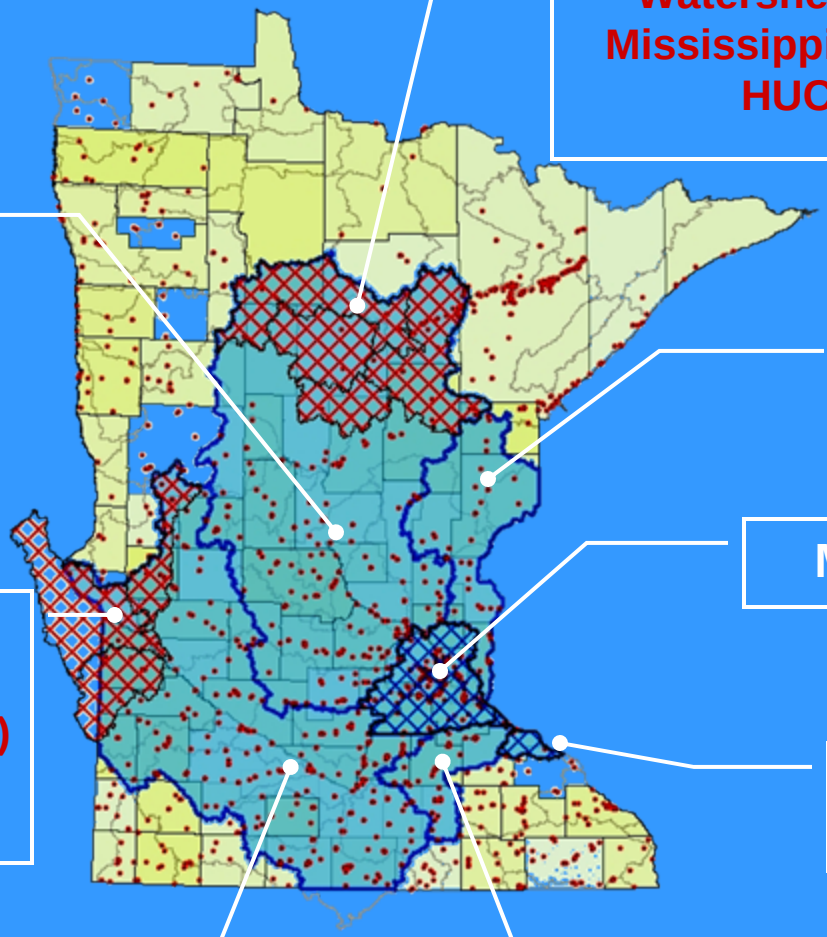
Lake Pepin TMDL Watershed



Not Included in TMDL: Watersheds Upstream of Mississippi River (Brainerd) HUC 07010104

Upper Mississippi River Basin

St. Croix River Basin

Metroshed

Not Included in TMDL: Watersheds Upstream of Minnesota River (Granite Falls) HUC 07020003

Direct Dischargers

Minnesota River Basin

Cannon River Watershed

Key to Discharger Tables

Acronym	Description	Category	Wasteload Allocation Approaches
XL Power	Very large electricity production facilities	Design flows in excess of 20 mgd	Wasteload allocations based limiting on chemical additive usage
XL	Very large wastewater treatment facilities	Design flows in excess of 20 mgd	Individual wasteload allocations
Large	Large domestic and industrial dischargers	Design flows in excess of 1 mgd	Individual wasteload allocations
Medium	Medium domestic and industrial dischargers	Design flows in excess of 0.2 mgd	Individual wasteload allocations
Small	Small domestic and industrial dischargers	Design flows less than 0.2 mgd	Categorical wasteload allocations & performance management goals
? Flow	Mostly industrial discharges	No design flows available	Need additional data
MNG25	Non-contact cooling water general permit	No chemical additives	Categorical wasteload allocations & performance management goals
MNG255	Non-contact cooling water general permit	Chemical additives	Categorical wasteload allocations & performance management goals
MNG49	Sand & Gravel general permit	Industrial stormwater	Categorical wasteload allocations based on stormwater management
MNG64	Water treatment plant general permit	Filter backwash	Categorical wasteload allocations & performance management goals
MNG79	Contaminated groundwater pump-out general permit	Groundwater	Categorical wasteload allocations & performance management goals

Dischargers in the Lake Pepin Watershed

Lake Pepin TMDL:
Dischargers by Type in 26 Major Watersheds

	XL Power	XL	Large	Medium	Small	? Flow	MN G25	MN G255	MN G49	MN G64	MN G79	SUM
Domestic	0	4	44	100	159	2	0	0	0	0	0	309
Industrial	9	0	37	32	52	70	14	26	79	26	26	371
SUM	9	4	81	132	211	72	14	26	79	26	26	680

Direct Dischargers and the Metro area

Direct Dischargers

HUC	Major Name	XL Power	XL	Large	Medium	Small	? Flow	MNG 25	MNG 255	MNG 49	MNG 64	MNG 79	SUM
07040001	Mississippi River (Red Wing)	1	0	2	1	1	2	1	0	2	0	0	10

Metroshed

HUC	Major Name	XL Power	XL	Large	Medium	Small	? Flow	MNG 25	MNG 255	MNG 49	MNG 64	MNG 79	SUM
07010206	Mississippi River (Twin Cities)	2	1	21	7	24	24	6	16	10	12	12	135
07020012	Minnesota River (Shakopee)	1	2	5	8	7	14	3	1	4	0	0	45
07040001	Mississippi River (Red Wing)	0	1	0	1	2	0	0	1	2	2	4	13
3		3	4	26	16	33	38	9	18	16	14	16	193

Indirect Dischargers

Upper Mississippi River Basin

HUC	Major Name	XL Power	XL	Large	Medium	Small	? Flow	MNG 25	MNG 255	MNG 49	MNG 64	MNG 79	SUM
07010104	Mississippi River (Brainerd)	0	0	4	4	4	1	0	1	8	2	0	24
07010106	Crow Wing River	0	0	0	4	4	0	0	0	2	0	0	10
07010107	Redeye River Leaf River	0	0	0	2	3	0	0	0	1	2	0	8
07010108	Long Prairie River	0	0	1	3	5	1	1	0	1	0	2	14
07010201	Mississippi River (Sartell)	0	0	1	5	6	2	0	1	1	0	0	16
07010202	Sauk River	0	0	3	5	6	2	0	0	1	0	0	17
07010203	Mississippi River (St. Cloud)	2	0	5	5	4	0	1	0	10	0	0	27
07010204	Crow River, North Fork	0	0	5	11	6	3	0	0	1	0	2	28
07010205	Crow River, South Fork	0	0	6	5	9	1	1	0	3	2	0	27
07010207	Rum River	0	0	1	6	7	2	0	0	2	0	4	22
10		2	0	26	50	54	12	3	2	30	6	8	193

Lower Mississippi River Basin

HUC	Major Name	XL Power	XL	Large	Medium	Small	? Flow	MNG 25	MNG 255	MNG 49	MNG 64	MNG 79	SUM
07040002	Cannon River	0	0	3	7	13	5	0	2	5	0	0	35

Indirect Dischargers

Minnesota River Basin

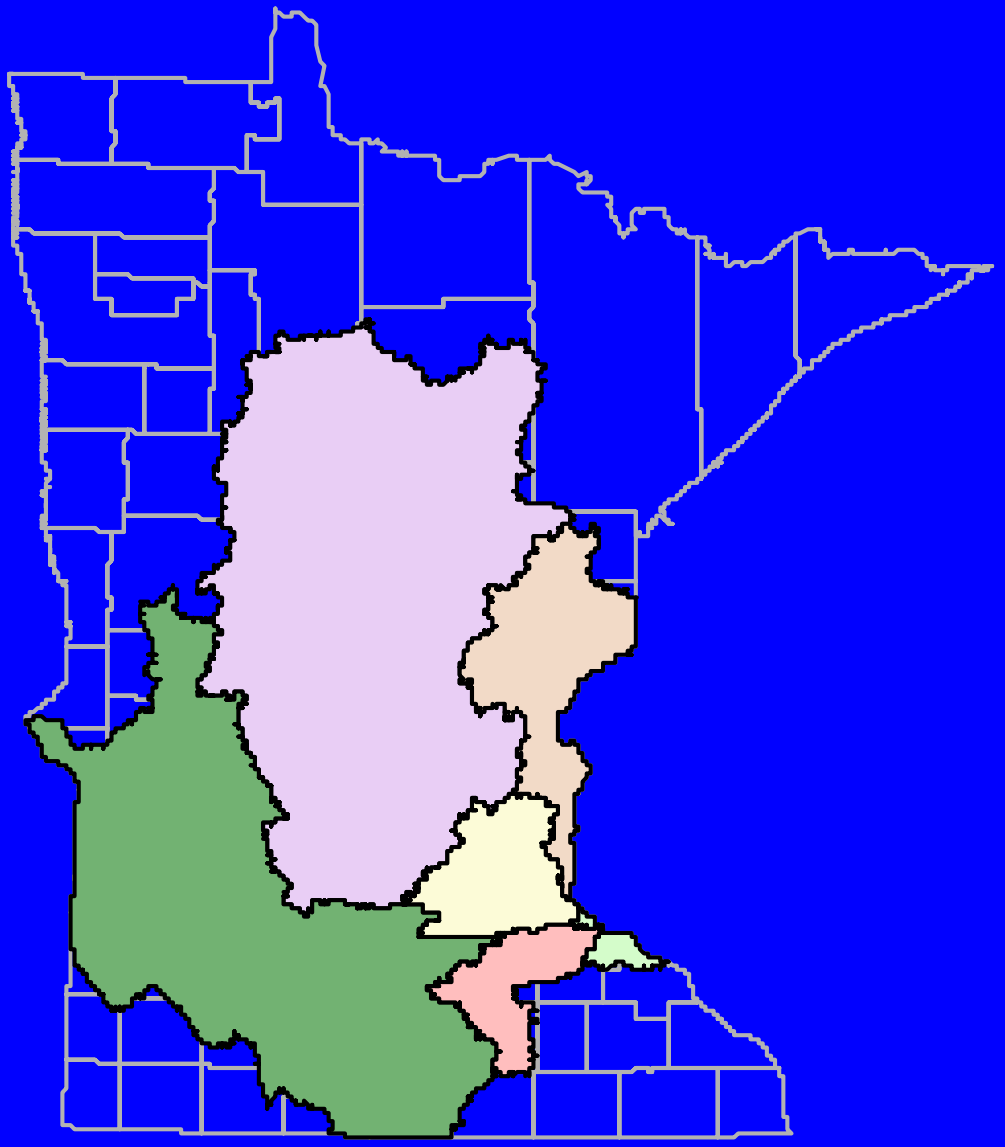
HUC	Major Name	XL Power	XL	Large	Medium	Small	? Flow	MNG 25	MNG 255	MNG 49	MNG 64	MNG 79	SUM
07020004	Minnesota River (Granite Falls)	0	0	2	9	18	2	0	0	6	0	0	37
07020005	Chippewa River	0	0	1	2	14	0	0	0	0	0	0	17
07020006	Redwood River	0	0	2	0	7	2	0	0	2	0	0	13
07020007	Minnesota River (Mankato)	0	0	7	7	10	3	0	2	7	2	0	38
07020008	Cottonwood River	0	0	1	6	13	2	0	0	1	0	0	23
07020009	Blue Earth River	2	0	2	4	13	5	0	1	1	0	0	28
07020010	Watonwan River	0	0	2	3	8	0	0	0	0	2	0	15
07020011	Le Sueur River	0	0	3	6	11	0	0	0	0	0	0	20
07020012	Minnesota River (Shakopee)	0	0	1	10	5	1	0	1	0	2	0	20
9		2	0	21	47	99	15	0	4	17	6	0	211

St. Croix River Basin

HUC	Major Name	XL Power	XL	Large	Medium	Small	? Flow	MNG 25	MNG 255	MNG 49	MNG 64	MNG 79	SUM
07030001	St. Croix River (Upper)	0	0	0	0	1	0	0	0	2	0	0	3
07030003	Kettle River	0	0	1	4	3	0	0	0	2	0	0	10
07030004	Snake River (St. Croix River)	0	0	0	3	1	0	1	0	3	0	0	8
07030005	St. Croix River (Lower)	1	0	2	4	6	0	0	0	2	0	2	17
4		1	0	3	11	11	0	1	0	9	0	2	38

WLA Equation

- WLA = 0.75 * E * A
  - 0.75 represents a 25% reduction in loading
  - E represents an export coefficient for the pollutant
    - 0.50 lb/acre/year for P
    - 225 lb/acre/year for TSS
  - A represents urban acres → using NLCD, all developed acreage within regulated MS4s
  - Adjust upward by 3% to account for growth in 2000's



- We have to do each of these calculations for six sub-basins within the watershed
- These are for average flow, so numbers were generated for each flow regime based on a proportionality factor

What about Future Growth?

- Future growth was put into a Reserve Capacity *
- Approach is unresolved yet
- One option: use the same equation as for the WLA with two adjustments
  - Consider the entire area within regulated MS4s that was not ‘developed’
  - Use a reduction fraction of 0.50

* For Red Wing, future growth could go into the WLA

Implementation Approach

- Performance-based approach → TMDL implementation plan will contain BMPs and associated reduction factors. MS4 implements these to get to necessary reduction.
- MS4s can model loads if they prefer.

Compliance

- MS4s that utilize information in the implementation plan will be considered in compliance with the WLA
- Use of alternative BMPs will require justification
- Must demonstrate progress during each permit cycle. Implementation plan could lay out a suggested schedule

Next steps

- Allocations – should be finalized within the next month or so
- Implementation → Summer 2009 – spring 2010
  - MS4 Work group to develop list of BMPs and associated reductions
  - Work group to develop a general compliance schedule