



Total Maximum Daily Load - TMDL

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Impaired Waters List

Long-term Water Sampling and Fish Surveys are used as criteria for determining if a water body is meeting its designated use or if it is exceeding pollutant criteria.

Waters that do not meet their designated uses or do not meet water quality criteria are considered impaired and are added to a DNR and EPA list known as the 303d list.

Examples of Designated Uses are:

- ▶ **Fish & Aquatic Life**
- ▶ **Public Health**
- ▶ **Recreation**

Examples of Water Quality Criteria

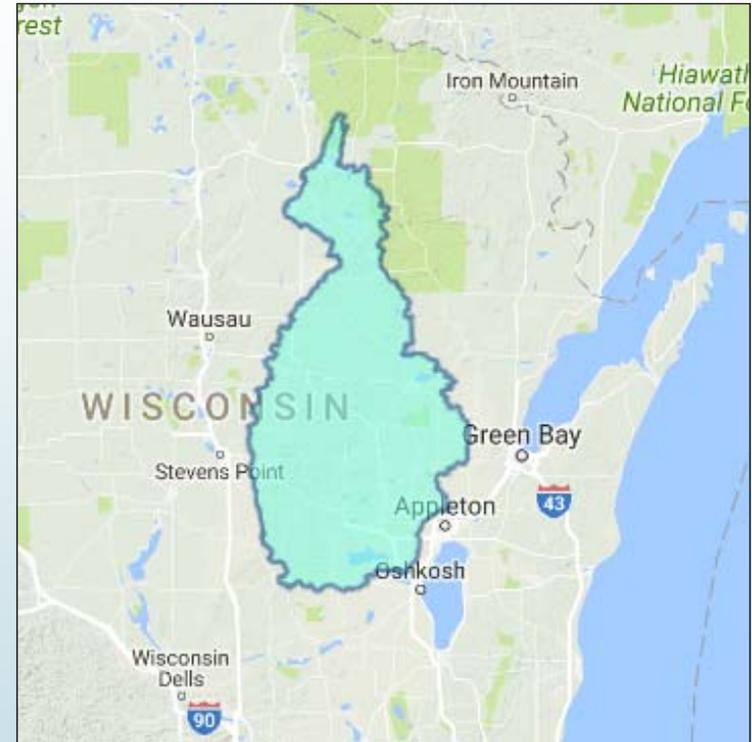
- ▶ **Dissolved Oxygen(DO), pH, bacteria, toxic substances, phosphorus, others**

Fox River Basin

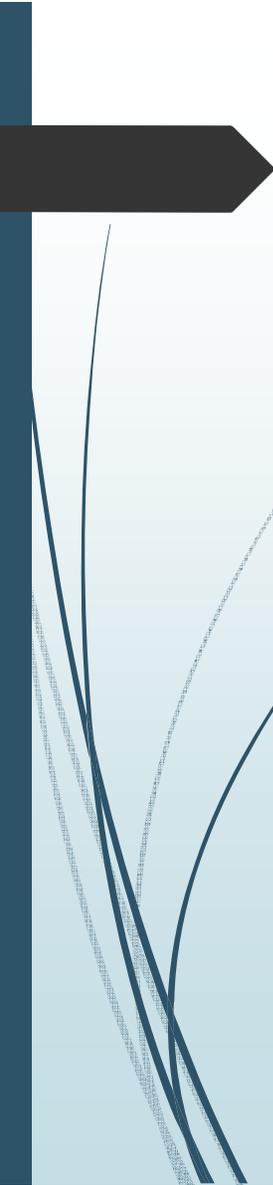


2090 Square Miles

Wolf River Basin



3690 Square Miles



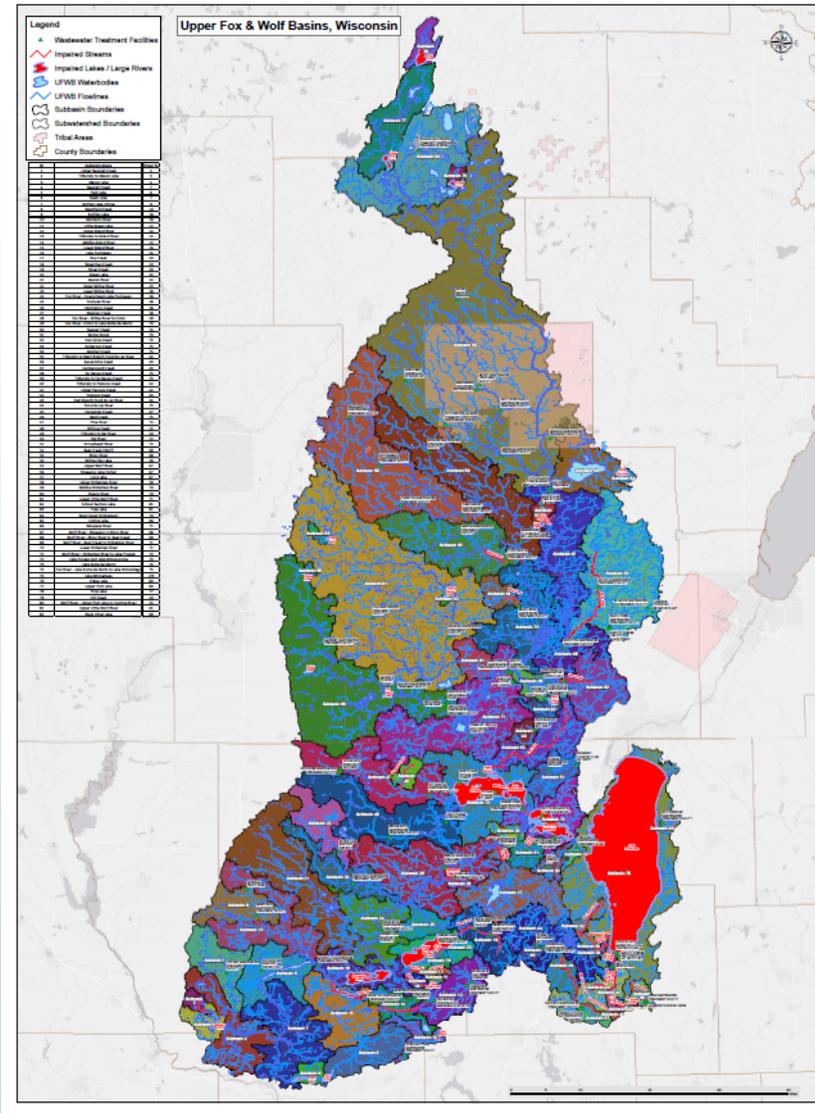
TMDL Water Quality Study

- DNR works with EPA to complete a study to assess all the sources of pollutant loading.
- For Lake Winnebago, DNR & EPA worked with United State Geological Survey (USGS) and hired a private company, Cadmus Group, to compile data for the TMDL. USGS was responsible for the water quality monitoring data. Because of the basin size Cadmus Group completed modeling of the basins to determine loadings from runoff.
- Point source permittees already submit information for permit reporting.
- In late 2014, County LWCD's completed survey's and provided information about cropping and farming practices in the basin to determine loads from runoff.
- Cadmus Group modeled runoff for all subwatersheds through out the basin based on land use and cropping information.

Upper Fox Wolf Watershed

5,780 square miles

35 watersheds



Maximum Daily Load Allocations

- ▶ TMDL Study determines the amount of a pollutant that can be received and still meet its designated use.

Load Allocation

Non-Point Runoff:

- Cropland
- Rural residential
- Internal Lake Loading

+

Waste Load Allocation

Point Runoff Runoff:

- WWTP
- Industry
- WPDES
- MS4

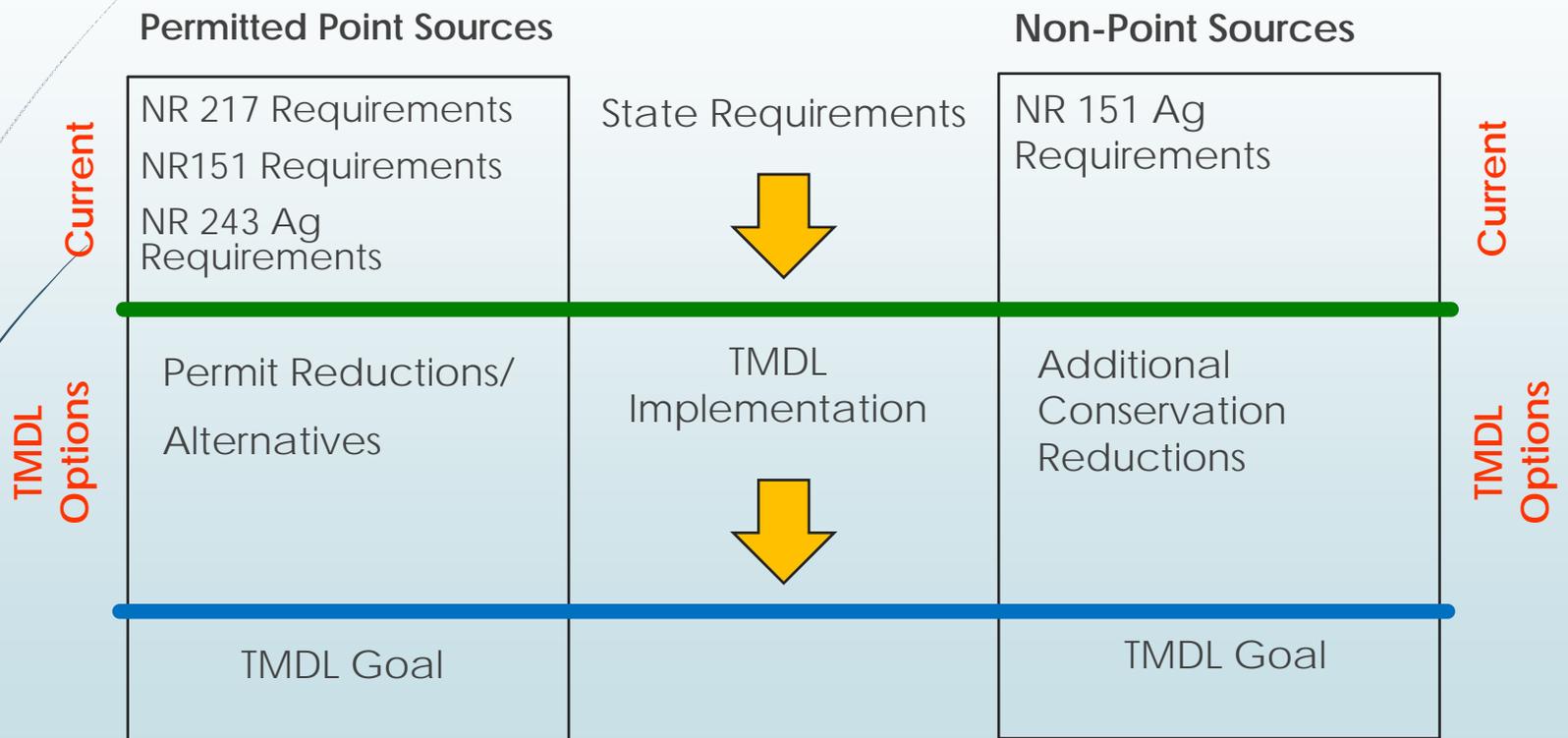
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Margin of Safety

+ or - Factor to ensure TMDL limit is met

= Total Maximum Daily Load

Load Allocations or "Load Budget"





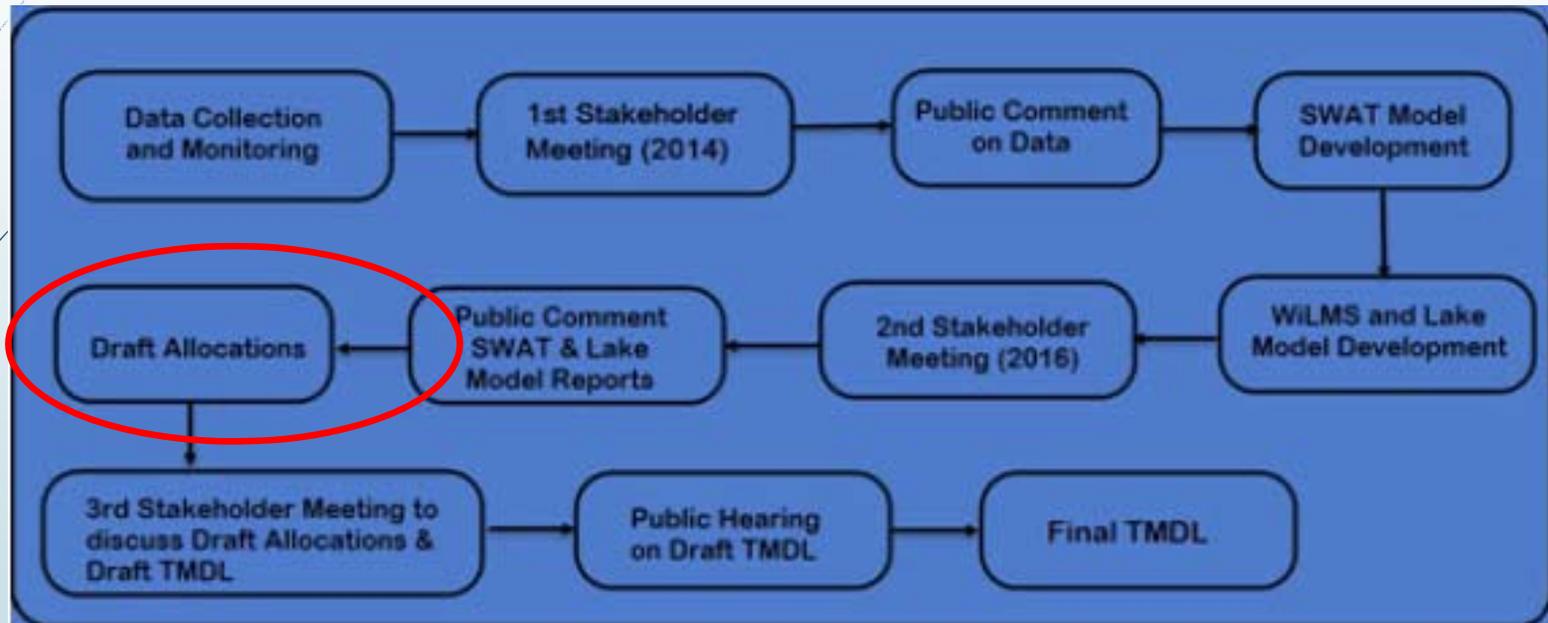
Implementation Strategies

Continued implementation for Ag to meet NR151 State requirements and through watershed plan development called 9 Key Element Plans.

Further reductions for permittees through:

- Facility Improvements
- Partnering with Ag to do conservation practices through Water Quality Trading (credits)
- Partnering with Ag to do conservation practices through Adaptive Management (monitoring)
- Or a combination of strategies

TMDL Report Timeline



Partnership Is Key for Long-term Success



- ▶ We're all in this together
- ▶ Lots of stakeholders to engage
- ▶ Landowners, Producers, Businesses, Municipalities, Organizations, Agencies.
- ▶ Partnership and planning can help focus efforts and create opportunities for water quality improvements.