

Larry Gunderson
Minnesota Pollution Control Agency
520 Lafayette Road N
St. Paul, MN 55155
Phone: 651-757-2400
Fax: 651-297-8676
E-mail: *larry.gunderson@state.mn.us*

Subject: Comments regarding Draft Minnesota River Turbidity Total Maximum Daily Load Report

Mr. Gunderson,

We appreciate the opportunity to contribute to the process of developing a useful guide to improving water quality through good soil and water management in the Minnesota River basin.

We start off with a simple correction on page 1, “nutrients can simulate the growth of living organisms”. Perhaps the correct word is “stimulate”.

As discussed in the background information portion of the draft report, the Minnesota River Basin is predominantly agricultural, blessed with some of the most productive soils in the world. In addition to basin-wide land use statistics, the report could have included reference to the \$4 billion generated annually by the farmers who call this area “home.”

The reality is that no single individual or entity manages the entire basin. If the purpose of the MPCA’s impaired waters process is ultimately to improve water quality through better resource management, we suggest that the report move beyond basin-wide statistics to provide information at a scale more appropriate to first understanding resource management as it occurs now, then aiding decision-making to improve resource management in the future.

For example, statistics included on “conservation tillage” (pages 5-6) should be further categorized by slope, as the importance of conservation tillage generally increases with slope. It should also be noted that there are alternative or additional conservation practices that can be helpful in preventing soil erosion from impacting water resources, such as terraces and grass waterways. Local farmers report that the intensity of tillage basin-wide has been significantly reduced in recent decades, but again, the changes have been more rapid in areas of the basin where slopes dictate and soil types allow for these reductions. Farmers basin-wide are encouraged to continue to study and refine their tillage systems in order to maintain or improve soil health and protect water resources.

The Minnesota River Basin is a gem in its own right, worthy of protecting and preserving. The inclusion of a paragraph about Lake Pepin does not add to the importance of working to improve resource management in the basin. This paragraph should be omitted.

The discussion of causes of turbidity (page 7) states that “additional perennial vegetation will increase the uptake of nutrients, retaining soil on the land will both hold soil and attached phosphorus in place, and increased water storage will decrease (decreased- spelling error?) the amount of nutrients available”. This example list is at best unclear and at worst questionable as to the potential for significant impact, adding nothing useful to the report as a pollutant source document. The discussion about what to do about turbidity should be held over to the implementation planning phase. Examples in the source identification report may in fact limit the search for creative solutions, and should be avoided wherever possible.

The report refers to actively eroding ravines in the basin, in particular those having sub-surface tile drain outlets near the head of the incision. How many is “many”? Listing of potential sources is a good start; quantification of sources, wherever possible, will aid in estimating the effort, both in terms of cost and time, required to reduce turbidity. Repair of these outlets should be a high priority, and landowners should be encouraged to talk to their local SWCD offices for assistance.

The discussion of regulated stormwater (page 21) assumed infiltration of one inch in urban areas, with corresponding sediment export of 50 lbs/acre/year during mid-flow conditions. Greater explanation of these assumptions and any data supporting these assumptions should be added to the report.

We appreciate the recognition that research is insufficient to separately calculate natural background sources. Effective management solutions will require sorting out not only the places sediment originates, but the mechanisms by which it is transported through the river system. It is regrettable that the South Metro Mississippi River Total Suspended Solids takes a different approach, claiming to be able to quantify natural background, especially given that the Minnesota River plays such a significant role in sediment delivery to the South Metro Mississippi River.

Again, the reference to sediment cores from Lake Pepin should be omitted, or alternatively, all relevant core information should be included, such as the Kelley, et al paper, “Sources of sediment in Lake Pepin on the Upper Mississippi River in response to Holocene climatic changes.” This paper shows the tremendous variability in sediment deposition at this core point over a longer time frame.

The TMDL allocations for individual impaired reaches include the 50 lbs/acre/year assumption for urban areas. Does MPCA have monitoring data to support this number, which is significantly less than the urban sediment supply figure used in other TMDL reports?

This section of the report provides useful statistics on cropping and conservation easements, but does not connect these statistics back to the introductory acknowledgment that “geomorphic features have a strong influence on land use, soil erosion potential and the distribution of conservation easements.” Soil erosion is a very site specific concern, thus the report should include more than simple watershed summary data. Are the majority of conservation easements on the most erosive land? Are the majority of corn and soybean acres on the flattest areas of the watershed? The report should attempt to answer these questions. This same concern surfaces in the section on modeling and consideration of land use

and management options. For example, table 6.1 of the report suggests increased crop residue on cropland with slopes greater than 3%. It would be helpful to see the current extent to which these croplands are already managed with 30% crop residue coverage. The report also recommends that farmers follow U of M fertilizer recommendations. Does MPCA have data on the extent to which U of M nutrient recommendations are being followed by farmers currently? Management decisions for the future must be founded in a good understanding of where one is today.

One of the most troubling statements in the draft report is found on page 183, in describing options if sediment reductions are not made: "Change access to funding by local units of government". If the intent of this statement is to suggest better allocation of scarce government resources, this should be made clear. As stated in the draft report, this statement can be construed as a thinly veiled threat to withhold state or federal funding from local units of government. If this is the case, the report should outline how these decisions to "change access to funding" would be made. Local land managers, working with local units of government, are in the best position to effectively align financial and human resources to solve natural resource problems. We would suggest a more supportive statement, reflecting a willingness and desire to work with local units of government to align resources with areas of potential improvement.

The implementation framework presented includes a list of potential reduction strategies, which will allow for further refinement during stakeholder discussions as the implementation plan is developed following EPA approval of the draft TMDL. It should be noted that some of the proposed solutions are already largely in place. For example, according to the Blue Earth County SWCDs, shoreland compliance is already very high, in the range of 95%.

The discussion on research needs is very useful and serves as a caution against sweeping changes in management. The role of tile and ditch drainage is of particular interest to the agricultural community. While many stakeholders have been quick to point to agricultural drainage as a driver of sediment movement, the report rightfully states that drainage is not completely an agricultural issue (as many cities and roads throughout the basin also rely on drainage) and that the relationship between drainage, stream hydrology and erosion are not fully understood.

The implementation discussion also includes the statement that loading is dominated by cropland runoff during large events and impervious surfaces associated with developed land during smaller events (page 189). This paragraph should be expanded to note that at high flows, turbidity is also heavily influenced by runoff from ravines, bluffs and streambeds. A discussion of the impact of volatile suspended solids on turbidity at low flows would also be helpful.

We support the phased approach and principals of adaptive management, especially the concept that as more is learned, water quality standards may require revision.

We thank you for the opportunity to comment on the draft report, and look forward to your response.

Sincerely,

Minnesota Corn Growers Association
738 First Ave East
Shakopee MN 55379

Minnesota Crop Production Retailers
Suite 900, 7500 Flying Cloud Drive
Eden Prairie, MN 55344

Minnesota Farm Bureau Federation
3080 Eagandale Place
Eagan, MN 55121

Minnesota Farmers Union
600 County Road D West, Suite 14
St. Paul, MN 55112

Broiler and Egg Association of Minnesota
108 Marty Drive
Buffalo, MN 55313

Minnesota Turkey Growers Association
108 Marty Drive
Buffalo, MN 55313

Minnesota Pork Producers Association
151 St. Andrews Court, Suite 810
Mankato, MN 56001

Minnesota Soybean Growers Association
151 St. Andrews Court, Suite 710
Mankato, MN 56001

Minnesota State Cattlemen's Association
255 East Kellogg Blvd, Suite 102
St. Paul, MN 55101

Doug Albin
4536 220th Ave
Clarkfield, MN 56223

Willis Anthony
42505 County Road 15
St. Peter, MN 56082

Greg Bartz
25455 State Highway 4
Sleepy Eye, MN 56085

Dave Craigmile
3600 140th St
Boyd, MN 56218

Warren Formo
1239 Merganser Court
Eagan, MN 55123

Kathy Guse
36817 50th St
Janesville, MN 56048

George Rehm
8431 County 17 Blvd
Cannon Falls, MN 55009

Steve Sodeman
42050 737th Ave
St. James, MN 56081



151 Saint Andrews Court
Suite 810
Mankato, MN 56001
507-345-8814

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Larry Gunderson, Project Manager
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, MN 55155-4194
651-757-2400
larry.gunderson@state.mn.us

Mr. Gunderson,

Thank you for the opportunity to comment on the draft Minnesota River Turbidity Total Maximum Daily Load Report. We appreciate the opportunity to contribute to the process of developing a useful guide to improving water quality through good soil and water management in the Minnesota River basin. Please consider the following comments from the Minnesota Pork Producers Association (MPPA).

As discussed in the background information portion of the draft report, the Minnesota River Basin is predominantly agricultural, blessed with some of the most productive soils in the world. In addition to basin-wide land use statistics, the report could have included reference to the \$4 billion generated annually by the farmers who call this area "home."

MPPA suggests that the report move beyond basin-wide statistics to provide information at a scale more appropriate to first understanding resource management as it occurs now, then aiding decision-making to improve resource management in the future. For example, statistics included on "conservation tillage" (pages 5-6) should be further categorized by slope, as the importance of conservation tillage generally increases with slope (accurate statistics on the percentages of near-channel, steeper soils on which conservation practices are currently being implemented would be a much more useful and paint a clearer picture regarding potential improvements from agricultural soils). It should also be noted that there are alternative or additional conservation practices that can be helpful in preventing soil erosion from impacting water resources, such as terraces and grass waterways. Local farmers report that the intensity of tillage basin-wide has been significantly reduced in recent decades, but again, the changes have been more rapid in areas of the basin where slopes dictate and soil types allow for these reductions. [Later in the document...] Are the majority of conservation easements on the most erosive land? Are the majority of corn and soybean acres on the flattest areas of the watershed? The report should attempt to answer these questions. This same concern surfaces in the section on modeling and consideration of land use and management options. For example, table 6.1 of the report suggests increased crop residue on cropland with slopes greater than 3%. It would be helpful to see the current extent to which these croplands are already managed with 30% crop residue coverage.

The discussion of causes of turbidity (page 7) states that "additional perennial vegetation will increase the uptake of nutrients, retaining soil on the land will both hold soil and attached phosphorus in place, and increased water storage will decrease(d) the amount of nutrients available". This example list is at best unclear and at worst questionable as to the potential for significant impact, adding nothing useful to the report as a pollutant source document. The discussion about what to do about turbidity should be held over to the implementation planning phase.

The report reverts to actively eroding ravines in the basin, in particular those having sub-surface tile drain outlets near the head of the incision. How many is "many"? Listing of potential sources is a good start; quantification of sources, wherever possible, will aid in estimating the effort, both in terms of cost and time, required to reduce turbidity. Repair of these outlets should be a high priority, and landowners are encouraged to talk to their local SWCD offices for assistance.

The discussion of regulated stormwater (page 21) assumed infiltration of one inch in urban areas, with corresponding sediment export of 50 lbs/acre/year during mid-flow conditions. Greater explanation of these assumptions and any data supporting these assumptions should be added to the report. The TMDL allocations for individual impaired reaches

include the 50 lbs/acre/year assumption for urban areas. Does MPCA have monitoring data to support this number, which is significantly less than the urban sediment supply figure used in other TMDL reports?

In a couple locations throughout the report, there are paragraphs related to Lake Pepin which basically offer nothing of value to this report. MPPA would advise these paragraphs be omitted.

One of the most troubling statements in the draft report is found on page 183, in describing options if sediment reductions are not made: "Change access to funding by local units of government". It seems unwise to include a statement that appears like a threat to local governments based on a set of highly suspect assumptions and computer modeling with little track record of accuracy. It should at least be acknowledged that a failure to achieve sediment reductions could very well be the result of improper load allocations, faulty computer modeling, failure to identify and target scarce resources to high-priority areas, and the inability to accurately assess natural background contributions.

The implementation framework presented includes a list of potential reduction strategies, which will allow for further refinement during stakeholder discussions as the implementation plan is developed following EPA approval of the draft TMDL. It should be noted that some of the proposed solutions are already largely in place. For example, according to the Blue Earth County SWCDS, shoreland compliance is already very high, in the range of 95%.

The discussion on research needs is very useful and serves as a caution against sweeping changes in management. The role of tile and ditch drainage is of particular interest to the agricultural community. While many stakeholders have been quick to point to agricultural drainage as a driver of sediment movement, the report rightfully states that drainage is not completely an agricultural issue (as many cities and road throughout the basin also rely on drainage) and that the relationship between drainage, stream hydrology and erosion are not fully understood.

The bottom line is that we need solutions that can reduce sediment while allowing the farmland in the Minnesota River Basin to continue to remain highly productive. Sweeping changes that significantly reduce the productivity of this farmland are just not practical. If you have any questions regarding MPPA's comments on the draft Minnesota River Turbidity Total Maximum Daily Load Report, please contact Dave or Jeremy at 507-345-8814.

A handwritten signature in black ink, appearing to read "David Preisler", with a stylized, flowing script.

David Preisler
Executive Director
Minnesota Pork Producers