Frequently Asked Questions on the Lower Minnesota River Dissolved Oxygen TMDL

1. If this TMDL is for the lower 22 miles of the Minnesota River, why not focus on the Lower Minnesota River Watershed instead of the Minnesota River Basin?
Phosphorus is what is causing the low dissolved oxygen. Most of the phosphorus is coming from the larger Minnesota River Basin, upstream of Jordan.

2. Is the MPCA using old data to solve this problem?
No, the land use data and the discharges from wastewater treatment plants are updated from 1999-2000 records. This includes data for feedlots, manure application, septic systems, CRP, CREP, RIM, etc. Hydrology data from 1988 is being used because this is the most recent low flow period and the dissolved oxygen problem occurs only during low flow periods.

3. Will the MPCA rely exclusively on the HSPF Model to solve the dissolved oxygen problem in the Lower Minnesota River?
The model is used as an important tool in the process to provide information on effective methods to reduce phosphorus and to demonstrate to the EPA that this problem will be solved. The MPCA will not exclusively rely on the model results. Other key parts of the process include:

- An advisory committee to recommend how to reduce phosphorus in the Minnesota River Basin;
- Setting concentration goals for WWTPs and watershed goals for nonpoint sources;
- Continued monitoring of key parameters and flows, especially during the next low flow period. Monitoring results will be used to update the model and, if necessary, additional load allocations will be established.

4. What is the timeline allowed for implementation after a TMDL is approved by the EPA before we must meet them?
It is up to the states to determine how long it will take to implement changes related to a TMDL. The EPA requires the timeline to be reasonable. The customary timeline is 10 years for most TMDLs.

5. How far down stream does soluble phosphorus transport from a wastewater treatment facility to contribute to the algae problem in the lower reach of the Minnesota River?
Soluble phosphorus in the Minnesota River produces algae near where it enters. The algae – phosphorus relationship occurs in a cycle. Phosphorus produces algae, algae grow and die off, bacteria decompose the algae, and phosphorus is released again producing more algae and beginning the cycle again. During low flow conditions, a combination of factors produce low dissolved oxygen including a higher water temperature (warmer water holds less dissolved oxygen), less water in the channel, and slow moving water.

6. Is there any difference in water quality in the Minnesota River in the last 10 years? Why are we still talking about the same issues now as years ago? What has improved?

In September, 2002, the MPCA presented the results of a trends analysis that examined pollutant concentrations going back to the late 1960s/mid-1970s to 2001. The three monitoring stations included the Blue Earth River at Mankato and the Minnesota River at Jordan and Fort Snelling. Results of the study showed that biochemical oxygen demand has decreased by approximately 34 percent at both of the Minnesota River sites. Phosphorus showed similar reductions at Fort Snelling. Total Suspended Solids also decreased 30 to 40 percent at Jordan and Fort Snelling. Likewise, data from the Blue Earth River at Mankato showed approximate 40 percent reductions in Biochemical Oxygen Demand, phosphorus, and TSS. Few trends were available for the period from 1992 - 2002 because there was not enough data available.

- Nearly every major watershed has a Clean Water Partnership Project or watershed project working to improve the quality of the local water quality which will contribute to the Minnesota River. Governor Carlson's challenge to clean up the river helped to push local, state, and federal efforts ahead. Some watershed projects have documented reductions.

- Many wastewater treatment facilities have phosphorus limits which will reduce the amount of phosphorus in the Minnesota River.

- Many counties have accelerated programs to permit failing septic systems and feedlots.

7. What different management practices can be tested in the model?

- Effluent limits
- Soil erosion (sheet flow)
- Nutrient management
- Surface tile intake alterations
- Urban storm-water BMPs (expected treatment efficiencies)
- Land retirement programs (native grass, woody vegetation and wetlands)
- Septic tank corrections

The key is to remember that these are tracked at the large, river basin scale. Models that consider land use at smaller scales will be needed to determine the impact of changes made at the sub-watershed or community levels.