



**Minnesota  
Pollution  
Control  
Agency**

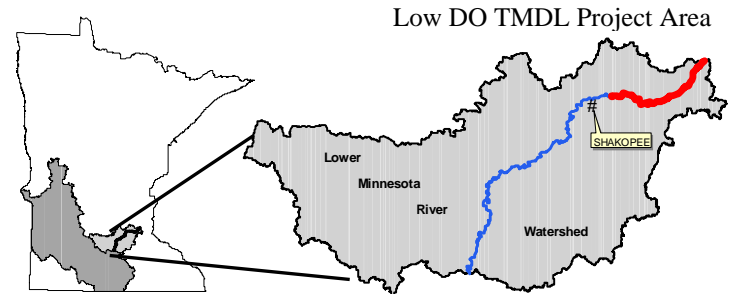
Municipal Division  
Municipal  
Wastewater Section

# Minnesota River Basin General NPDES Phosphorus Phase I Permit

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**T**his factsheet provides an overview of the General National Pollutant Discharge Elimination System (NPDES) permit regulating the discharge of phosphorus from wastewater treatment facilities to the Minnesota River Basin.

## Lower Minnesota River Watershed



The General Phosphorus Permit was developed with input and assistance from various stakeholders throughout the basin. The MPCA met with representatives from the larger (over 1,800 pounds/year phosphorus discharge) wastewater treatment facilities frequently over a six-month period. In addition, the agency held informational meetings for the smaller dischargers in the basin. Information, ideas, suggestions and discussion from these meetings helped form the basis for the Minnesota River Basin General NPDES Phosphorus Phase I Permit.

The permit limits the amount of phosphorus discharged to the Minnesota River and its tributaries from the outlet of the Lac Qui Parle reservoir to the city of Shakopee. The area contains 156 wastewater dischargers as listed in the chart below.

### Background: TMDL Study

The federal Clean Water Act requires states to identify and limit pollutants in exceedance of water quality standards. The limits are called Total Maximum Daily

Loads (TMDL)s. TMDLs are developed through a scientific process that identifies sources of a pollutant and then determines the source reductions needed to restore water quality.

### Dissolved Oxygen at Low Flows

A TMDL project addressing the lack of dissolved oxygen during low flow conditions in the Lower Minnesota River lead to the development of the General Phosphorus Permit. Low flows are defined as the lowest consecutive seven-day stream flow likely to occur in a ten-year period. During low flows, excess phosphorus generates algal blooms. Eventually, the algae die off. Bacterial decomposition of the algae requires oxygen. This process creates a shortage of the dissolved oxygen needed to sustain aquatic life.

The U.S. Environmental Protection Agency (EPA) approved the Minnesota River Dissolved Oxygen TMDL Report in 2004. Although all sources of phosphorus are identified in the report and are required to take various actions, the Minnesota River Basin General NPDES Phosphorus Phase I Permit addresses only phosphorus

### MPCA Area Offices:

**Rochester area:**  
507/285-7343

**Mankato area:**  
507/389-5977

**Marshall area:**  
507/537-7146

**Willmar area:**  
320/214-3786

**Detroit Lakes area:**  
218/847-1519

**Brainerd area:**  
218/828-2492

**Duluth area:**  
218/723-4660

**Metro area:**  
651/296-6300

**Toll-Free Number:**  
800/657-3864

reduction and trading activities required by wastewater dischargers.

### Phosphorus Reduction Timeline

Phosphorus reductions for wastewater treatment facilities will be implemented over a ten-year period. The current General Phosphorus Permit represents Phase I of the TMDL implementation and spans the first five years. The permit targets an aggregate 35% reduction in phosphorus discharged to the basin. Operational changes and phosphorus removal techniques take time to implement; therefore, the 35% reduction will occur in stages over the life of the permit (2005-2010).

Phase II of implementation will begin in 2010 when the current General Phosphorus Permit expires. Specific requirements of Phase II depend on the success of Phase I, the results of other TMDL studies affecting the Minnesota River and potential changes in the scientific understanding of the phosphorus transport within the basin. The goal for the ten-year implementation is to meet the 1 mg/L phosphorus limit on all facilities discharging more than 1,800 pounds of phosphorus per year and to guarantee that there is no net increase in the amount of phosphorus discharged to the basin.

### Permit Coverage

All wastewater dischargers downstream of the outlet of Lac Qui Parle reservoir and upstream of Shakopee are listed in the General Phosphorus Permit. The permit covers four types of facilities in this geographic area.

1. Existing continuously discharging facilities;
2. Existing controlled discharge stabilization ponds;
3. Unsewered/Undersewered communities; and
4. New continuously discharging or pond facilities.

The following dischargers must apply for coverage under the General Phosphorus Permit.

1. Existing continuously discharging facilities with a design capacity to discharge more than 1,800 pounds of phosphorus per year;
2. New or expanding facilities that will need to trade to offset their added contribution of phosphorus discharged to the Minnesota River; and
3. Unsewered/undersewered communities upgrading to secondary treatment that will need to trade to offset any increased growth related phosphorus contribution to the Minnesota River.

There is no permit application fee or special annual fee for the Minnesota River Basin General NPDES Phosphorus Phase I Permit.

## Minnesota River Basin Wastewater Treatment Facility Categories

- 40 – Continuous discharge over 1,800 lbs. P/year
- 21 – Continuous discharge under 1,800 lbs. P/year
- 71 – Controlled discharge ponds
- 13 – Unsewered/undersewered communities
- 11 – Continuous discharge Jordan to Shakopee

**156 – Total currently listed in permit**

### Permit Requirements

All existing facilities have phosphorus-monitoring requirements under the General Phosphorus Permit. The permit does not relax any requirements of existing general or individual NPDES/SDS permits. If requirements differ from one permit to the next, the more stringent requirements must be met. The General Phosphorus Permit prohibits any net increase in the amount of phosphorus entering the Minnesota River.

### Facilities with Design Capacity for more than 1,800 Pounds of Phosphorus Discharge per Year

Facilities in this category (currently, about 40 in the basin) received a phosphorus limit based on reductions from their baseline discharge loadings in the TMDL report. Baselines were established for most facilities by using their actual May-September discharge.

### All Other Wastewater Sources

Other wastewater sources include smaller continuous discharge facilities, stabilization ponds and unsewered/undersewered communities. Phosphorus related activities for these sources will be implemented through either individual or general NPDES permits. NPDES permits for these facilities are scheduled for reissuance toward the end of 2005. These sources did not receive phosphorus limits through the General Phosphorus Permit because they were not assigned a wasteload allocation in the TMDL report. However, the General Phosphorus Permit does require that they conduct monitoring and develop Phosphorus Management Plan.

### For More Information

Minnesota River Basin General NPDES Phosphorus Phase I Permit contact:  
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