Red Cedar River Basin Evaluation History

1990 Baseline phosphorus loading data collected
1992 Tainter Lake modeling completed
1995 Red Cedar Steering Committee formed (EPA grant), basin DO monitoring, sediment cores, lake model revised, pollutant delivery (SWRRB) modeling initiated
1996 Tainter, Menomin & Red Cedar River listed as impaired waters, Lake user survey conducted
1997 Additional sampling for pollutant delivery modeling
1998 Statewide BMP cost analysis completed
1999 Pollutant delivery model completed
2001 DNR begins development of Tainter Lake TMDL
2002 Watershed initial goals developed

Red Cedar River Basin Evaluation History (cont)

2003 TMDL development effort suspended
2005 Lakes posted with algal toxin signs
2006 TMDL effort resumed, implementation evaluation begins
2007 Meetings with point sources regarding Individual wasteload allocations
2008 Lake Menomin added to TMDL and Menomonie municipal stormwater allocation developed
2009 Allocation for remaining general permit point sources developed
2010 Consultation with USEPA begins, WI phosphorus standard enacted

Red Cedar River Basin Evaluation History (cont)

2011 Consultation with USEPA concludes, TMDL modified & draft released

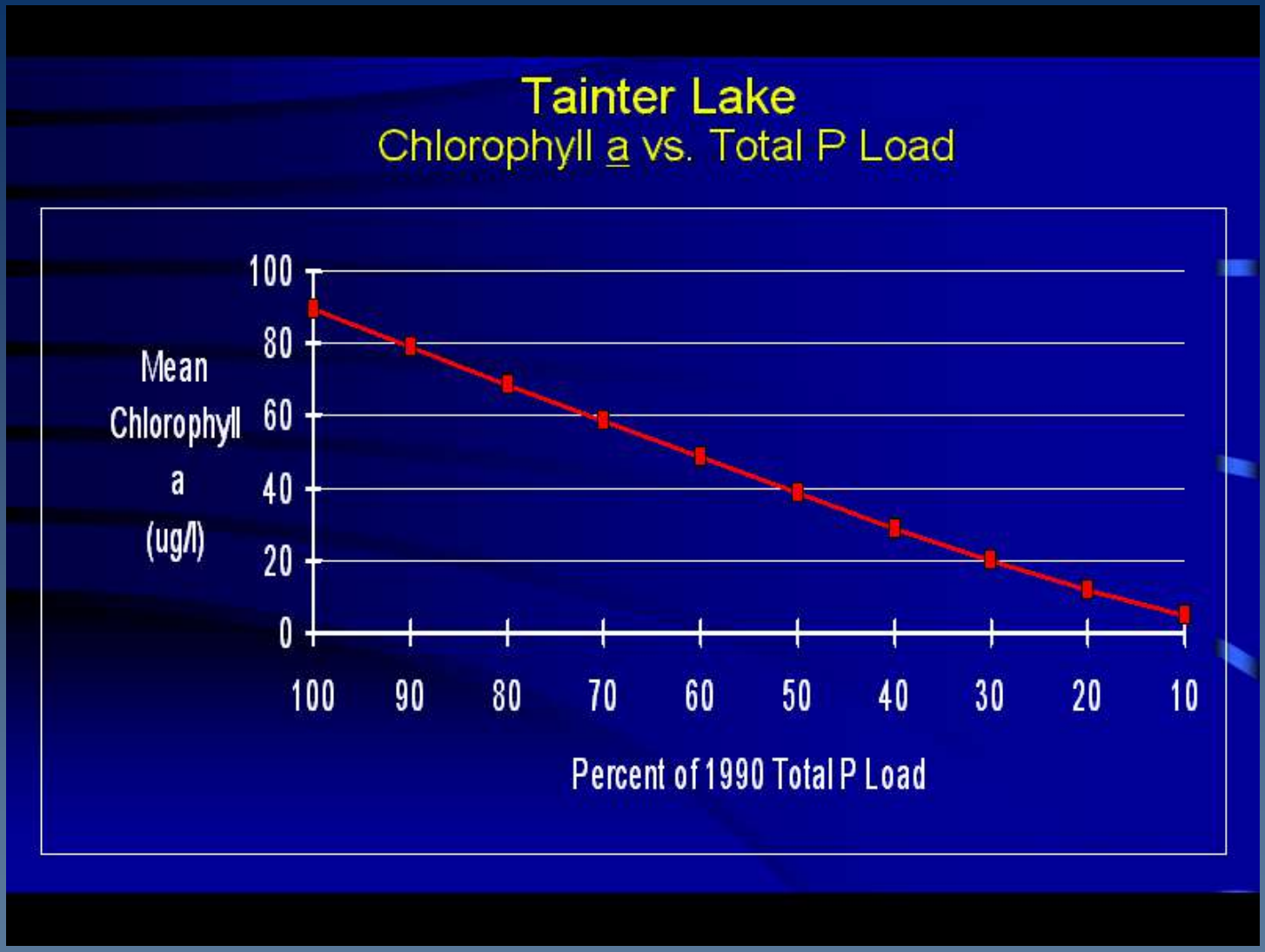
2011 Public Hearings held on TMDL, comments taken and addressed in the draft

2012 May: Final TMDL written and submitted to US EPA for approval

2012 September: Final TMDL approved by US EPA

Red Cedar River Basin TMDL

- What is a TMDL?
  - Total Maximum Daily Load
  - The maximum amount of a pollutant that a waterbody can receive and still meet water quality standards
  - Red Cedar Basin: Total Annual P load



Models say lake algae will respond to increases or decreases in watershed load and contribution from the sediment is not a large factor.

- Who developed the initial draft TMDL load allocation?

  - TMDL work group of 14 stakeholders met 12 times
  - Private individuals, lake associations
  - State and local agency staff
  - Additional meetings of point sources

Red Cedar River Basin TMDL

- TMDL Initially Proposed Goal
  - Basin-wide 45% P load reduction (from 1990 levels)

TMDL goal modified for 2011 draft to recognize science associated with statewide phosphorus standard and EPA expectations

Final 2012 TMDL Goals

Tainter Lake	**Baseline (1990)**	**TMDL Goals**
Total phosphorus (µg/L)	150	59
Chlorophyll-a (µg/L)	87	25
Secchi depth (m)	0.8	1.6
Percent time >30µg/L chloro-a	92	28
Lake Menomin	**Baseline (1990)**	**TMDL Goals**
Total phosphorus (µg/L)	108	57
Chlorophyll-a (µg/L)	40	25
Secchi depth (m)	1.3	2.0
Percent time >30µg/L chloro-a	54	28

Tainter/ Menomin Revised TMDL Goal

- 65% Nonpoint source P load reduction from upstream from Tainter Lake
- 45% Nonpoint source P load reduction from watershed contributing to Lake Menomin
- Point sources receive P load caps that ensure they will never constitute more than 10% of the total annual load
- Permitted urban areas in Rice Lake and Menomonie receive P load cap in stormwater permits

Tainter/Menomin TMDL Wasteload Allocations

Annual load cap on point sources based on a 1 PPM treatment level and facility design flow.

- Point sources that currently treat for P would not need to do anything until they reach their WLA.
- Small dischargers not currently treating for P would need to upgrade their facility or pollutant trade.
- Small dischargers could trade with either nonpoint sources or larger point sources.
- Reserve capacity set aside for future use

Phosphorus TMDL Allocations for Tainter Lake

Category	Baseline Annual Phosphorus Load (pounds)	Annual Phosphorus Load Allocation (pounds)	Daily Phosphorus Load Allocation (pounds)
Nonpoint Sources	463,400	157,400	436
WPDES Permits	42,900	20,100	50
Totals:	506,300	177,000	486

* NPS P load based on SWRRB model results minus point source load (WDNR 1999)

Phosphorus TMDL Allocations for Lake Menomin

Category	Baseline Annual Phosphorus Load (pounds)	Annual Phosphorus Load Allocation (pounds)	Daily Phosphorus Load Allocation (pounds)
Tainter Lake discharge	319,000	145,300	398
Nonpoint Sources (unsewered watershed)	3,500	2,200	6.2
Menomonie Stormwater	3,500*	2,200	6.1
General WPDES Permits		10	0.028
CAFO permits (production areas)		0	
Totals:	326,000	149,710	411

* Includes 1993 NPS load (cropland and urbanized land) from 2007 MS4 planning area.

Red Cedar River Basin TMDL

- Remaining steps?
  - Implement TMDL strategies
  - Monitor phosphorus levels for change
  - Modify plan as need be