

# Fox Illinois River Basin TMDL

Project Overview | February 2023

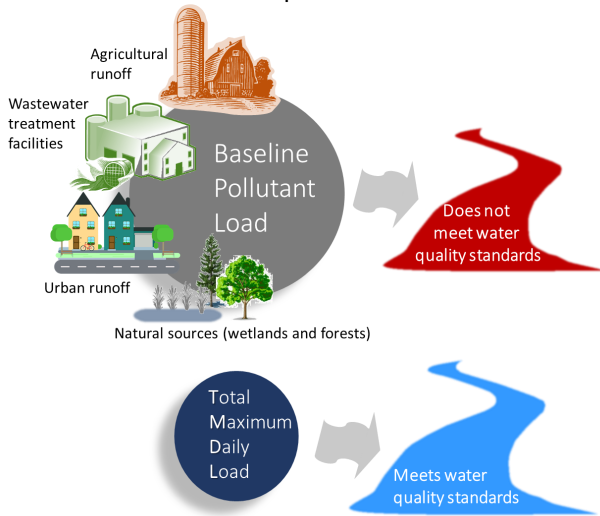


## How did we get a Total Maximum Daily Load (TMDL) project in The Fox Illinois River Basin?

In 2015 the Wisconsin Department of Natural Resources undertook a prioritization process to identify watersheds that are most important in addressing state water quality goals. During this process the Fox Illinois River Basin in southeastern Wisconsin was identified as a watershed that could benefit from a TMDL. Wisconsin has developed TMDLs in other parts of the state, but a TMDL for the Fox Illinois River basins has not yet been developed. The TMDL for the Fox Illinois River Basin will be for total phosphorus (TP) and total suspended solids (TSS).

### What is a TMDL?

A TMDL is the amount of a pollutant a water can receive and still meet water quality standards. A TMDL study evaluates the existing pollutant load entering a water body and compares it to the pollutant load the water body can receive. Pollutant reduction targets are established to reduce the amount of existing pollutant load to an acceptable level.



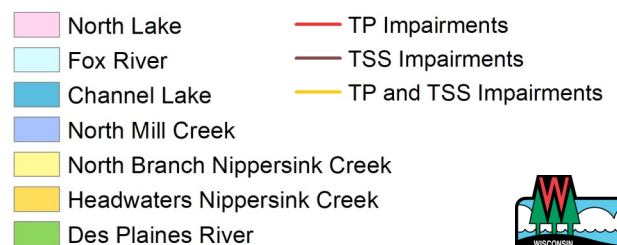
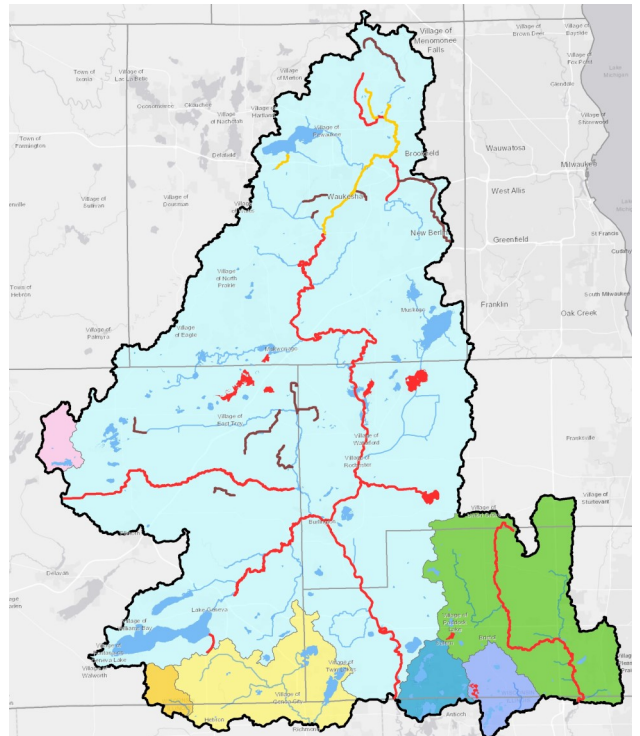
### Why Develop the Fox Illinois River Basin TMDL for TP and TSS?

Waterbodies in the Fox Illinois River Basin are currently listed on Wisconsin's 303(d) Impaired Rivers and Streams list. The primary pollutants of concern in the basin are total phosphorus and total suspended solids. The TMDL is focused on reducing the point source and non-point source contributions of phosphorus and sediment into waterbodies. Ultimately, the TMDL study and a subsequent implementation plan will provide a framework to restore water quality in waterbodies with high phosphorus and sediment concentrations.

### What is Phosphorus?

Phosphorus is a nutrient that is needed for animal and plant growth. Excess phosphorus in water can fuel the growth of algae and large aquatic plants, which cause negative effects on the ecosystem and ability for human use and recreation.

### 2022 TP & TSS Impairments



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## How is a TMDL developed?

### 1. Monitor streams and conceptualize watersheds

Stream flow and water chemistry data are collected to calibrate the watershed model. Additionally, the watershed is conceptualized by collecting data about land cover, land management, soil type, and climate.



Stream Monitoring

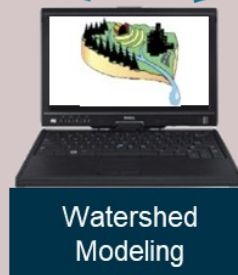


Watershed Conceptualization

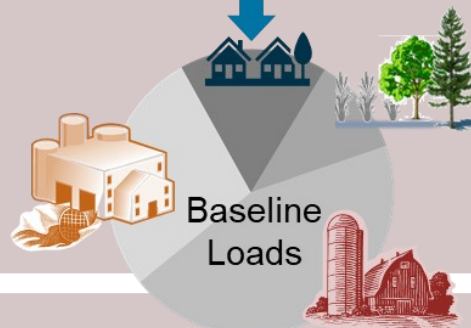
### 2. Calculate baseline loads

Watershed modeling is used to determine how much phosphorus and sediment is coming from each pollutant source. Pollutant sources include:

- Nonpoint sources: agricultural runoff, non-permitted urban stormwater runoff, and natural runoff from forests, wetlands, and grasslands
- Point sources: industrial wastewater outfalls, municipal wastewater outfalls, and permitted urban stormwater outfalls



Watershed Modeling



Baseline Loads

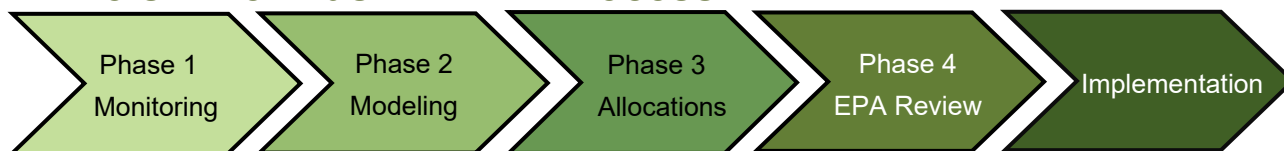
### 3. Determine the TMDL and allocations

Watershed modeling results along with phosphorus and sediment criteria are used to determine the TMDL of subwatersheds. Once the TMDL is established, it is allocated proportionally among the different pollutant sources to determine the amount of pollutant reduction needed to reach TMDL goals.



Allocations

## Fox Illinois River Basin TMDL Process



For more information on the Fox Illinois River Basin TMDL, contact:

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Or visit: <https://dnr.wi.gov/topic/TMDLs/FOXIL>