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Pre-TMDL Phosphorus Trading Permitting Strategy

Introduction to Impaired Waters and TMDLs

The Clean Water Act establishes federal standards for water bodies based on designated uses such as swimming, fishing and wildlife habitat. Waters that do not meet the quality standards for their designated uses are "impaired."

The Clean Water Act also requires states to develop detailed clean-up plans for impaired waters. The clean-up plan is a Total Maximum Daily Load (TMDL). A TMDL identifies all sources of a particular pollutant and determines the amount of pollutant reduction needed by each source to bring the water back into compliance. A TMDL requires detailed study of the water body and often includes several years of data collection and analysis.

Federal regulations are in place to make sure that waters are not further impaired while a TMDL is developed and implemented. These regulations prohibit discharge that will cause or contribute to an existing impairment.

For more information, visit the following links:

- [U.S. Environmental Protection Agency, Clean Water Act Home Page](#) 
- [Minnesota's Impaired Waters and Total Maximum Daily Loads \(TMDL\) Home Page](#)

Nutrient-Impaired Waters

Nutrient-impaired waters exist in every corner of the state. Nutrients enter surface waters from many sources including run-off from agricultural lands and urban stormwater. Discharges from wastewater treatment facilities also contain nutrients. Through the water quality permitting process, the MPCA makes sure

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that new or expanding wastewater treatment facilities do not make worse an existing impairment while a TMDL is in development.

For example, Lake Pepin is impaired for excess nutrients, including phosphorus. Lake Pepin's watershed covers approximately half the land area of the state of Minnesota and a TMDL is currently in development. The expected TMDL completion date is in 2009 with development of an implementation plan to follow. Proposals for a new or expanded wastewater discharge containing phosphorus in Lake Pepin's watershed must consider the existing impairment and the resulting legal restrictions.

For more information on the Lake Pepin TMDL project, visit the following link:

- [Lake Pepin TMDL](#)

Pre-TMDL Phosphorus Trading

To be protective of the environment, fulfill the requirements of the Clean Water Act and meet the needs of communities, the MPCA developed Pre-TMDL Phosphorus Trading (PTPT). PTPT allows new and expanding wastewater treatment facilities to receive a discharge permit prior to completion of an applicable phosphorus-related TMDL. Through PTPT, a new or expanding facility may increase its phosphorus discharge by purchasing a phosphorus reduction from another source. The MPCA documents the transfer of nutrient load, or trade, through the NPDES permitting process.

For more information on NPDES permitting in Minnesota, see the factsheet linked below.

-  [NPDES/SDS Permits](#)

Based on the permitting strategy approved by the MPCA Citizen's Board on June 24, 2008, the MPCA will evaluate proposed pre-TMDL phosphorus trades based on the following:

NOTE: Only facilities with effluent phosphorus limits in their existing NPDES permit may sell. A list of applicable facilities, within the Lake Pepin Watershed, is available below. Permittees willing to accept a phosphorus limit can choose to be sellers.

-  [Lake Pepin Watershed: Permitted Facilities with Phosphorus Limits](#)

Water Quality Standards for Lakes and Reservoirs

New and expanding wastewater treatment facilities with phosphorus effluent concentrations less than the eutrophication standards (water quality standards) for lakes and reservoirs listed in Minn. R. 7050.0222 will not need to participate in PTPT.

- View [Water Quality Standards](#)

Facilities that have the potential for their effluent phosphorus concentration to be below the phosphorus lakes and reservoir standards, such as noncontact cooling water with no chemical additives and facilities where source water is primarily ground water (i.e., ground-water pumpouts and mine dewatering), will not be required to participate in Pre-TMDL Phosphorus Trading. New and expanding facilities that are not able to reduce phosphorus in the discharge to below the phosphorus lakes and reservoirs standard will be allowed to participate in PTPT and trade phosphorus loading to assure no net increase in the allowable mass of phosphorus discharged upstream of the nutrient impaired water. This includes WWTFs that have been determined to be *de minimus* (discharge less than 1800 pounds per year).

Trade Ratios and Trade Boundaries

Both parties' effluent discharge must be upstream of the applicable impaired water body. The MPCA will not approve trades where a nutrient impaired water is located between an upstream buyer and a downstream seller. The following options give permittees direction in determining trading partners.

- **Option 1:** Buyer and seller are both in the same major watershed
- **Option 2:** Buyer and seller are in different major watersheds, but in the same basin and the seller is closer, in river miles, to the impaired water than the buyer.
Both of the above options would result in a trade ratio of 1.2 to 1 for new facilities and 1.1 to 1 for expanding facilities.
- **Option 3:** Trading is between different major watersheds in the same basin and the buyer is closer, in river miles, to the impaired water than the seller. Option 3 would result in a trade ratio of 1.4 to 1.

If trading partners believe they have a viable option that is protective of downstream waters but differs from those listed above, the MPCA will review proposals on a case-by-case basis. The MPCA will also consider trades that involve pollutant load reductions made by non-point sources (agricultural operations, stormwater discharges, and other non-point sources), but these situations are not addressed by this PTPT proposal and would require additional review.

Maps of Minnesota's major watersheds and 8-Digit HUC Numbers are available at the following links:

-  [Basins and Major Watersheds in Minnesota](#)
-  [Basins and Major Watershed 8-Digit HUC Numbers in Minnesota](#)
-  [Basins, Major Watersheds and Counties in Minnesota](#)

NPDES Permit Notification

The phosphorus trade is implemented through each wastewater treatment facility's individual NPDES permit. The buyer's phosphorus mass limit will be

adjusted upwards and the seller's phosphorus mass limit will be adjusted downwards in proportion to the extent of the trade. The NPDES permit issued to the buyer, or new or expanding facility, will be subject to public notification. The trade is not effective until it is reflected in the NPDES permit. Adjusted mass limits apply to both the buyer's and seller's discharge, in addition to any other phosphorus limits that may be applicable to the wastewater treatment facility, for example, a concentration limit. Once the period of the trade ends, each facility's phosphorus permit limit reverts to its original value. Once the applicable TMDL implementation plan is complete, each facility will be required to comply with the TMDL waste load allocation. Post-TMDL pollutant trading may still be a viable option for a facility to meet its regulatory obligations, but will occur within the TMDL framework.

Pre-TMDL Trading Development

The MPCA's initial attempts at Pre-TMDL Trading met mixed reactions and reached the docket of the Minnesota Supreme Court in 2006. In a ruling released in May 2007, the court agreed with the MPCA's interpretation of the Clean Water Act and upheld a wastewater treatment facility permit issued to the cities of Annandale and Maple Lake. The court acknowledged that the MPCA made a "reasonable interpretation" of the law by allowing a reduction in phosphorus discharge at one facility to make up for an increase at the proposed Annandale-Maple Lake facility. The ruling provided significant guidance to the MPCA in developing Pre-TMDL Trading.

View the [Minnesota Supreme Court Opinion](#) 

In September 2007, Pre-TMDL Phosphorus Trading was brought forward to the MPCA Citizens' Board as an informational item. Comments received were taken into account during the development of PTPT and the Draft Water Quality Trading Rules (currently under development). The Board approved Pre-TMDL Phosphorus Trading on June 24, 2008.

-  [Pre-Total Maximum Daily Load \(TMDL\) Phosphorus Trading Permitting Strategy Board Item](#) - Approval of Pre-TMDL Phosphorus Trading. Phosphorus Trading as an interim permitting strategy for new or expanding wastewater treatment facilities discharging upstream of an EPA approved 303(d) listed nutrient (phosphorus) impaired water.
-  [Pre-Total Maximum Daily Load Phosphorus Trading Permitting Strategy - Final Signature Document, June 27, 2008](#)

Pre-TMDL Phosphorus Trading Forms

-   [Application Form](#). Application for Pre-TMDL Phosphorus Trading: instructions and submittal information including on back side of form.

Publications

-  [Pre-TMDL Phosphorus Trading Factsheet](#)
-  [Pre-TMDL Phosphorus Trading Permitting Strategy](#)
-  [Issuing NPDES Permits for Discharge to Impaired Waters – New Facilities](#)
-  [Issuing NPDES Permits for Discharge to Impaired Waters – Expanding Facilities](#)

Contact Us

Questions, comments and request for additional information should be directed to the Water Quality Trading Coordinator, [Lisa McCormick](#), 320-441-6969.

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If you have questions or problems with this Web site, contact webmaster@pca.state.mn.us

Minnesota Pollution Control Agency, 520 Lafayette Road, St. Paul, MN 55155-4194

Phone: 651-296-6300, 800-657-3864; 24-hour emergency number: 651-649-5451 or 800-422-0798; TTY: 651-282-5332,

TTY 24-hour emergency number: 651-297-5353 or 800-627-3529

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