A – Baseline Loads and Flows, and Allocation Summaries

- Tables A.1 through A.3 – Baseline Nonpoint Source Loads
- Tables A.4 through A.6 – Baseline MS4 Loads
- Table A.7 – Baseline Point Source Flows and Loads
- Table A.8 – Flows Used for Allowable TP and TSS Loads
- Table A.9 – Flows Used for Allowable Fecal Coliform Loads
- Tables A.10 and A.11 – TP Allocations (Daily and Monthly)
- Tables A.12 and A.13 – TSS Allocations (Daily and Monthly)
- Tables A.14 and A.15 – FC Allocations (Daily and Monthly)

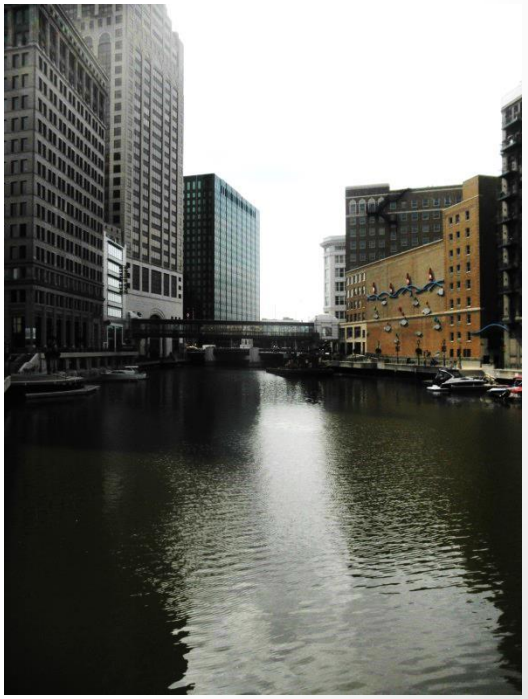
Appendix A – Wasteload Allocations by Discharger

- Tables A.16 and A.17 – TP Wasteload Allocations by Permitted Point Source (Daily and Monthly)
- Tables A.18 and A.19 – TSS Wasteload Allocations by Permitted Point Source (Daily and Monthly)
- Tables A.20 and A.21 – FC Wasteload Allocations by Permitted Point Source (Daily and Monthly)
- Tables A.22 and A.23 – TP Wasteload Allocations by MS4 (Daily and Monthly)
- Tables A.24 and A.25 – TSS Wasteload Allocations by MS4 (Daily and Monthly)
- Tables A.26 and A.27 – FC Wasteload Allocations by MS4 (Daily and Monthly)

Appendix A – Percent Reduction of MS4, Agricultural, and Non-Permitted Urban Loads

- Table A.28 – Percent Reduction of MS4 TP and TSS by Reach and Municipality
- Table A.29 – Percent Reduction of MS4 TP and TSS by Municipality
- Table A.30 – Percent Reduction of Agricultural and Non-Permitted Urban TP and TSS by Reach

Permit Limits, Compliance Schedules and Implementation



Expression of Limits - TSS and TP

The TMDL report provides monthly and daily WLA's for TSS and TP. Monthly allocations will be translated into permits. Permits will include both:

- Current permit limits (i.e technology) for TSS and TP expressed as a concentration (mg/L)

And,

- TMDL allocations for TSS and TP derived from the monthly mass allocations and expressed as pounds per day (lbs/day)

Expression of Limits – Fecal Coliform

The TMDL report provides monthly and daily WLAs for fecal coliforms in (billion cells/day)

- Municipal discharges
  - Limit to remain at the current permit limit of

    400 #/100 ml
- Industrial discharges
  - No permit limit will be included

Limits Derived from TMDL - TSS and TP

Limit Type	Industrial Facilities		Municipal POTW's	
	Total P	TSS	Total P	TSS
Daily (max)		X		
Weekly Avg				X
Monthly Avg	X	X	X	X

* Mass limits expressed in (lbs/day)

Consistent with 40 CFR 122.45, the April 2012 Phosphorus Justification Paper, the 2013 TMDL Development and Implementation Guidance, and other approved TMDLs in WI.

Total Suspended Solids

- Current concentration limits for TSS will remain in permits
- Based on current effluent data and calculated equivalent concentrations most if not all facilities can currently meet draft TMDL limits
- Using the discharge design flow, if any of the TSS WLA's equate to concentrations < 12 mg/L, WDNR plans to implement a 12 mg/L concentration "floor" to prevent unnecessary restriction.

Total Phosphorus

- TMDL Wasteload Allocations Take Precedence for Future Permits
- Technology based concentration limits for TP will remain in permits (typically 1.0 mg/L)
- Wasteload Allocations calculated to be protective of direct receiving water and downstream waters

Example – Total P WLAs & Permit Limits

XYZ Municipal WWTP - Annual Average Design Flow 2.5 MGD

Total Phosphorus WLA's

Month	Monthly WLA (lbs/month)	# of days per month	Monthly Avg Total P Effluent Limit (lbs/day)
Jan	91.29	31	2.94
Feb	95.53	28	3.41
Mar	87.07	31	2.81
Apr	88.55	30	2.95
May	96.38	31	3.11
Jun	96.49	30	3.22
Jul	86.83	31	2.80
Aug	84.04	31	2.71
Sep	86.50	30	2.88
Oct	72.21	31	2.33
Nov	88.49	30	2.95
Dec	82.55	31	2.66

Example: Equivalent Concentrations – Total P

Month	Monthly Total P WLA (lbs/month)	equivalent total P concentration limit (mg/L)at facility design flow	equivalent total P concentration limit (mg/L)at 60% of facility design flow
Jan	91.29	0.141	0.235
Feb	95.53	0.164	0.273
Mar	87.07	0.135	0.225
Apr	88.55	0.142	0.236
May	96.38	0.149	0.249
Jun	96.49	0.154	0.257
Jul	86.83	0.134	0.224
Aug	84.04	0.130	0.217
Sep	86.50	0.138	0.230
Oct	72.21	0.112	0.186
Nov	88.49	0.141	0.236
Dec	82.55	0.128	0.213

TP Compliance Schedules – Current Permit Scenario 1

- Technology based limits already in permits
- Interim limit typically set to TBEL
- Final s. NR 217.13, Wis. Adm. Code limits with 9 year compliance schedule in current permit

TP Compliance Schedules – Current Permit Scenario 2

- Technology based limits not in current permits

- Calculated interim limit included in current permit. Final s. NR 217.13 WQBEL limits with 9 year compliance schedule in current permit

Total P Current Compliance Schedule and TMDL Limits

- Equivalent calculated concentrations show a compliance schedule needed for most facilities in order to meet TMDL limits
- Continue with 1st, 2nd, 3rd and 4th year reports
- Once TMDL approved, reports may reference compliance with TMDL limits rather than s. NR 217.13, Wis. Adm. Code limits (consult with compliance staff)

Implementation of TMDL in Wastewater Permits

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

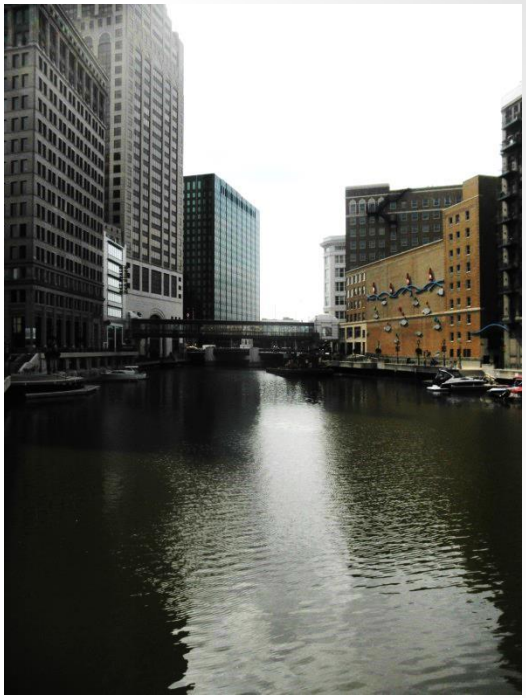
TMDL : Moving Forward

July 25: Public Informational Meeting and Workshop
The July 25th workshop will be held from 9:00 to 1:00 at the Wauwatosa City Hall building. ***(See presentations on website)***

Late summer: Focused stakeholder meetings with point source dischargers, agricultural interests, and other stakeholder groups (details forthcoming).

Fall: Public hearing and official 30 day public comment period before submittal of TMDL to EPA.

Implementation Planning: Detailed planning will commence once TMDL is approved.



Milwaukee River Basin TMDL:

WPDES Outreach Session

Please direct feedback to:

DNRMilwaukeeBasinTMDL@wisconsin.gov