Diamond Lake Nutrient Total Maximum Daily Load Project

Water Quality/Impaired Water #8.28a • July 2010

Impaired waters are those that do not meet state water quality standards as set forth in Minnesota Rules Chapter 7050. Common impairments are for dissolved oxygen, nutrients, turbidity, bacteria, or metals. Impaired water bodies fail to meet criteria required to support aquatic life, or allow the designated use of a water body, such as swimming or fishing.

The Federal Clean Water Act requires the Minnesota Pollution Control Agency (MPCA) to identify impaired water bodies and develop a total maximum daily load (TMDL) for each parameter for which the water body does not meet standards. The TMDL is the total amount of a pollutant a water body can assimilate while meeting the established water quality standard(s).

A TMDL study is typically developed in four phases:

- Phase 1 - existing data is reviewed, data gaps are identified, and plans are developed to collect and analyze the additional data needed
- Phase 2 - that additional data is collected and evaluated
- Phase 3 - the TMDL is set. Loads are allocated to point and non-point sources and an implementation plan to meet load reductions is prepared
- Phase 4 - plans are implemented to reduce loads to the limits set in Phase 3, and to return the water body to meet water quality standards.

TMDL progress at Diamond Lake

Diamond Lake is a rural, but highly developed, 1,565-acre lake in Kandiyohi County with an average depth of 16 feet and a maximum depth of 27 feet. The watershed for Diamond Lake is 18,356 acres. Its land use is predominantly agricultural with 60 percent of the watershed dedicated to this purpose. Because Diamond Lake is located in the North Central Hardwood Forest Ecoregion, Diamond Lake must have levels below 40 ug/L Total Phosphorous , 14 ug/l Chlorophyll-a and have a Secchi disk transparency of greater than 1.4 meters to meet current state standards. The lake was placed on the MPCA's List of Impaired Waters in 2006, when monitoring data confirmed that the lake was no longer meeting these standards, and failed to attain the designated use for aquatic life and recreation due to excess nutrients.

Minnesota Pollution Control Agency • 520 Lafayette Rd. N., St. Paul, MN 55155-4194 • www.pca.state.mn.us
651-296-6300 • 800-657-3864 • TTY 651-282-5332 or 800-657-3864 • Available in alternative formats

In 2008 the Middle Fork Crow River Watershed District (MFCRWD), in partnership with the MPCA and Houston Engineering, Inc. initiated the field work needed to complete the TMDL study. Data collection on Diamond, Schultz, Wheeler and Hubbard lakes, plus the major inlets to Diamond Lake continued through the 2009 monitoring season. A public information meeting was held in Atwater, Minnesota following the first season of data collection (2008) to present results of the monitoring and to begin the discussion of implementation planning. Houston Engineering is currently working closely with the MFCRWD to compile all the data and begin the modeling, calculate the load allocations and write the draft report. Additional public meetings will be held to discuss the load allocations and the types of Best Management Practices (BMPs) that will be the most effective to help restore Diamond Lake.

The TMDL study will be completed in early 2011. Upon EPA approval of the final report, the Watershed District will finalize the implementation plan, in an attempt to address the study's findings.

What you can do

Many opportunities exist for the public to participate in helping protect the waters in the Diamond Lake area. The following are examples of implementation strategies to help reduce nutrients in the lake.

- Participate in the TMDL Process - residents are encouraged to learn about the TMDL process and attend public meetings. The meetings will also be an opportunity to learn about urban stormwater management, septic system upgrades, buffer installations, and other practices that could be implemented to reach TMDL goals.
- Plant a shoreline buffer or a rain garden - those who live along a lake or river can take advantage of financial incentives to plant buffers or rain gardens to prevent sediment, nutrients, or bacteria from entering the water.
- Plant farm buffers – farmers who have ditches, streams or lakes near their properties can qualify for financial incentives from the Watershed District to install buffers or other agricultural best management practices. Contact the Watershed District for more information.

For more information

As they are developed, all project documents for the Diamond Lake Nutrient TMDL will be posted on the Middle Fork Crow River Watershed District's website: www.mfcrow.org, and on the MPCA's Web site at: www.pca.state.mn.us. Further information may also be requested via telephone, from the MFCRWD at 320-795-0888, or the MPCA (toll free): 1-800-657-3864.