



# Wisconsin River Basin TMDL

March 5, 6, and 14, 2018

Informational Meetings



**Total Maximum Daily Load**

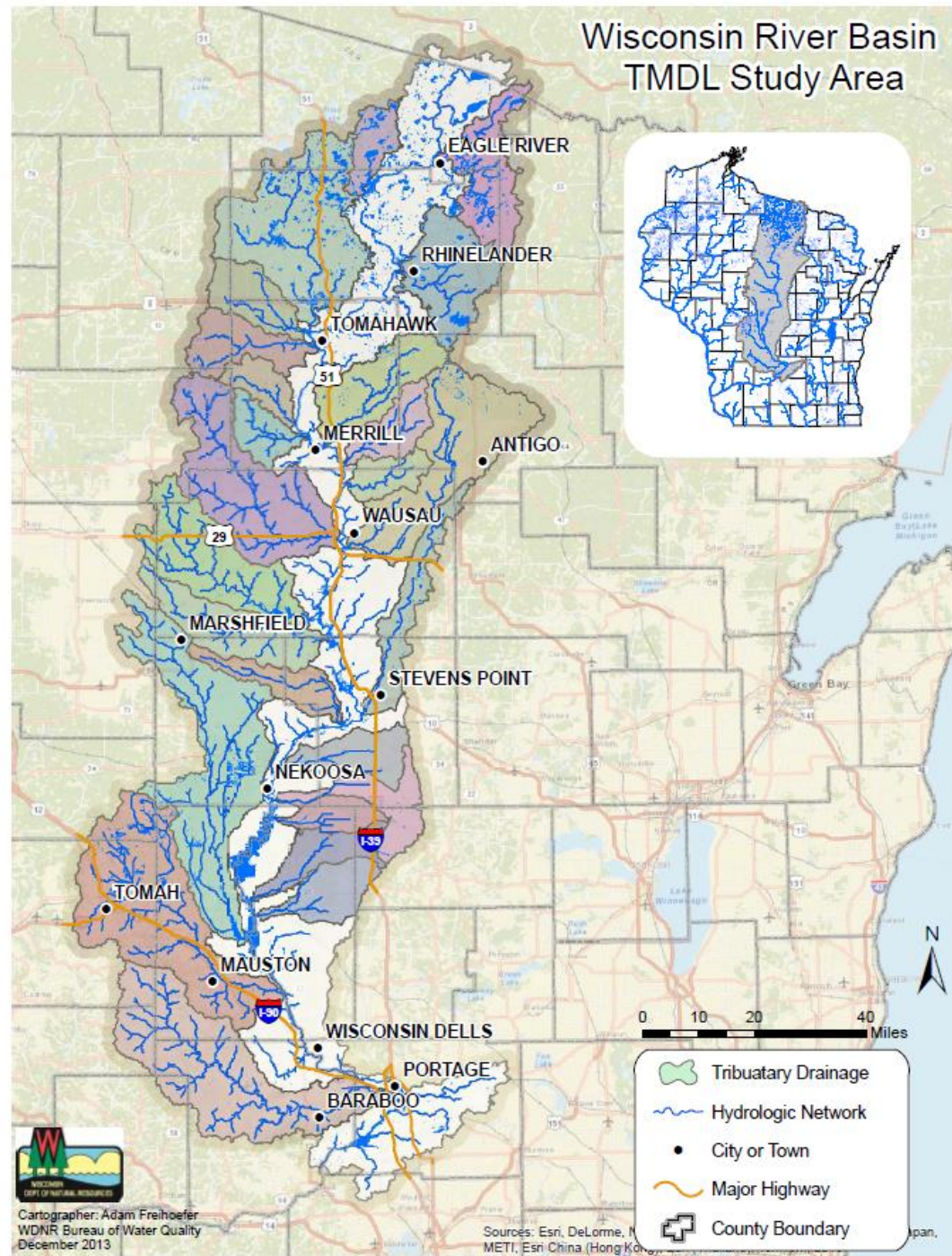
# Presenters

Wisconsin Department of Natural Resources

Andrew Craig  
Kevin Kirsch  
Matt Diebel

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Wisconsin River Basin TMDL  
Implementation Coordinator



# Acknowledgement of the Development Team

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# Presentation Outline

1. Overview of Impaired Waters Program
2. Overview of TMDL Development and Allocations
3. Discuss Point Source Implementation
4. Discuss Nonpoint Source Implementation
5. Outline Funding Assistance and Grant Programs
6. Outline Next Steps

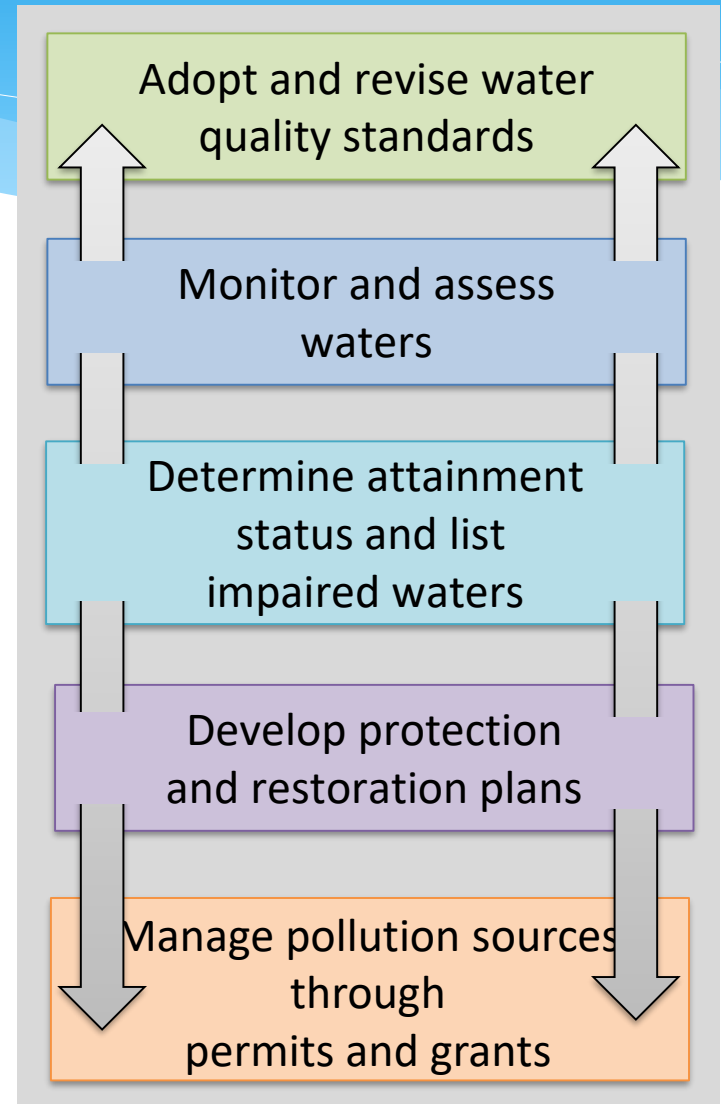
# Background Information

- \* DNR website: [dnr.wi.gov](http://dnr.wi.gov)
  - \* Search Wisconsin River TMDL
- \* Copy of February 21<sup>st</sup> webinar (slides and recording)
- \* Report and supporting material



# Clean Water Act - Impaired Water Program

- \* Federal Regulatory Underpinnings:
  - \* Clean Water Act of 1972 (amended in 1977)
  - \* Established Impaired Waters 33 USC 1313(d) and TMDL program 40 CFR 130.7



# 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.”
- \* Per Wis. Stat. s. 281.15 water quality standards must be adopted by rule.



# Statewide Phosphorus Criteria



## Rivers

100 µg/L



## Streams<sup>1</sup>

75 µg/L



## Reservoirs

- Not Stratified = 40 µg/L
- Stratified = 30 µg/L



## Inland Lakes<sup>2</sup>

Ranges from 15-30 µg/L



## Great Lakes

- Lake Michigan = 7 µg/L
- Lake Superior = 5 µg/L

<sup>1</sup>All unidirectional flowing waters not in NR 102.06(3)(a). Excludes Ephemeral Streams.

<sup>2</sup>Excludes wetlands and lakes less than 5 acres

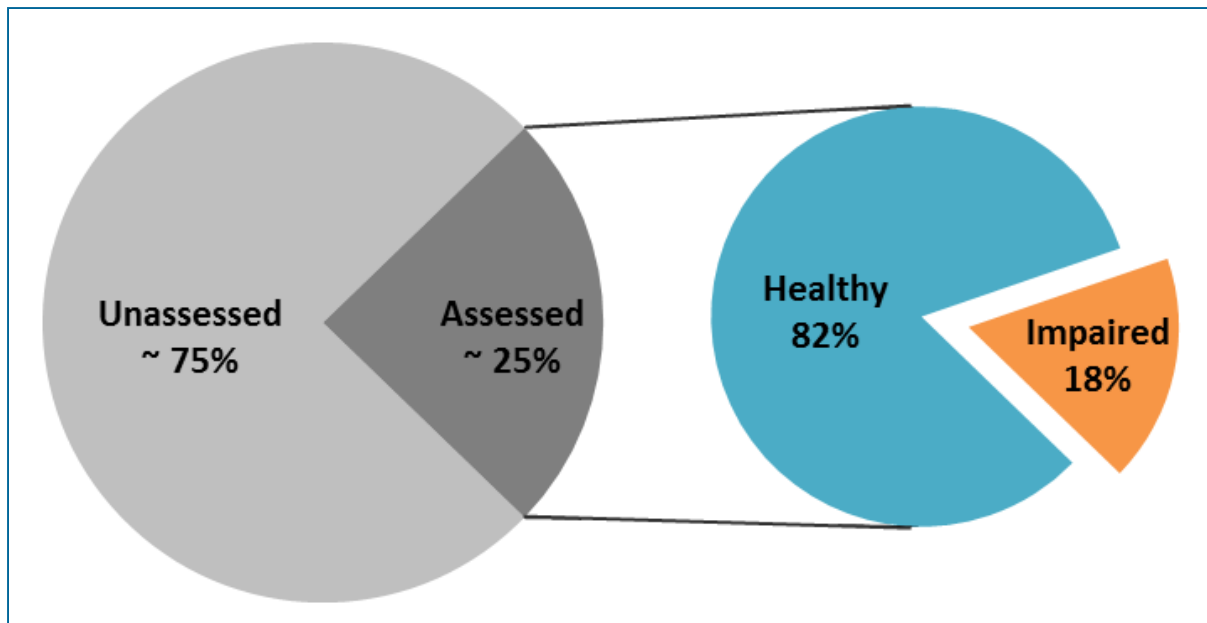


# Assessing and Listing of Impaired Waters

- \* Required under 33 USC 1313(d)
- \* Impaired Waters List updated every 2 years based on monitoring data.
- \* Public comment period and submitted to U.S. EPA for approval. EPA can be petitioned to add waters if we do not.
- \* More information available on WDNR Website:  
<http://dnr.wi.gov/topic/impairedwaters/>

# Assessed Waters - Healthy Waters

Of waters assessed, 6,978 of the waters are attaining designated uses and meeting criteria. Currently, 4.5% of the state's waters are listed as impaired.



# What are TMDLs?

- \* EPA requires that waters not meeting water quality standards be listed as impaired on Wisconsin's 303-d list and have TMDLs or a comparable water quality restoration plan developed.
- \* TMDLs determine the amount of a pollutant a waterbody can receive and still meet water quality standards.

**Total Maximum Daily Load =**

**Load Allocation**



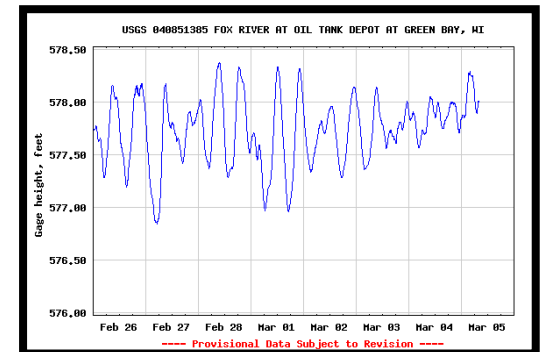
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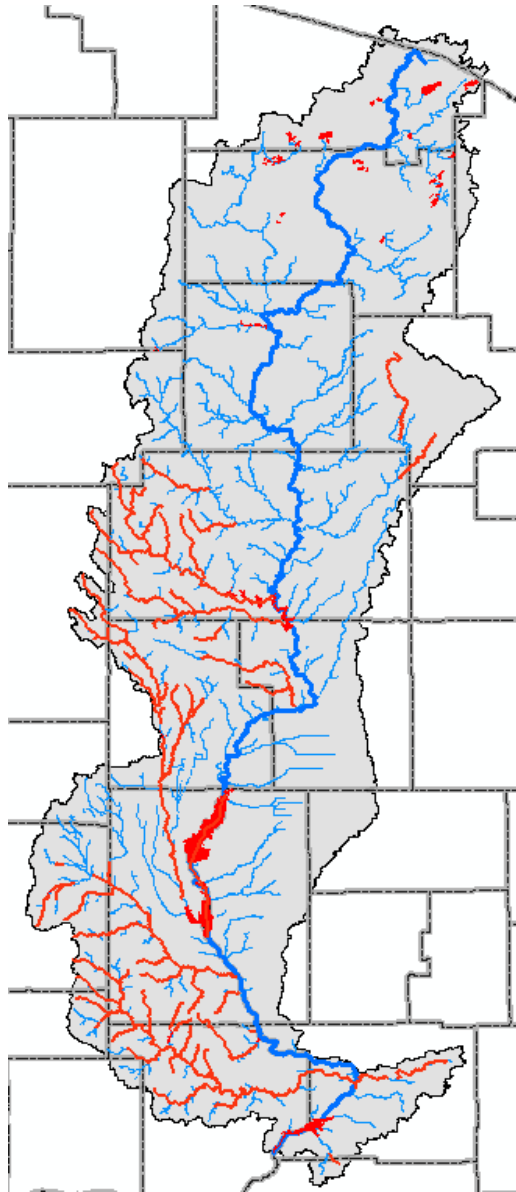
**Waste Load Allocation**



+

**Margin of Safety**





- Phosphorus Impaired Waters (2016)

 110 streams/ivers segments

 38 lakes/reservoirs



An aerial photograph showing a concrete structure, possibly a dam or bridge pier, heavily covered in bright green algae. The surrounding water is also a milky green color.

**Castle  
Rock**

A wide-angle photograph of a large lake with a significant portion of the water turned a pale, milky green. The shoreline is lined with dense green trees and some buildings are visible in the distance.

**Lake  
Wisconsin**

A photograph taken from the perspective of someone on a boat, looking out over a lake. The water is a dark, murky green. The shoreline is lined with lush green vegetation and trees.

**Lake  
DuBay**

A close-up photograph of a body of water with a thick layer of bright green algae. The water is very opaque and green. The shoreline is rocky and covered with green plants.

**Barnum Bay 2008**

**Petenwell**

# Why the TMDL was Started

**2001-2004**

Unsuccessful  
Funding  
Proposals

**2008**

First Pontoons  
and Politics

**1995**

**2000**

**2005**

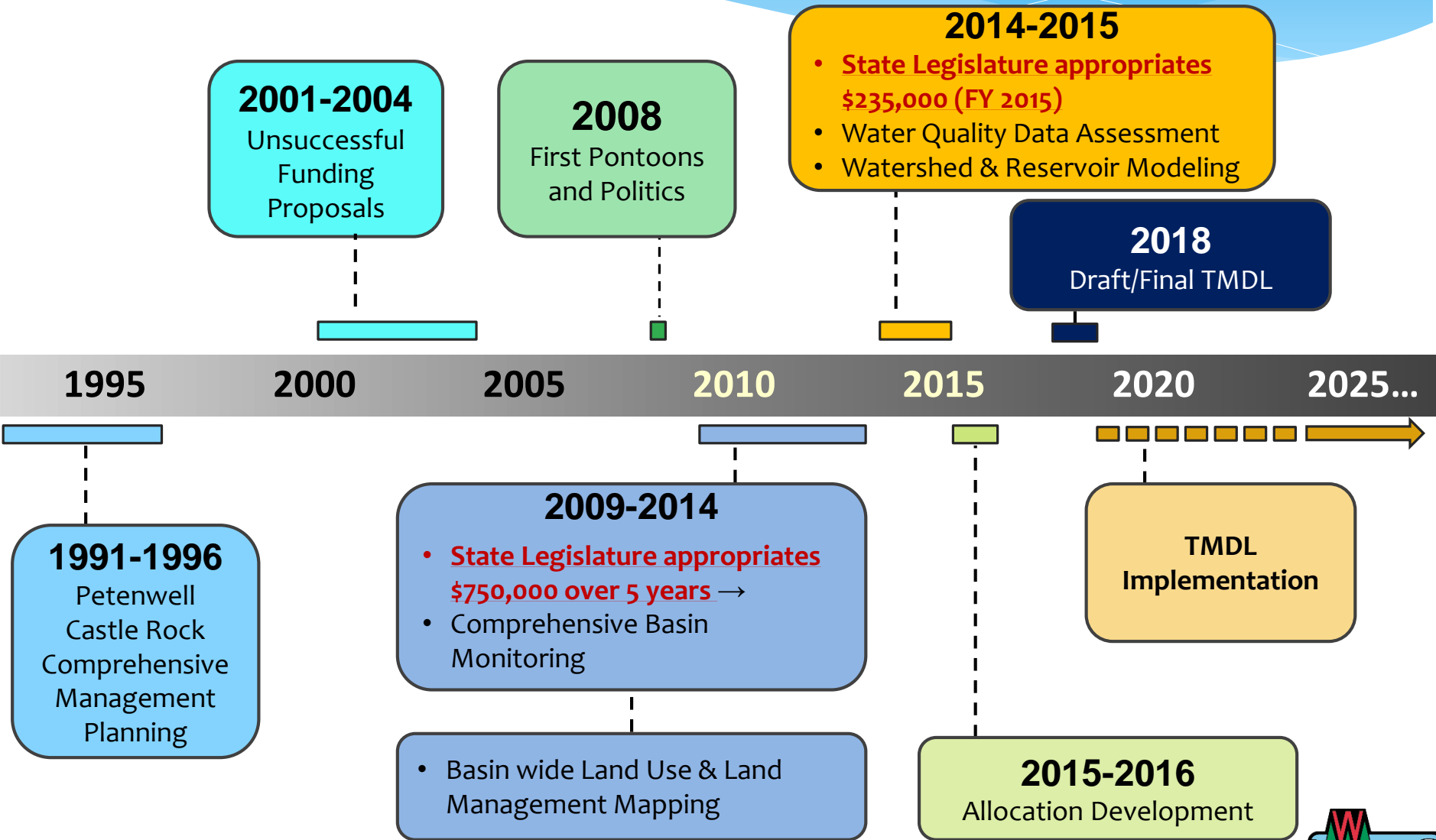
**2010**

**1991-1996**

Petenwell  
Castle Rock  
Comprehensive  
Management  
Planning



# Multi-year effort with an excess of \$2.8 million in State and Federal Spending



# Draft Report

## Total Maximum Daily Load for Total Phosphorus in the Wisconsin River Basin

February 21, 2018 DRAFT

Section 1: Introduction

Section 2: Watershed Characterization

Section 3: Monitoring

Section 4: Source Assessment

Section 5: Pollutant Loading Capacity

Section 6: Pollutant Load Allocations

Section 7: TMDL Implementation

Section 8: Public Participation



02/21/2018

Including Adams, Clark, Columbia, Dane, Jackson, Juneau, Langlade, Lincoln, Marathon, Monroe, Oneida, Portage, Price, Richland, Sauk, Shawano, Taylor, Vilas, Waushara, and Wood Counties, Wisconsin

**Prepared For :**  
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# Draft Report

## Appendices

Appendix A Tributary Information and Charts

Appendix B Lakes Requiring Additional Evaluation

Appendix C Site-Specific Criteria Analysis

Appendix D Watershed Modeling Documentation

Appendix E Sediment Monitoring

Appendix F Baseline Load

Appendix G MS4 Detail Maps

Appendix H Total Phosphorus Loading Capacity of Pelenwell and Castle Rock Flowages

Appendix I BATHTUB and Empirical Lake Models

Appendix J Allocations

Appendix K Proposed Site-Specific Criteria Allocations

Appendix L Watershed Implementation Activities

Appendix M CE-QUAL-W2 Reservoir Model

Section 1: Introduction

Section 2: Watershed Characterization

Section 3: Monitoring

Section 4: Source Assessment

Section 5: Pollutant Loading Capacity

Section 6: Pollutant Load Allocations

Section 7: TMDL Implementation

Section 8: Public Participation



*Moon Bay, Lake Wisconsin July, 2008*

# Study Area



# Wisconsin River Basin

\* 21 Counties and 85 cities and villages

\* Permitted Wastewater Facilities

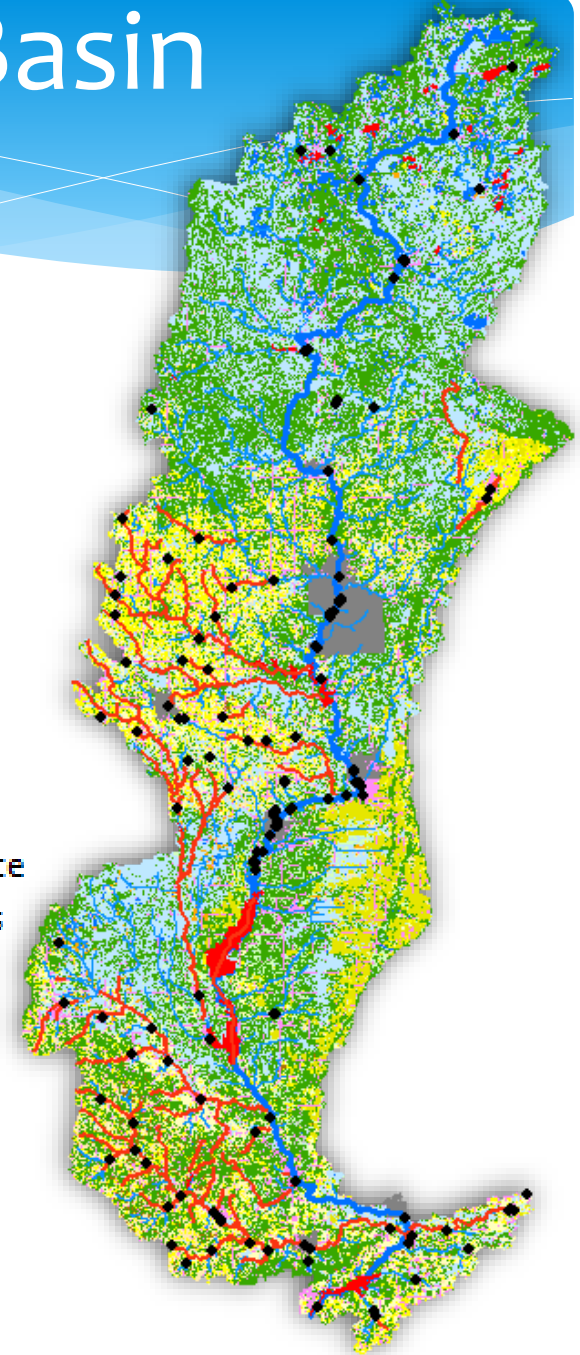
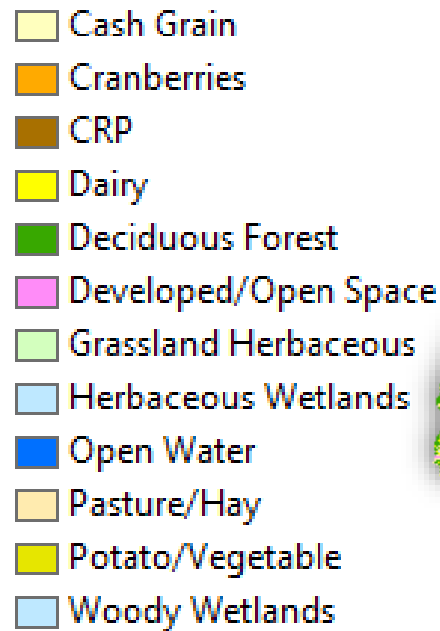
● 108 facilities

\* Permitted MS4s

■ 14 municipalities

\* 14 Citizen Groups

## Land Cover



# TMDL Development Process



- \* For each reach:
  - \* Loading capacity = Water Quality Target \* Flow
- \* For lakes and reservoirs a response model is needed to simulate loads based on waterbody characteristics to determine pollutant response (algal growth vs TP)

Report Section 3

# Monitoring



- \* Extensive water quality monitoring 2010 – 2013
  - \* 13 main stem Wisconsin River sites
  - \* 19 tributary sites
  - \* 20 reservoir sites
  - \* Water quality samples every 2 weeks
  - \* Continuous river flow
- \* Foundation of all other project components

# Statewide Phosphorus Criteria



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100 µg/L



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<sup>2</sup>Excludes wetlands and lakes less than 5 acres

# Phosphorus Criteria

Wisconsin River Basin

Minocqua-Kawaguesaga



RHINELANDER

TOMAHAWK

MERRILL

WAUSAU

Lake Wausau

Big Eau Pleine



Lake Du Bay

MARSHFIELD

STEVENS POINT

WISCONSIN RAPIDS

Petenwell



Castle Rock



Lake Delton

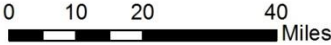
Lake Redstone



WISCONSIN DELLS

BARABOO

Lake Wisconsin



### Stream / River Phosphorus Criteria



### Reservoir Phosphorus Criteria



- Notes:
1. Phosphorus criteria delineated using the 24K Hydro layer and the 100 ug/L river extent narrative from administrative code NR 102.06
  2. Streams with a stream order of two or greater are shown. All smaller tributaries stream are assumed to have a phosphorus criteria of 75 ug/L.

# Site-Specific Total Phosphorus Criteria for Petenwell Flowage, Castle Rock Flowage, and Lake Wisconsin

- Wisconsin Administrative Code NR 102.06(7) states that site-specific criteria (SSC) for total phosphorus (TP) may be adopted where site-specific data and analysis using scientifically defensible methods and sound scientific rationale demonstrate a different criterion is protective of the designated use of the specific surface water segment or waterbody.



# Recreational Use

Allowable phosphorus concentrations calculated to support recreational use and health by preventing excessive algae blooms.

(Chlorophyll *a* shall not exceed 20 µg/L more than 30% of days during July 15 – Sept 15).



# Site-Specific Total Phosphorus Criteria for Petenwell Flowage, Castle Rock Flowage, and Lake Wisconsin

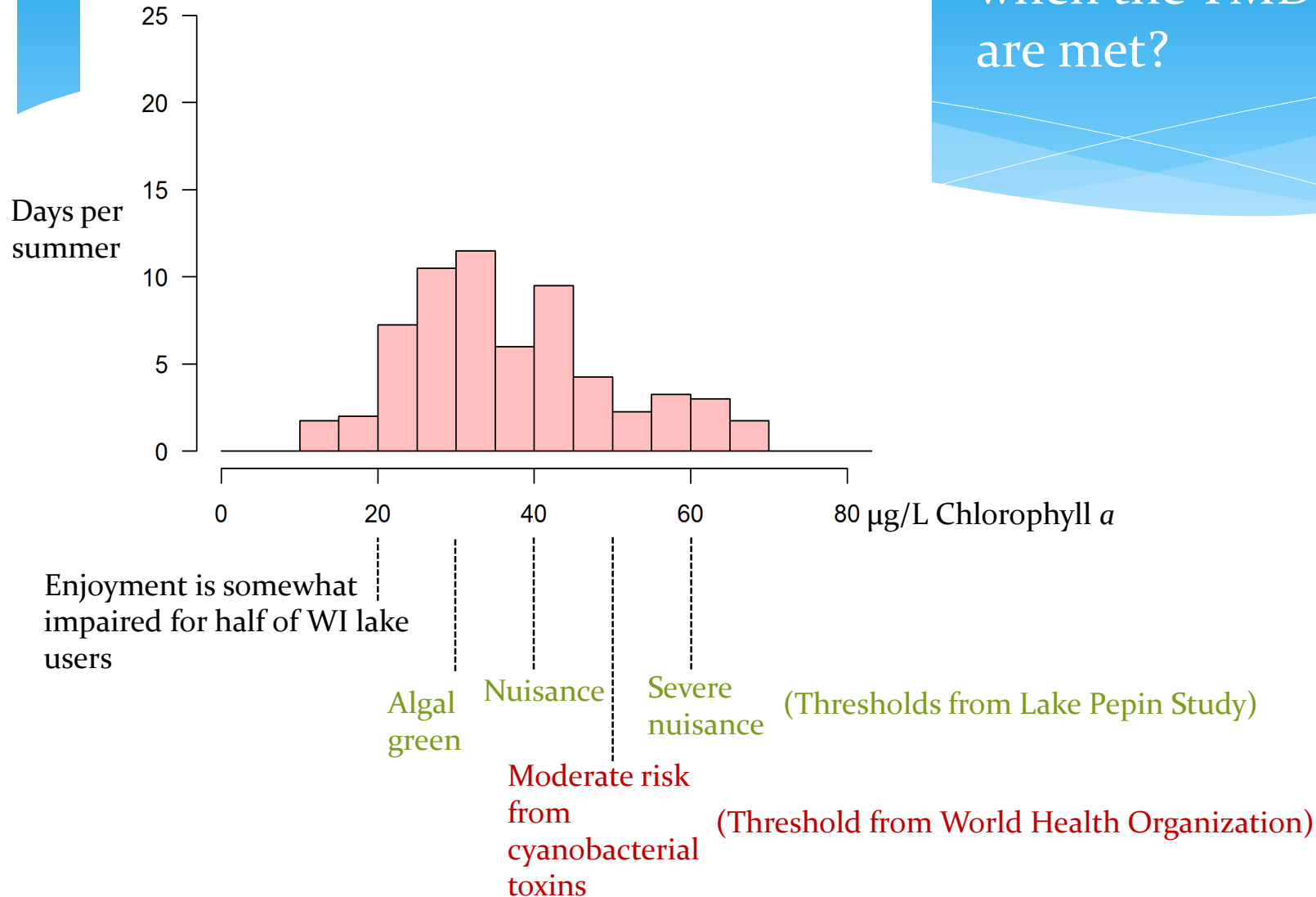
- TP SSC were estimated for Petenwell Flowage, Castle Rock Flowage, and Lake Wisconsin that are expected to meet the chlorophyll *a* target for recreational use.
- The SSC are based on empirical estimates of the effects of TP concentration, river discharge, and day of year on chlorophyll *a* concentration.

# Site-Specific Total Phosphorus Criteria for Petenwell Flowage, Castle Rock Flowage, and Lake Wisconsin

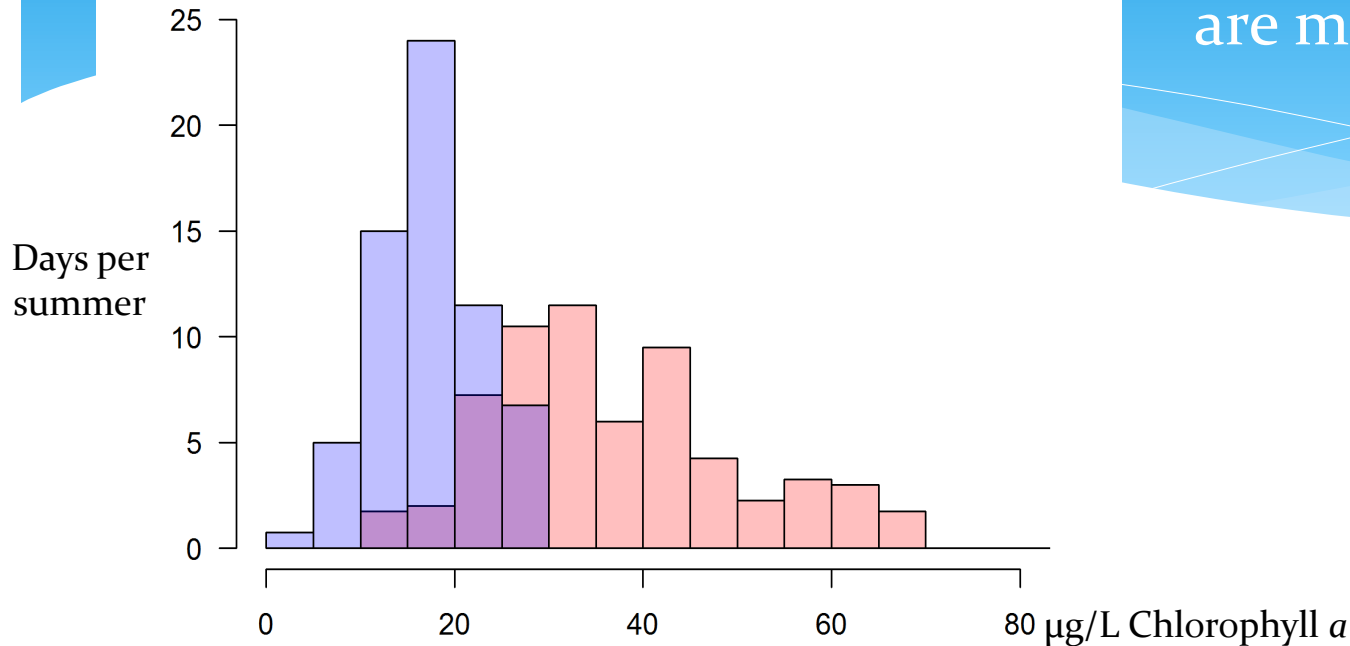
Reservoir	Existing TP Criterion ( $\mu\text{g/L}$ )	Recommended Site-Specific TP Criterion ( $\mu\text{g/L}$ )
Petenwell Flowage	40	53
Castle Rock Flowage	40	55
Lake Wisconsin	100	47

*Calculated to support recreational use by preventing excessive algae (Chlorophyll a shall not exceed 20  $\mu\text{g/L}$  more than 30% of days during July 15 – Sept 15)*

How much reduction in algae can we expect when the TMDL goals are met?



# How much reduction in algae can we expect when the TMDL goals are met?



Enjoyment is somewhat impaired for half of WI lake users

Algal green

Nuisance

Moderate risk from cyanobacterial toxins

Severe nuisance

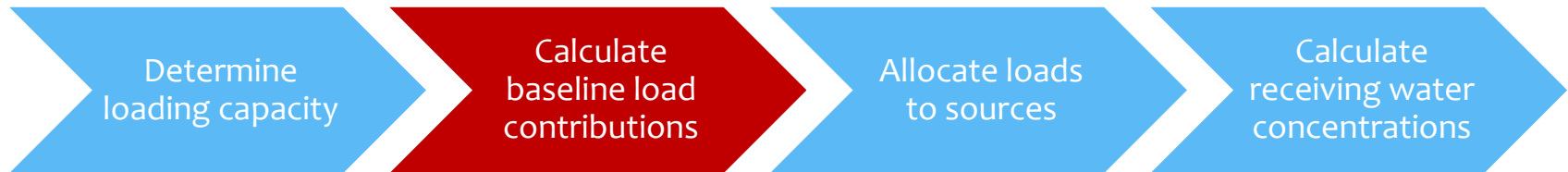
(Thresholds from Lake Pepin Study)

(Threshold from World Health Organization)

# Site-Specific Criteria (SSC)

- \* SSCs will impact the allowable loads to the reservoirs, and thus the resulting allocations. DNR has included two sets of allowable loads and allocations in the TMDL.
- \* SSCs must be adopted by rule. DNR can submit the TMDL to USEPA containing SSC allocations prior to adoption of the SSC; however, the SSC allocations become effective once both the TMDL and SSC have been approved by USEPA.

# TMDL Development Process



- \* Baseline conditions based on existing regulatory requirements or current discharge for point sources.
- \* Nonpoint source baseline represents existing land management (See Section 5).

# Define Baseline and Source Assessment

1. Define and separate phosphorus loads by source type
  - a. Natural/background (uncontrollable)
  - b. Anthropogenic (controllable)
    1. Non-point (agriculture and urban runoff)
    2. Point-source (municipal/industrial wastewater and urban runoff)
2. Estimate loads using models where monitoring data does not exist (ungauged basins)



# Defining Land Management

## 1 Define Crop Rotations

To define the crop rotations in each field, satellite-derived landcover maps were used showing the types of crops growing each year over a five year period (2008–12).



## 2 Define Field Rotations

Crop rotations were then grouped into specific field rotations, such as dairy, cash grain, continuous corn, or potato/vegetable.



## 3 Meet with Counties

Meetings were held with local experts (county conservationists and agricultural professionals) to confirm and/or refine crop rotations, and to specify management practices (e.g., tillage and nutrient application).



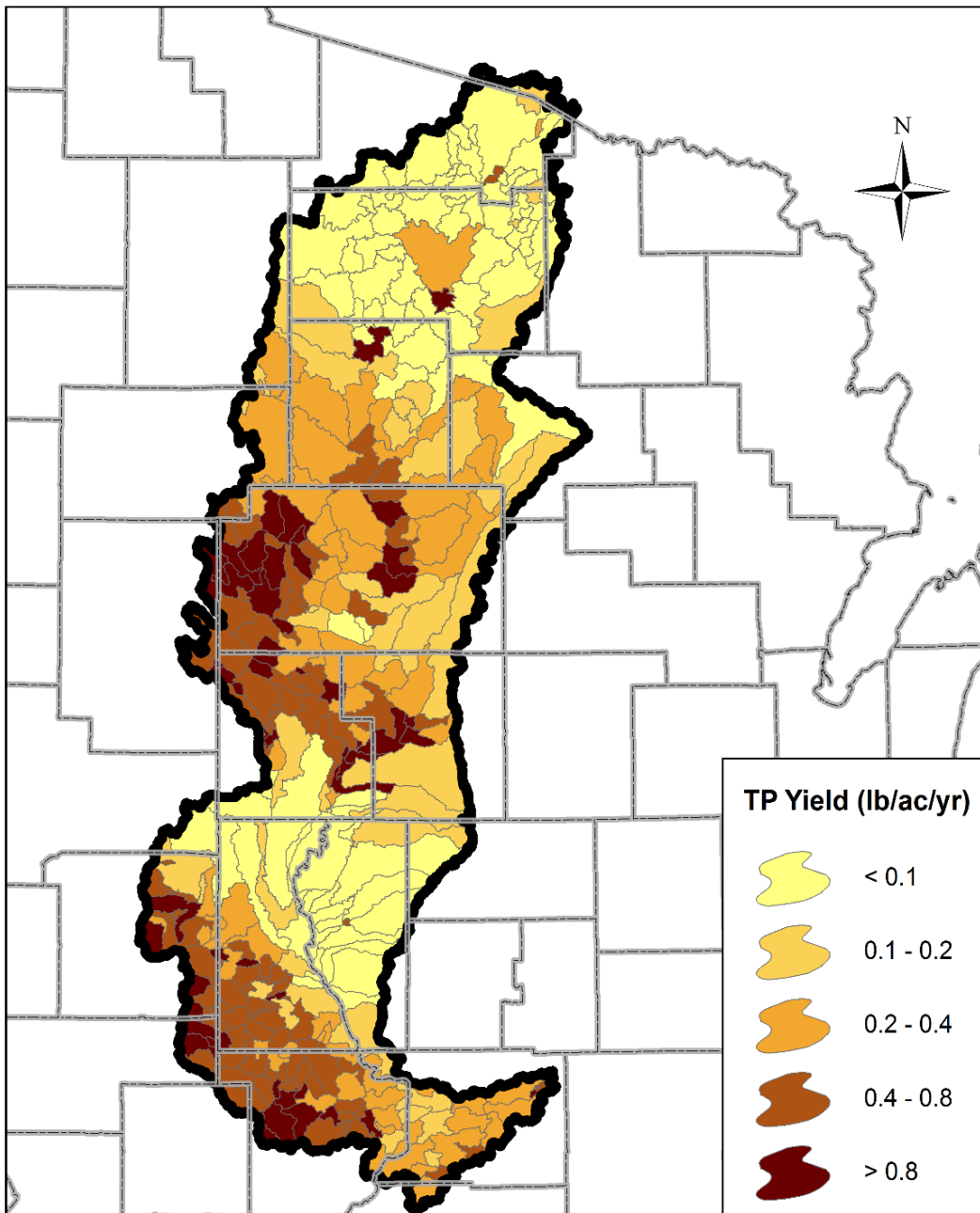
## 4 Compare to Field Data

The updated crop rotation dataset was validated by comparing it to independently measured data sources, including cattle inventory records, county crop acreage reports, dairy producer points, and field transect surveys.



FIGURE 19. DEFINING LAND COVER AND LAND MANAGEMENT IN AGRICULTURAL AREAS.

# Model Results



- \* Streamflow and TP loads per subbasin

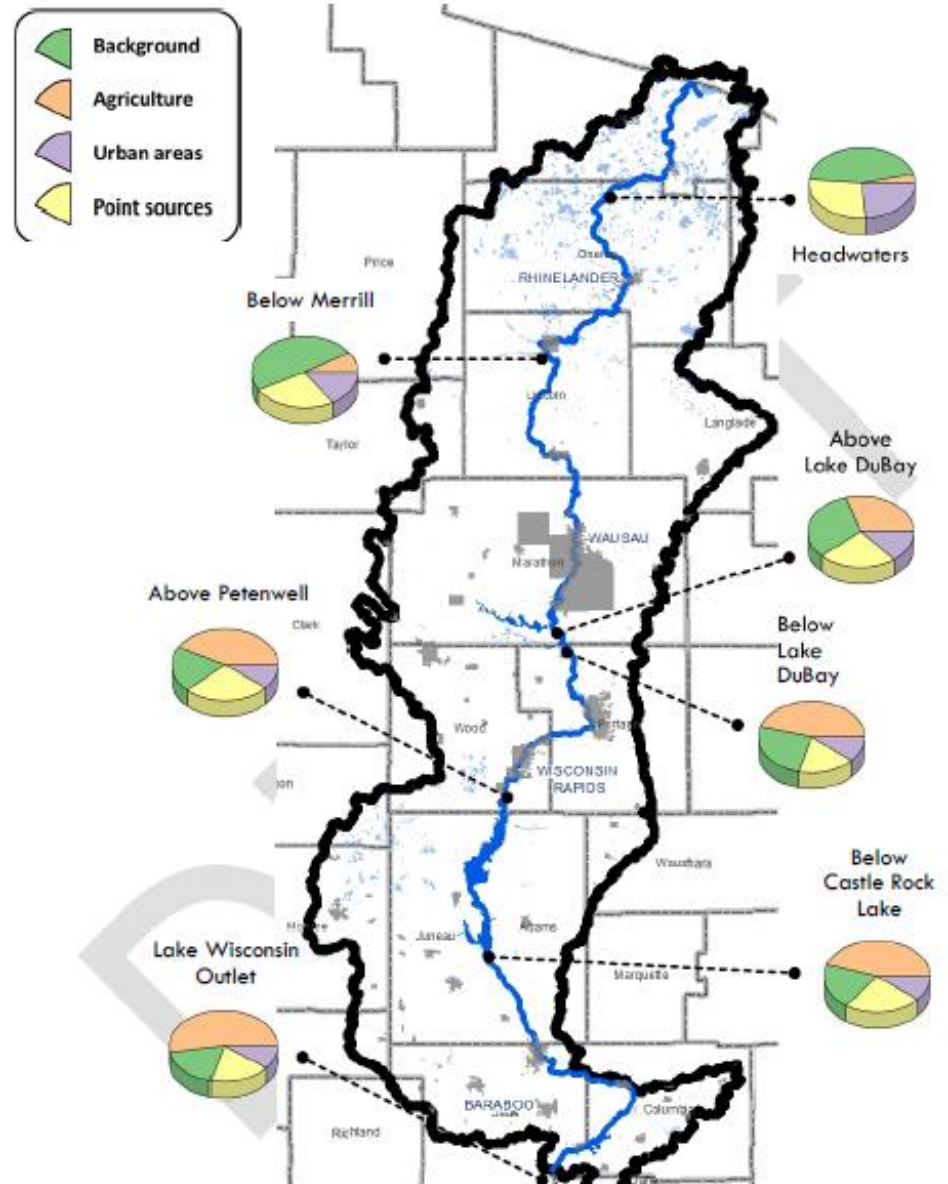
- \* TP loads split by source type

Figure 18. Total phosphorus yields per subbasin

# Quantification of Sources

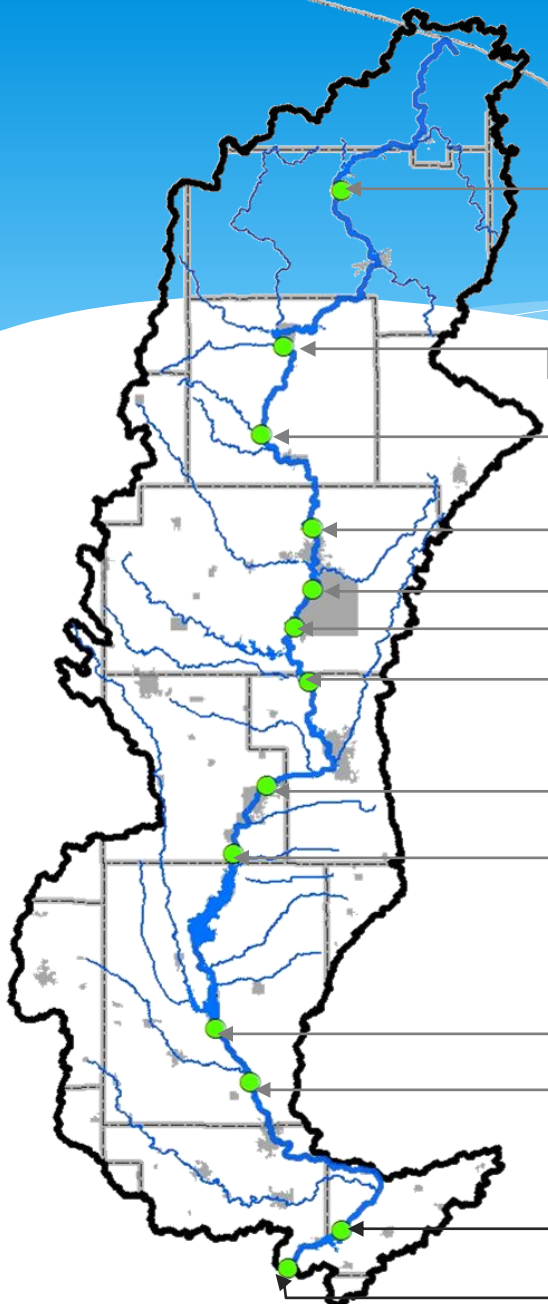
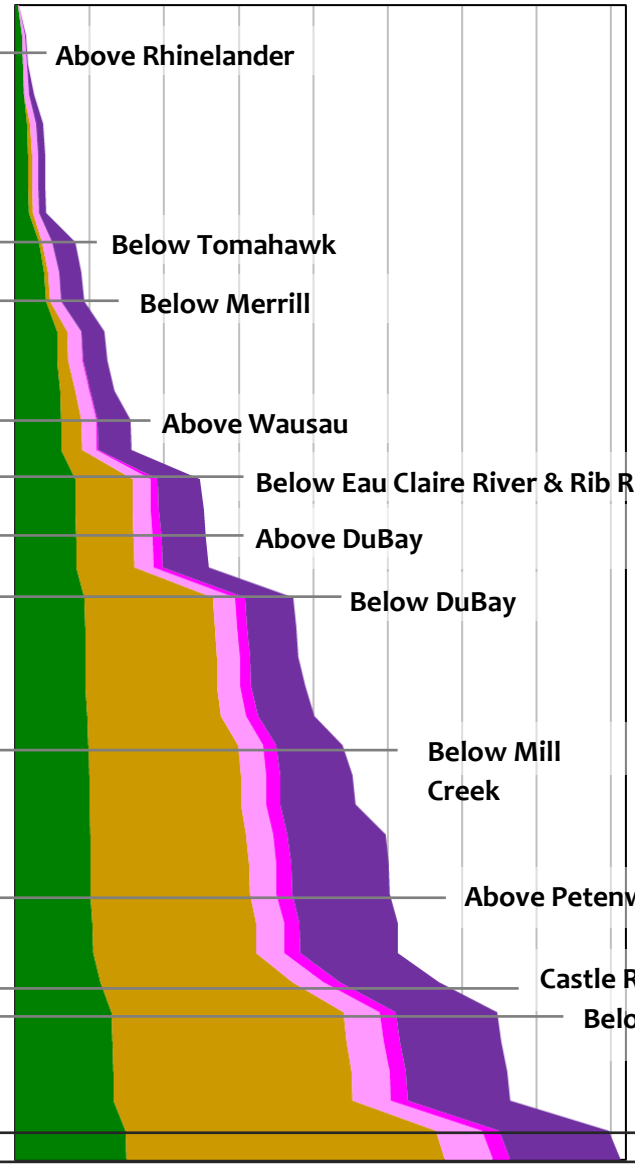
- \* Background
- \* Agricultural
- \* Urban Runoff
- \* Industrial and Municipal Point Sources

Total Maximum Daily Load for Total Phosphorus in the Wisconsin River Basin



# Baseline Loadings for Wisconsin River

0 200 400 600 800 tons/year



# TMDL Development Process



- \* Allocation strategy consistent with other TMDLs.
  1. Start with baseline condition,
  2. evaluate alternative limits and bring everyone to the same level,
  3. apply needed reductions using a proportional reduction (by mass, equal percent reduction) approach.
- \* Allocations driven by local water quality requirements **and** downstream reservoirs.
- \* Calculated allocations with and without SSC.

## Load Allocation



+

## Waste Load Allocation



### Load Allocation

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

### Waste Load Allocation

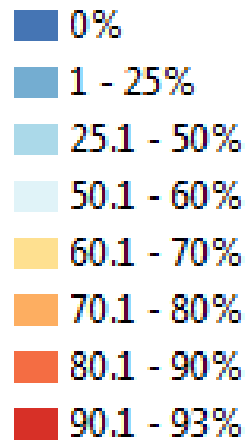
- \* WWTPs / POTWs
- \* Industries
- \* Permitted MS4s
- \* Non-Metallic Mines
- \* Construction Sites
- \* NCCWs
- \* CAFOs

# Percent Reduction Maps

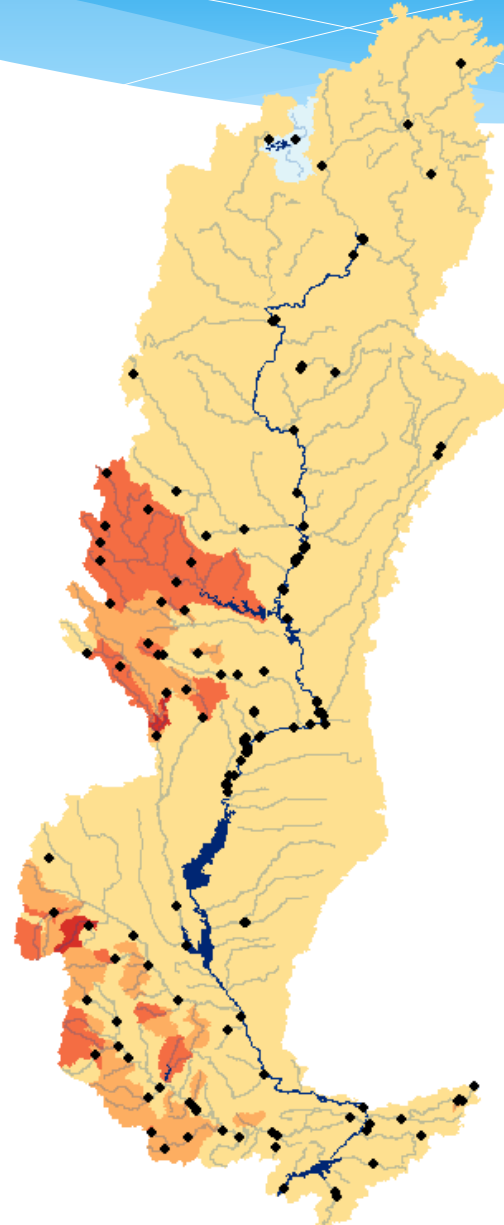
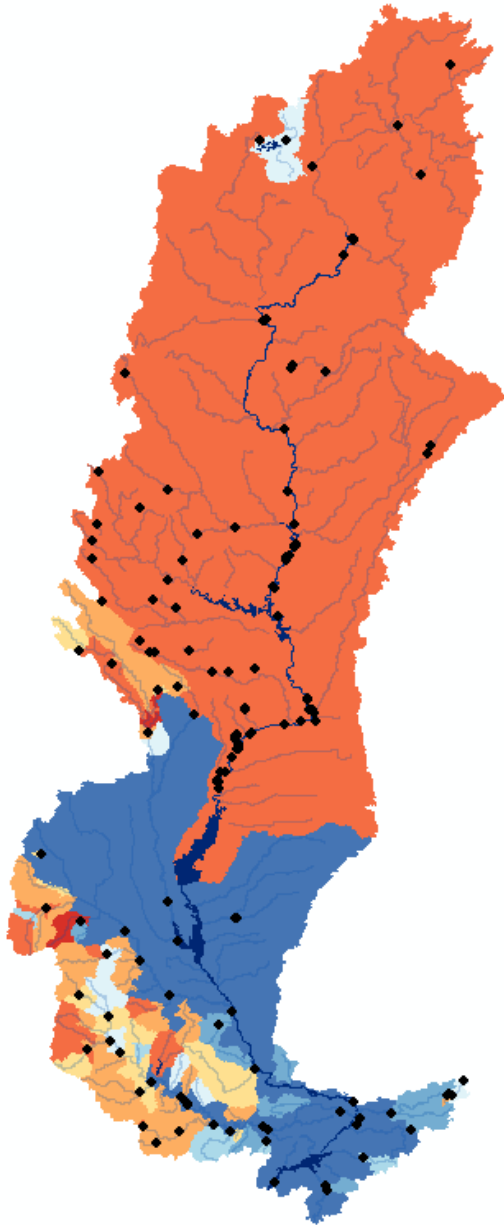
**Current  
Criteria**

**SSC**

Percent Reduction



Outfalls



# Allocations to MS4s & NPS

- \* Permitted MS4s (See Table J3 and J4, K3 and K4)
  - \* Apply percent reduction to “no-controls”/baseline condition as outlined in the TMDL MS4 guidance.
  - \* Extended compliance option with agreed upon benchmarks.
- \* Nonpoint Source (See Table J4 and K4)
  - \* Compliance with more stringent performance standards is voluntary unless promulgated through NR 151.004 to become a performance standard. Cost share requirements still in place.



# Allocations to Wastewater

- \* As a result of the TMDL, wastewater facilities will receive mass allocations that meet water quality standards for both local and downstream reservoirs.
- \* Once EPA has approved the TMDL, the next permit must contain an expression of the WLAs consistent with the TMDL.

# Allocations – Appendices J and K

## **Appendix J – Allocations (current criteria):**

*Table J-1: Total Phosphorus Annual Load Allocations by Reach*

*Table J-2: Annual Total Phosphorus Wasteload Allocations by Permitted Point Source*

*Table J-3: Annual Total Phosphorus Wasteload Allocations by MS<sub>4</sub>*

*Table J-4: Annual Total Phosphorus Percent Reduction by Reach and to Meet Total Local Water Quality vs. Downstream Requirements:*

## **Appendix K – Proposed Site Specific Criteria Allocations:**

*Table K-1: Total Phosphorus Annual Load Allocations by Reach*

*Table K-2: Annual Total Phosphorus Wasteload Allocations by Permitted Point Source*

*Table K-3: Annual Total Phosphorus Wasteload Allocations by MS<sub>4</sub>*

*Table K-4: Annual Total Phosphorus Percent Reduction by Reach and to Meet Total Local Water Quality vs. Downstream Requirements:*

# Reserve Capacity and MOS

## Reserve Capacity

- \* A set aside of the portion of the allocation to allow for future growth and new dischargers.
- \* Evaluated different options and selected an option that allows a flexible approach for growth.

## Margin of Safety

- \* Required by EPA; the MOS accounts for uncertainty in the modeling, monitoring, and allocation process.
- \* Can be implicit or explicit; we met with stakeholders and worked out an implicit MOS.



# TMDL Implementation



# TMDL Implementation

- \* Wis. Stat. s. 283.31(3)(d)3. requires DNR to include effluent limits in permits to meet TMDL wasteload allocations. Chapter NR 217 implements wasteload allocations for phosphorus in wastewater permits.
- \* Chapters NR 151 (NR 151.004 and NR 151.005) and NR 216 implement TMDL allocations for nonpoint and permitted stormwater sources.

# Wastewater Implementation Individual Permits

- \* Due to the uncertainty of TMDL approval timelines and the department's commitment to permit backlog reduction, prior to TMDL approval permits will be issued based on the requirements of NR 217 Wis. Admin. Code.
- \* After TMDL approval, inclusion of TMDL-based limits will take place at either the next permit issuance or as part of a permit modification depending on permit timing and other site-specific factors.
- \* Because the allocations are protective of both local and downstream water quality, the department intends to issue/modify permits with TMDL-based limits in lieu of NR 217.13 derived limits after TMDL approval.

# Wastewater Implementation Limit Calculation

- \* WLAs in the TMDL are expressed as long term averages.
- \* Permit limits must be consistent with TMDL, but not necessarily identical to WLAs.
- \* Permit limits based on WLAs are Water Quality-Based Limits (WQBELs).

# Expression of TMDL-based limits in WPDES Permits – Continuous Dischargers

- \* Limit expression dependent of stringency of limit
- \* Equivalent Effluent Concentration =  $WLA \div (365 \text{ days/yr} * \text{design flow (MGD)} * 8.34)$
- \* Only used as a guide for limit expression, not actual limit

Equivalent Effluent Concentration	Limit Expression
> 0.3 mg/L	Monthly Avg.
≤ 0.3 mg/L	6-Month Avg. and Monthly Avg. (3 x 6-Month Avg.)



# Calculating Permit Limits from WLAs

$$\text{Permit Limit (lbs/day)} = \text{Annual WLA} \div 365.25 \text{ days/year} \times \text{WLA Multiplier}$$

Where:

WLA Multiplier = multiplier based on the variability of the effluent data and monitoring frequency in the permit.

# WLA Multiplier Formula

$$WLA \text{ Multiplier} = e^{[z\sigma_n - 0.5\sigma_n^2]}$$

Where:  $z = 2.326$  for 99<sup>th</sup> percentile

$$\sigma_n^2 = \ln \left[ \frac{CV^2}{n} + 1 \right]$$

$n$  = number of samples collected during the limit averaging period

CV = coefficient of variation = standard deviation ÷ mean of representative discharge data on a mass basis

# Multiplier vs. Effluent Variability & Monitoring Frequency

Effluent CV = 0.6

Effluent Monitoring Frequency	6-Month Average Permit Limits	Monthly Average Permit Limits
Daily	1.11	1.28
5 Times per Week	1.13	1.35
3 Times per Week	1.17	1.45
Twice per Week	1.21	1.57
Weekly or Less	1.30	1.85

Effluent CV = 0.4

Effluent Monitoring Frequency	6-Month Average Permit Limits	Monthly Average Permit Limits
Daily	1.07	1.18
5 Times per Week	1.08	1.18
3 Times per Week	1.11	1.29
Twice per Week	1.14	1.36
Weekly or Less	1.20	1.53

# Permit Limit Derivation Steps

- \* Determine Wasteload Allocation from TMDL
- \* Calculate equivalent effluent concentration to determine limit form (monthly only or 6-month & monthly combo)
- \* Determine monitoring frequency in new permit
- \* Determine effluent variability (CV)
- \* Calculate multiplier

# Example Calculations: Facility A

WLA	Design Flow	TP Monitoring Frequency	CV
274 lbs/yr	0.25 MGD	3 times per week	0.4

Equivalent TP Concentration:

$$= 274 \text{ lbs/yr} \div (365.25 \text{ days/yr} * 0.25 \text{ MGD} * 8.34) = 0.36 \text{ mg/L}$$

Monthly Average Effluent Limit:

$$= 1.29 * 274 \text{ lbs/yr} \div 365.25 \text{ days/yr} = 0.968 \text{ lbs/day}$$

# Example Calculations : Facility B

WLA	Design Flow	TP Monitoring Frequency	CV
305 lbs/yr	0.50 MGD	5 times per week	0.6

Equivalent TP Concentration:  
 $= 305 \text{ lbs/yr} \div (365.25 \text{ days/yr} * 0.50 \text{ MGD} * 8.34) = 0.20 \text{ mg/L}$

6-Month Average Effluent Limit:  
 $= 1.13 * 305 \text{ lbs/yr} \div 365.25 \text{ days/yr} = 0.944 \text{ lbs/day}$

Monthly Average Effluent Limit:  
 $= 0.944 \text{ lbs/day} * 3 = 2.83 \text{ lbs/day}$

# Non-continuous Dischargers

- \* Discharge only on week days: Use continuous discharge approach
- \* Short-term discharges of less than 3 months: Use annual WLA as limit (lbs/year)
- \* Seasonal discharge of greater than 3 months: Case-by-case determination whether to use continuous discharge or annual WLA approach

# Wastewater Implementation Compliance Strategies

- \* TMDL-based limits are water quality-based limits, therefore the same suite of compliance approaches apply pre- and post TMDL
  - \* Traditional alternatives:
    - \* Treatment optimization, upgrade or regionalization
  - \* Innovative alternatives:
    - \* Water quality trading
  - \* Variance alternatives:
    - \* Individual or multi-discharger variance



# Wastewater Implementation: Timing

- \* TMDL-based limits cannot be implemented in WPDES permits until TMDL is approved by U.S. EPA.
- \* Permits will continue to be issued prior to TMDL approval based on the requirements of NR 217 Wis. Admin. Code.
- \* After TMDL approval, permits will be modified where appropriate to include TMDL-based limits.
- \* Reissued permits will include TMDL-based limits and compliance schedules where appropriate

# Wastewater Implementation: Planning Considerations

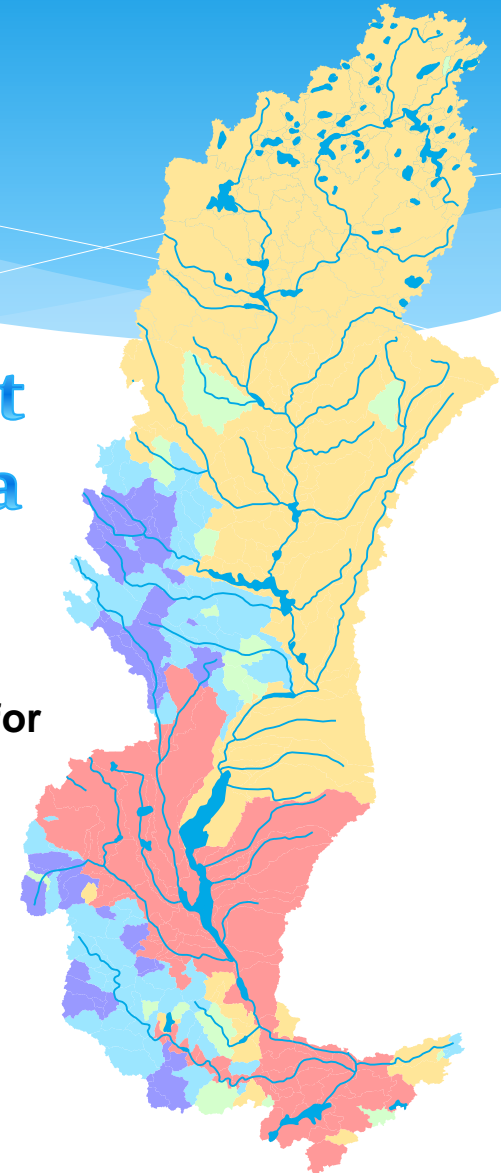
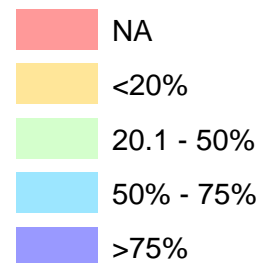
- \* Permittees with existing compliance schedules to meet phosphorus limits under NR 217.13z:
  - \* TMDL provides some level of “relief” to 87 facilities.
  - \* Evaluate and carefully consider the impacts of the TMDL on Compliance Alternatives Plan.
    - \* Impacts on treatment technology selection and associated economics.
    - \* Impacts on water quality trading/adaptive management alternative implementation costs.
  - \* Keep in contact with your local DNR representative during plan development
- \* Permittees facing phosphorus WQBELs for the first time:
  - \* New permit will contain compliance schedules as appropriate to allow for Compliance Alternatives Plan development.

# Wastewater Implementation: Water Quality Trading

- \* TMDL appendices provide information on reductions needed to meet local water vs. downstream quality.
- \* In many locations, reductions are largely driven by downstream water quality  $\Rightarrow$  flexibility in where trading partners are located.

## Current Criteria

### % Reduction for Local Reach



# Wastewater Implementation: Water Quality Trading

- \* Point-to-point trading
  - \* Credit threshold: TMDL-based limit
  - \* Innovated implementation opportunities
    - \* watershed permitting
    - \* combined wasteload allocations
- \* Point-to-nonpoint trading
  - \* Credit threshold for long-term credits: TMDL Load Allocation
  - \* 5-yr Interim Credit: Reduction from Existing Pollutant Load

# Wastewater Implementation General Permits

- \* TMDL contains aggregate WLAs for general permits
- \* General permits will be evaluated to determine if additional requirements are necessary to ensure that discharges remain consistent with TMDL goals

*Could include issuing individual WPDES permits to facilities that currently hold general permits*

# Nonpoint Source Implementation

- \* **TMDLs do not create new rules or regulatory requirements for nonpoint sources**
- \* **TMDLs do not provide additional staff funding or other resources for implementation**
- \* **TMDLs rely upon existing rules, programs and staff resources for implementation**
  - \* NR 151 Nonpoint Performance Standards - compliance
  - \* DNR and DATCP Grants, Cost sharing, and County programs – LW plans, FPP
  - \* Watershed Based plans, Farmer Led Councils
- \* **TMDL nonpoint reductions are not regulatory, unless promulgated through NR 151.004**
  - \* WDNR must determine, via monitoring or modeling, that substantial implementation of existing rules will not meet water quality standards

# Nonpoint Source Implementation

- \* Nonpoint sources have mass load allocations (LAs) by sub-basin to meet water quality standards for both local waters and downstream reservoir
- \* Nonpoint sources first need to meet existing agricultural performance standards and prohibitions – may require cost sharing; grants
- \* DNR recognizes there may be significant challenges to achieve nonpoint reductions within some sub-basins
- \* It will take time to develop plans and coordinate efforts to implement nonpoint reductions

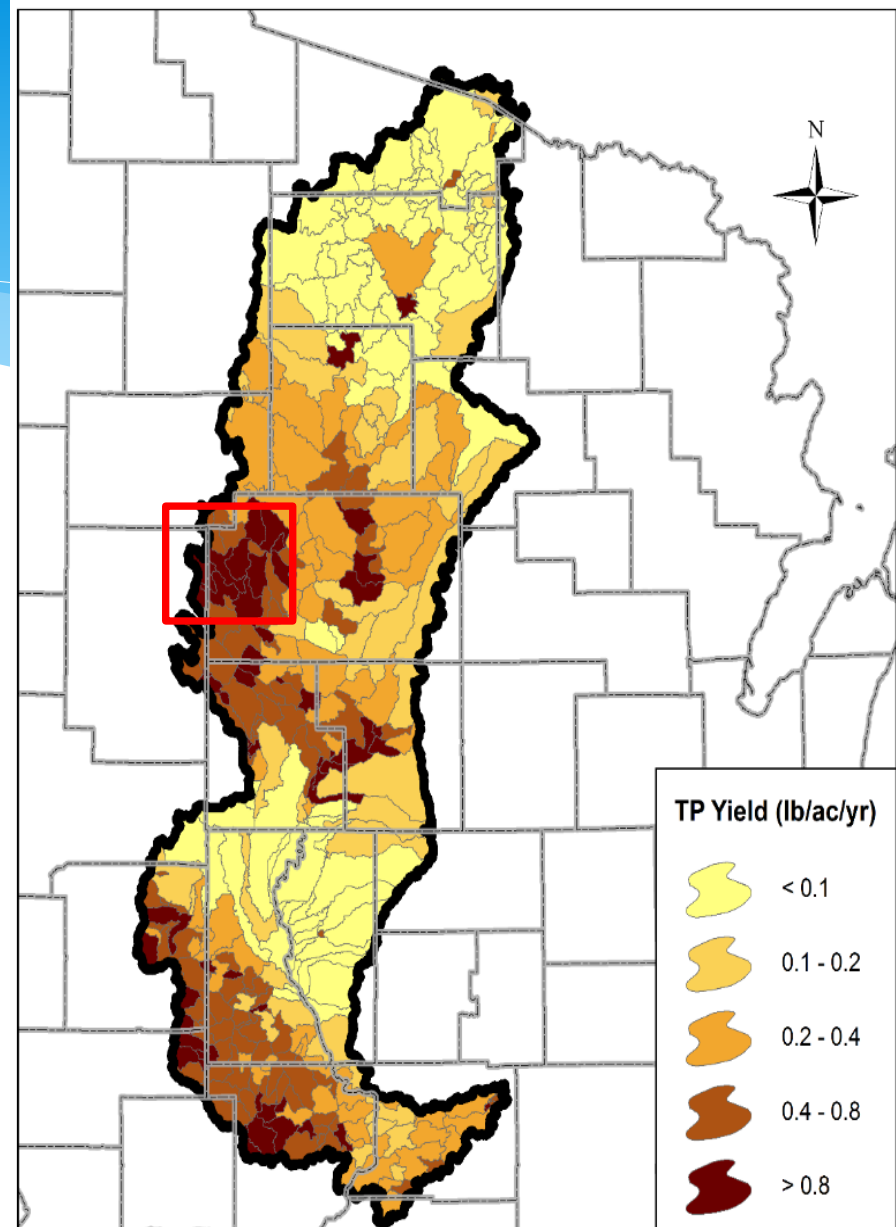
# Nonpoint Source Implementation

- \* **TMDL reductions for agricultural sources range between 56% to 93% from the current baseline agricultural loads**
- \* **Reducing agricultural loads will require:**
  - \* **Patience and long term outlook (make incremental progress over time)**
  - \* **Focusing existing resources within selected sub-basins**
  - \* **Increased adoption/compliance with existing standards and programs**
  - \* **Coordination (10 years or longer) between agricultural producers and county, state and local stakeholders**
  - \* **Setting interim reduction goals with realistic times frames**  
(e.g., 20% reduction in first 10 years; overall TMDL reduction goal is 80%)
  - \* **Additional or new practices and tracking those efforts by sub-basin**
- \* **Practices:** Cover crops, Residue management & Reduced tillage, nutrient management, manure management systems, grassed waterways, filter strips and riparian buffers



# Nonpoint Source Implementation

- \* TMDL can help prioritize existing resources and programs within a county and areas within a watershed
- \* Red Box contains areas within county and sub-basins with higher TP loads



# Nonpoint Source Implementation

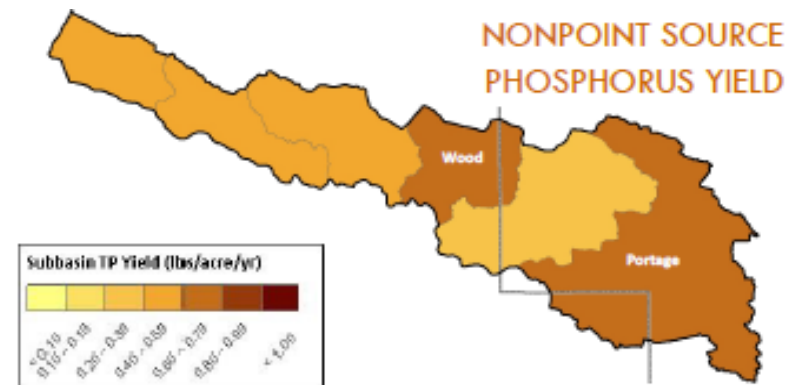
## Mill Creek Watershed

### IMPAIRED WATERS

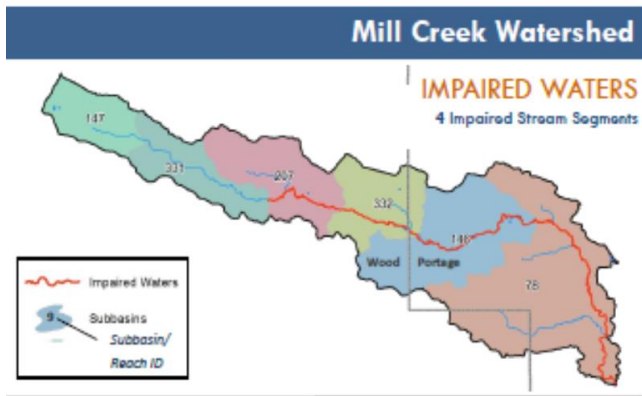
4 Impaired Stream Segments



### NONPOINT SOURCE PHOSPHORUS YIELD



# Nonpoint Source Implementation



ANNUAL TP REDUCTION TO MEET LOCAL WQ VS. DOWNSTREAM								
Reach	Local WQ	Down-stream	Reservoir	Total	Local (lbs/yr)	Downstream (lbs/yr)	Total (lbs/yr)	HUC 12
78	64%	16%	Petenwell	80%	11,452	2,848	14,299	203+204
146	28%	52%	Petenwell	80%	1,530	2,847	4,377	202
332	67%	13%	Petenwell	80%	4,550	883	5,434	202
207	54%	26%	Petenwell	80%	2,993	1,452	4,446	201+202
331	57%	23%	Petenwell	80%	2,633	1,048	3,681	201
147	84%	0%	-	84%	16,568	0	16,568	201

# Nonpoint Source Implementation

- \* **Existing Nonpoint efforts that are helping implement the TMDL:**
  - \* **County LW plans – annual updates and 10 year revisions**
    - \* reflect TMDL findings and focus resources in specific areas
  - \* **Watershed Based Plans or Efforts**
    - \* **Fenwood Creek – Marathon County – 9 Element Plan and TRM grant**
    - \* **Mill Creek – Wood and Portage County - development**
    - \* **14 mile Creek – Adams, Wood Portage and Waushara – development**
    - \* **Baraboo River RCPP - Sauk County**
      - \* focus program within three sub-basins with high TP and Sediment Loads
  - \* **Farm Producer Led Councils – Mill Creek and Farmers for Tomorrow**

# Nonpoint Source Implementation

## Future TMDL implementation effort from WDNR - 2018

- \* Translate TMDL model variables within SnapPlus
  - \* Define baseline P loads and reduction target for each TMDL sub-basin; express as P lbs/acre/year
  - \* Allow comparison of current and future field for farm management to TMDL sub-basin reduction goal
  - \* Help prioritize fields for practices and measure progress on meeting TMDL reductions – by farm or individual fields
  - \* Assist with WQ Trading proposals – help determine interim and long term credits



- ❖ Cost Share Programs
- ❖ Lake Planning and Protection Grants
- ❖ River Grants
- ❖ DATCP Soil and Water Programs
- ❖ Federal Grant Programs
- ❖ Alternative Point Source Compliance Options such as Water Quality Trading

# Financing Water Infrastructure Projects

Clean Water Fund Program (CWFP)  
DNR Environmental Loans Program

# The Basics of the Clean Water Fund Program

- \* Provides
  - \* Subsidized *loans to municipalities* for water infrastructure projects
  - \* A portion of a loan may be awarded as “principal forgiveness” (PF) – acts like grant funding – no repayment
  - \* PF is based on formula including population/Median Household Income (MHI)/unemployment and awarded in priority score order
  - \* Market rate is set on a quarterly basis (current rate is 3.2%)
  - \* 20 year loan terms (up to 30 years may be allowed in the future for certain projects)





## CWFP Interest rates:

	% OF MARKET RATE	Current INTEREST RATE
For the portion of projects for <b>receiving and storing septage</b> , and capacity for treating septage; as well as for mercury remediation at wastewater treatment facilities	0%	<b>0%</b>
For projects of <b>extremely disadvantaged municipalities</b> meeting the following financial need criteria: < 1,000 population and $\leq 65\%$ of WI MHI*	0%	<b>0%</b>
For eligible projects of <b>disadvantaged municipalities</b> meeting the following financial need criteria: < 10,000 population; and $\leq 80\%$ of WI MHI	33%	<b>1.056%</b>
For <b>all other eligible projects</b> (i.e. municipalities not meeting the financial need criteria)	55%	<b>1.760%</b>
<b>MARKET RATE</b> (effective 01/01/18 – 03/31/18)	100%	<b>3.200%</b>

\*MHI = Median Household Income

# The CWF Basics



## CWFP Program requirements

- \* Pre-application “Intent to Apply” deadline
  - \* October 31<sup>st</sup> for next state fiscal year’s funding
- \* Application submittal requirements
  - \* Deadline if seeking Principal Forgiveness
  - \* Have necessary approvals (facility plan/approvable plans and specs/engineering reports, etc.)
- \* Follow federal requirements (Davis-Bacon, DBE, Use of American Iron and Steel, Fiscal Sustainability Plan etc.)
- \* Submit financial information

# Other Funding Sources

- \* Four agencies provide funding for various water infrastructure projects
  - \* Comm. Dev. Block Grant (CDBG)
  - \* USDA Rural Development (grant and loan)
  - \* DNR (loan and principal forgiveness)
  - \* Bd of Comm. of Public Lands (BCPL) - state trust fund loan
- \* Early communication maximizes opportunities for municipalities and agencies to work together to best package “grant” funds, timing, etc.

**BUNDLE  
AND  
SAVE**

# For More Information!

- \* Matt Marcum - Clean Water Fund Program Coordinator

[matthewr.marcum@wisconsin.gov](mailto:matthewr.marcum@wisconsin.gov)

(608)264-8986

- \* Subscribe to the E-Bulletin newsletter for CWFPP news

Kay Christensen – outreach coordinator

[Kay.Christensen@wisconsin.gov](mailto:Kay.Christensen@wisconsin.gov)

- \* Check out our web site

<http://dnr.wi.gov/Aid/EIF.html>



Report Chapter 8

# TMDL Development Public Participation, Outreach, and Comments

# Outreach and Stakeholder Participation

Met with agricultural groups and permit holders providing review opportunities and comments of the TMDL development.

Facilitated or participated in numerous workshops looking at both development and implementation issues associated with the TMDL.



**govDELIVERY** 

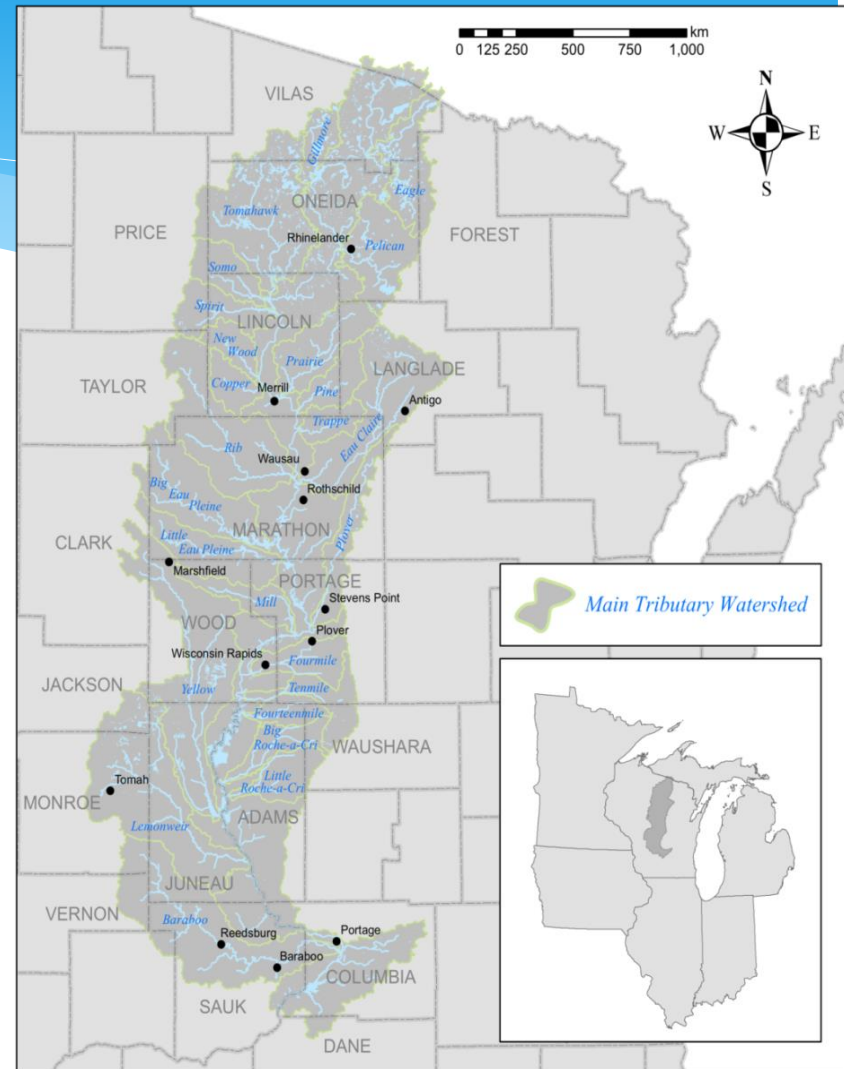
**1,900+**  
**subscribers**

# Informational Meetings

- \* March 5<sup>th</sup> Stakeholder Meeting in Rhinelander at 1:00 to 4:00 at Quality Inn
- \* March 6<sup>th</sup> Stakeholder Meetings in Stevens Point at the Courthouse Annex Building at 10:00 to 12:00 and 4:00 to 6:00
- \* March 14<sup>th</sup> Stakeholder Meetings in Portage at the Portage Public Library at 10:00 to 12:00 and 4:00 to 6:00

**Comments Accepted Through April 23rd, 2018**

- \* Official 30-Day Public Informational Hearing Process
- \* Finalize TMDL and Send for EPA Approval



# More Information and Access Report

## Wisconsin River Total Maximum Daily Load (TMDL)

A framework for water quality improvement



<http://dnr.wi.gov/topic/tmdls/>

The DNR, together with many partners throughout the basin, are working to improve water quality of the Wisconsin River, its reservoirs and tributaries. The Total Maximum Daily Load (TMDL) study and implementation plan will provide a strategic framework and prioritize resources for water quality improvement in the Wisconsin River Basin.

### Draft report downloads

The following files will be discussed during the Feb. 21, 2018, webinar.

- ▼ [Draft Report](#)
- ▼ [GIS Data](#)
- ▼ [Appendices](#)



# Questions and Comments

Comments accepted through April 23, 2018



<http://dnr.wi.gov/topic/tmdls/>

**[DNRWisconsinRiverTMDL@wisconsin.gov](mailto:DNRWisconsinRiverTMDL@wisconsin.gov)**

For those who are unable to attend the sessions, comments on the initial draft TMDL plan, which will be released at the webinar, may be submitted to [DNRWisconsinRiverTMDL@wisconsin.gov](mailto:DNRWisconsinRiverTMDL@wisconsin.gov) or by mail to:

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