

...protecting our water

May 24, 2012

Mr. Robert Finley
Southeast Regional Manager
Minnesota Pollution Control Agency
12 Civic Center Plaza, Suite 2165
Mankato, MN 56001

Dear Mr. Finley:

Please accept this letter from the Cannon River Watershed Partnership (CRWP) as our comments on the South Metro Mississippi Total Suspended Solids Total Maximum Daily Load (TMDL). We appreciate the opportunity to weigh in on this process and document.

CRWP has been a participant in this TMDL process since the beginning although we were not a part of the technical committees. We participated in several day long sessions in Red Wing that gave updates on the process. We applaud the MPCA for its work to include all stakeholders in this study and feel we were given ample opportunities to make our voice heard. The time and commitment to studying the issue that the MPCA has made are also to be commended.

The Cannon River watershed is a small contributor to the Total Suspended Solids (TSS) loading overall at roughly 6%. However, we take our responsibility to reduce this loading seriously. We believe that the overall load reduction of 50% is reasonable and CRWP will continue our active role in making this happen to the best of our ability.

CRWP has worked on developing and beginning to carry out implementation strategies for two TMDLs in our watershed so far. When looking at section 7.0 on General Implementation Strategies we have the following comments based on what we have learned from this experience:

1. Targeting best management practices (BMPs) is critical. The "random acts of conservation" that have happened in the past have not gotten us far enough fast enough with regard to reducing TSS loading. To do this targeting the counties and Soil and Water Conservation Districts need help. The MPCA should dedicate either funds or staffing to help with GIS work and other practices that will help carry out the targeting that needs to be included in implementation plans.
2. Shoreland buffers are listed as an implementation strategy. Minnesota Statute 103F.201 and Minnesota Rule 6120.3300 sub. 7 require a vegetated 50 foot buffer along streams defined

by the Department of Natural Resources as protected waters. CRWP would like to see all shoreland have the buffers they need and have been working on trying to improve compliance with this rule for several years. Local units of government are supposed to enforce this rule. In the Cannon River watershed there is one county, Dakota, that is doing active enforcement. Waseca County has started to do some education on this issue. Goodhue County was supposed to start enforcement but as of the spring of 2012 this had not begun. There are 6 counties in our watershed and they should ALL be enforcing the rule. The MPCA and DNR need to demand that this be done.

Minnesota Statute 103E.021 requires that drainage authorities require the establishment of a 16.5 foot permanently vegetated buffer along public drainage ditches when benefits have been redetermined. Freeborn County has done this ditch by ditch over 20 years. The MPCA should demand other drainage authorities do the same thing.

3. This TMDL and subsequent work will help to identify where BMPs and other practices should take place to reduce TSS loading. However, just because we know where the BMPs should go does not mean they will happen. The nonpoint sources, in particular agriculture, are under no legal requirement to make any changes. Anything they do will be voluntary. The implementation activities do not adequately address the role and need for community engagement and understanding of the community capacity to change behavior. We question whether the actions listed in this plan for implementation are realistic given the current approaches. Unless more is done to meet people where they are and help them move forward all the water quality studies and data in the world will not create change. Funds should be allocated for community capacity studies to help understand what people in each watershed understand about the TSS issue and what they are willing to do. Funds should also be allocated to help pay for the community engagement work in the watersheds.

4. While the nonpoint source BMPs are voluntary and we hope that behavior changes will happen on their own the MPCA and other state agencies should use all the tools and rules available to them to enforce upon those who do not take actions they are required to take.

The Nondegradation for All Waters rule, MN Rule 7050.0185, sub. 1 states:

*"The beneficial uses inherent in water resources are valuable public resources. It is the policy of the state to protect all waters from significant degradation from point **and nonpoint sources** and wetland alterations and to maintain existing water uses and aquatic and wetland habitats. Existing beneficial uses and the water quality necessary to protect the existing uses must be maintained and protected from point and nonpoint sources of pollution."*

Minnesota Statute 103F.415 prohibits excessive soil loss stating:

"Subdivision 1. Prohibited activities. A person may not cause, conduct, contract for, or authorize an activity that causes excessive soil loss.

Subd. 2. Agricultural land. A land occupier of agricultural land is not violating subdivision 1 if the occupier is farming by methods that implement the best practicable conservation practices."

The MPCA and other appropriate state and local agencies should use these rules to the fullest extent possible.

5. We applaud the idea of short-term, specific milestones mentioned in section 7.5 on page 82. The overall goal of the TMDL is so large and overwhelming that it is important to have smaller goals within it that are more likely to be achieved.

We appreciate the opportunity to submit these comments and look forward to working with the MPCA and others to reach the goals of the TMDL.

Sincerely,

A handwritten signature in cursive script that reads "Beth Kallestad".

Beth Kallestad
Executive Director



Friends of the Mississippi River

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May 29th, 2012

Mr. Robert Finley
Southeast Minnesota
12 Civic Center Plaza, Suite 2165
Mankato, MN 56001

RE: Comments on the Draft South Metro Mississippi River TSS TMDL Report

Dear Mr. Finley:

I am writing on behalf of Friends of the Mississippi River and our members with comment on the proposed Mississippi River Site Specific Standards now open for public comment.

Friends of the Mississippi River (FMR) is a non-profit organization founded in 1993 with a mission to protect, preserve and enhance the Mississippi River and its watershed in the Twin Cities metro area and beyond. With over 1,600 members, 16 active board members, and 18 staff - FMR is a leading citizen organization working to protect and enhance the Mississippi River in the Twin Cities metropolitan area.

The Mississippi River

The Mississippi River is especially important to the high quality of life in the Twin Cities area and beyond. As transportation corridor, it supports the region's economic base. As a drinking water source, it provides drinking water to over one million Minnesotans. As an ecosystem, it provides food and habitat for fish, birds and other wildlife. As a recreational amenity, boating, fishing and riverside trail use are integral aspects of our quality of life. In its entirety, the Mississippi River and its floodplain sustains a diverse population of living things, including at least 260 fish species, 40% of the nation's migratory waterfowl, and 60% of all North American birds use the river or its basin corridor during their spring and fall migrations. This river is also home to 50 species of mammals, 145 species of amphibians and reptiles, and 38 documented species of mussel.

The health of the Mississippi River is an important economic, ecological, recreational and cultural asset. While the Mississippi River remains an iconic big river - one that serves as a drinking water source, economic engine and critical ecosystem - it is also a troubled resource threatened by excess sediment. This sediment harms aquatic life and inhibits the growth of vegetation that would otherwise prevent riverbank erosion, provide aquatic habitat, and help remove excess nutrients from the river.

The MPCA approved a site-specific standard for TSS in the Mississippi River of 32mg/l (ppm) TSS at Lock and Dam No. 2 and No. 3) represents an approximately 1/3rd reduction from the current seasonal average TSS (47ppm TSS). The achievement of the proposed TSS standard through this TMDL and its subsequent implementation plan will ensure this vital natural resource is protected for generations to come. In addition, the TMDL will assure the continued survival of Lake Pepin, the upper portion of

which will otherwise vanish this century; and the entirety of which will otherwise vanish in approximately 300 years.

TMDL Development Process

On behalf of our members, FMR commends the MPCA for your professionalism, fairness, and transparency, and diligence throughout the development of the South Metro Mississippi River TSS TMDL.

In particular, we commend you for a TMDL stakeholder engagement process that was unparalleled in its thoroughness, and allowed for extensive stakeholder participation from multiple sectors and interests. FMR was present at many of the Stakeholder Advisory Committee meetings, and noted that stakeholder participation was strong across all sectors. Questions, comments, suggestions and proposed amendments to the TMDL were welcomed, and agency staff treated everyone with consideration and respect at all times.

The MPCA and staff leadership are to be commended for working diligently to produce a document that represents the consensus of the overwhelming majority of stakeholder participants and scientific advisors as to the appropriate allocations of reductions in sediment pollution to the South Metro Mississippi River.

FMR also applauds your efforts to develop a scientifically sound TMDL through a rigorous, process of scientific investigation. Based on extensive research and 22 years of water monitoring data, along with input from a Science Advisory Panel made up of a diverse group of representatives from universities and research organizations, the MPCA's recommended pollution reductions are sufficient to bring the South Metro Mississippi River into compliance with the TSS site-specific standard for this reach of the river.

In particular, we thank the MPCA for its excellent work with Limno-Tech to develop a robust and accurate river sediment transport, deposition and re-suspension model for this reach of the river. The MPCA sediment source studies provide the public with more than adequate evidence that TMDL reductions are achievable, necessary, and sufficient to meet the TSS site-specific standard for this reach of the river.

FMR supports the MPCAs primary scientific conclusions in this TMDL:

- The dramatic increase in TSS loads to the South Metro Mississippi River from pre-settlement conditions threatens aquatic life in the South Metro Mississippi River and is filling in Lake Pepin at approximately ten times its natural rate.
- Roughly three-quarters of the sediment is from the Minnesota River Basin.
- There has been a substantial shift in sediment sources from field to non-field sediment in recent decades. The impact of engineered drainage and land cover changes on watershed hydrology has resulted in increased non-field erosion from riverbanks, bluffs and ravines, primarily in the Minnesota River Basin.
- The following sediment load reductions will be necessary to achieve the TSS Site Specific Standard for this reach of the river.
 - 60% from the Minnesota River during high and very high flows and 50 percent during average and low flows;
 - 50% from the Cannon River;
 - 20% from the Upper Mississippi River;
 - 20% from smaller rivers and other direct tributaries; and
 - 25% from urban runoff

TMDL Comments

While we are grateful for the excellent work of the MPCA throughout the development of this TMDL, there are several aspects of the TMDL with which FMR does not agree and would like to see the MPCA address through this public comment period. In general, we are concerned about the following:

- The validity of the modeling data used to determine the WLA for MS4s
- The allocation of natural background between field and non-field sources
- Failure to differentiate field & non-field sources within the LA
- The absence of an explicit state commitment to enforce all existing law in the near term
- The lack of reasonable assurance for non-point-source agricultural pollution reductions

MS4 WLA Estimates

FMR notes that the WLA requirement for MS4s includes a 25% reduction in TSS Loads. While FMR strongly believes that all sources of pollution to the Mississippi River must be held accountable for their share of pollution reductions, it is uncertain as to how that 25% WLA was developed. The estimated cost of compliance (~\$850 million - TMDL, page 70) warrants a full accounting of the assumptions and modeling data used to assign this magnitude of pollutant reductions for MS4s.

FMR is particularly concerned about the apparent discrepancy between sediment coefficients used in the modeling report and those used in the draft TMDL.

- The Limno-Tech modeling report (page 62) cites research by Steve Kloiber, Metropolitan Council, which used detailed water quality monitoring and modeling to estimate TSS export from a 480,000-acre Twin Cities Metropolitan Area of 50 pounds per acre.
- A March 9, 2007 technical memorandum from Limno-Tech to the MPCA “Upper Mississippi-Lake Pepin Water Quality Model: Development, Calibration and Application,” uses 66 pounds per acre.

The above analysis is incongruent with the average annual MS4 runoff coefficient of 225 pounds per acre used in the South Metro Mississippi River TSS TMDL.

Given the estimated costs of compliance for MS4s, and the magnitude of the discrepancy in urban runoff loading estimates used in the development of the TMDL, FMR requests additional information as to the decision making process that assigned the 225 pound per acre baseline runoff coefficient.

FMR also requests that the MPCA provide a detailed accounting of the cost estimates used in developing the ~\$850 million figure. In particular, FMR requests information regarding the \$/lb TSS removal figure used in the estimate, and whether this includes the full life-cycle cost of installed BMPs.

Natural Background

FMR notes that in the Minnesota River Basin, the TMDL correctly determines that 35% of the TSS load derives from field erosion and 65% from non-field sediment sources stream banks, bluffs and ravines. Natural background is correctly estimated as ~10% of the total TSS load.

However, the TMDL appears to assign natural background evenly across field and non-field sources. We note that since fields did not exist prior to European settlement, it is illogical to assume any natural background can be accurately assigned to the field portion of the LA in the TMDL. Natural background for field loads should be zero. As a result, natural background TSS must be assigned only to non-field sources. Failure to do so has the effect of overestimating the anthropogenic component of non-field sources and underestimating the anthropogenic impact of field sources in the LA portion of the TMDL.

Differentiating Field & Non-Field in LA

FMR strongly believes that the LA must be subdivided to include separate field and non-field loads in the Minnesota River Basin and down through each of the sub-watersheds in the Minnesota River Basin, with natural background assigned to the non-field portion of the LA only.

The MPCA has sufficient data to assign specific reductions to field and non-field sediment sources in each sub-watershed in the Minnesota River Basin. Doing so will allow local implementation plans to more accurately develop watershed-specific targets and milestones for anthropogenic field and non-field erosion sources. FMR requests that the TMDL be revised to explicitly indicate the field vs. non-field component of the LA in each watershed, with natural background assigned to the non-field portion of the LA only.

Use of Existing Authority

The TMDL correctly notes a number of state statutes and rules that authorize state & local government to apply regulatory measures to control non-point source pollutant loads, including TSS. We believe that the MPCA should commit to use its existing authority and enforce & strengthen existing laws within the first 5 years of TMDL implementation, including:

- In order to ensure enhanced stabilization of stream banks and reduced field and non-field TSS, the MPCA should set a goal of 100% statewide compliance with existing shoreland rules as per *Minn. Stat. 103F.201 and Minn. R. 6120.3300, Subp. 7*. A number of counties, in partnership with universities and state & local governments, have completed extensive inventories of stream buffer compliance. These efforts, if duplicated in each county in the Minnesota River Basin, could yield immediate TSS reductions at limited cost.

FMR requests that the MPCA commit, in the TMDL, to crafting a program to work with the Minnesota DNR, BWSR, and Minnesota River Basin counties and local jurisdictions to map buffer compliance at the parcel level and take necessary enforcement action to ensure 100% compliance with *Minn. R. 6120.3300, Subp. 7* within the next 5 years.

It is FMR's position that compliance with existing rules should also be a prerequisite for access to public conservation funds of any kind. We urge the MPCA to work with MNDNR, BWSR, local county and SWCD leadership, and other jurisdictions to ensure that compliance with *Minn. R. 6120.3300, Subp. 7* is fully achieved before investing public resources, including Clean Water, Land & Legacy Amendment money, in TSS reduction projects or programs at the local level.

- In order to ensure enhanced stabilization of ditch banks, stream banks, and reduced field and non-field TSS, the MPCA should set a goal of conducting redetermination of benefits for all drainage systems in the Minnesota River basin under *Minn. Stat. 103E.021100*. Redetermination process allows for fair allocation of the costs of ditch maintenance, and offers local jurisdictions the opportunity to implement vital water quality improvements to these systems. This includes the elimination of side inlets; re-sloping and re-vegetation of ditch banks; and establishment of a permanent vegetated buffer of no less than 16.5 feet on all segments of the ditch system.

A number of Minnesota counties have already committed to completing a redetermination of ditch benefits. It is FMR's position that the MPCA should use its authorities to require all drainage authorities to begin to conduct a redetermination of benefits for all ditch systems within the next 5 years, and complete those redeterminations within the next 10 years.

- As ravine erosion remains one of the largest sources of TSS to the South Metro Mississippi River, FMR urges the MPCA to fully exercise its authority under *Minn. R. 7050.0210, subp. 2*, to require ravine erosion to be reduced according to best available technology. In addition, *Minn. Stat. § 103F.405* allows for excessive soil loss ordinance enforcement. These rules clearly direct the MPCA to address ravine erosion, particularly ravine erosion that is exacerbated by channelized flow from agricultural drain tile – one of the major sources of excessive sedimentation to the Minnesota & Mississippi River systems.

In addition, FMR feels strongly that TSS loads derived from drain tile outlets and other channelized discharges can and must be assigned to the WLA for the TMDL. Drain tile discharges at the head of highly erodible ravines are a major factor in the excessive TSS loads to the Minnesota River, and are a major factor in the TSS impairment in the South Metro Mississippi River.

FMR requests additional information from the MPCA as to why end-of-pipe flow volume and TSS loads from agricultural drain tile is not considered a point source, and thus included in the WLA portion of the TMDL. FMR requests that the portion of non-field TSS in the Minnesota River Basin that is derived from ravines that are adversely impacted by drain tile outlets at the ravine head be included in the WLA on the TMDL.

- FMR notes that the MPCA is also authorized to classify excess stream flow as a pollutant under *Minn. Stat. 115.01, Subd. 13*. Landscape cover change, along with engineered drainage and extensive agricultural drain tile installation, are the primary factors in the enhanced flow-per-unit-of precipitation throughout the Minnesota River Basin and the South Metro Mississippi River watershed. As this excessive flow-per-unit-of-precipitation is a major factor in non-field erosion, and this anthropogenic component of non-field erosion is the single largest source of TSS to the South Metro Mississippi River, FMR recommends the MPCA commit to work with local jurisdictions to determine the maximum magnitude of flow that will allow the resource to achieve TSS load allocations. In this way, local jurisdictions can use flow as a surrogate for TSS LA compliance, and more accurately measure progress toward TSS TMDL goals.
- The MPCA is further authorized by *Minn Stat. 115.03 (e)* to “...adopt, issue, reissue, modify, deny, or revoke, enter into or enforce reasonable orders, permits, variances, standards, rules, schedules of compliance, and stipulation agreements, under such conditions as it may prescribe, in order to prevent, control or abate water pollution.” FMR recommends the MPCA commit to make full use of this authority to compel all parties, including field agriculture operations, to take actions sufficient to result in achievement of the TSS TMDL pollution reduction goals.

It is FMR’s position that, while voluntary agricultural pollution load reductions have failed to yield pollution reductions on the scale required to meet the objectives of this TMDL, successful implementation of the regulatory approaches outlined above will yield substantial improvement in water quality performance and must be applied in the 1st phase of TMDL implementation. The MPCA is the agency most capable of ensuring meaningful implementation of the above authorities, and FMR requests that the MPCA’s written commitment to do so be included in the TMDL document.

Reasonable Assurance

Minnesotans value clean water and expect everyone to do their part to clean up polluted waterways. Governor Arne Carlson recognized this when, in 1992, he established the goal of making the Minnesota River “fishable and swimmable” in 10 years. Two decades later, the MPCA’s most recent biological

assessment reveals that little to no progress has been made¹.

While cities and point sources are required to meet TMDL goals, field agriculture operations are given voluntary reductions with no effective accountability mechanism in place – and no contingency plan should these voluntary actions fail to achieve pollution reduction goals. The TMDL acknowledges this fact, noting: “...at this time BMP implementation is a voluntary process. Rates of BMP adoption are often low and not necessarily selected or placed in areas that will maximize the potential to achieve a desirable water quality result.”

It is clear that the TMDL LA can be achieved, but only with some form of accountability mechanism in place to ensure that real, meaningful progress toward agricultural field and non-field pollution control is achieved.

Section 7 of the TMDL lays out a framework and process for implementing the TSS TMDL. FMR believes that the MPCA should amend this section to include the following:

- A commitment to conduct a transparent and thorough “gaps analysis” to determine the pollutant load reductions that can be made with existing authorities, and identify what additional authorities may be necessary in order to achieve the pollutant reductions included in this TMDL.
- A framework for accurately measuring anthropogenic field and non-field pollution in each sub-watershed, particularly in the Minnesota River Basin. The MPCA should provide detailed annual reporting on watershed progress toward agricultural load reductions through these TMDLs, and differentiate progress toward field and non-field LA. In particular, the anthropogenic portion of non-field erosion, as defined by non-field LA above natural background, should be clearly defined in each watershed along with a detailed analysis of the flow regime required to meet the anthropogenic non-field LA.
- The MPCA should commit to target limited resources, including Clean Water, Land, & Legacy money, for maximum water quality impact. Minnesotans expect our taxpayer resources to be used wisely. The state should commit, in writing, to develop a “project priority list” for each watershed in the Mississippi & Minnesota River basins – and commit to fund priority projects first, regardless of where they are located.
- The TMDL as written lacks specific timelines and milestones for progress within each sector. The MPCA should amend the TMDLs to include aggressive but achievable 2-year benchmarks and 5-year milestones – and measure our progress toward those goals annually.
- FMR is not confident that the TMDL can be successfully implemented with our current state and local governance structures. The TMDL lacks a clearly defined responsible local government unit charged with ensuring compliance in the Minnesota River Basin. We note that in 1994, the Minnesota River Citizens Advisory Committee recommended the creation of a Minnesota River Basin Commission. The Commission would lead the development of a coordinating structure to ensure that implementation plans, strategies and actions are conducted effectively and that water quality is regularly measured and reported to the public. FMR supports the creation of a Minnesota River Basin Commission, and requests the MPCA include the development of such a committee in the reasonable assurance section of the TMDL.

¹ Revisiting the Minnesota River Assessment Project, MPCA 2011

- The MPCA should commit to provide detailed plans for educating farmers on the pollution reductions they must achieve, and then hold agricultural producers accountable to that standard on a watershed basis. We cannot afford to waste another two decades hoping that voluntary agricultural pollution reductions will be sufficient to meet our clean water goals.

Voluntary incentives, while valuable, are simply not an effective tool for achieving water quality pollution reductions on the scale required by this TMDL. The MPCA should commit to developing a system for holding agricultural operations accountable for meeting watershed-specific goals, and should fully implement that system within 5 years. FMR endorses the Agricultural Management Area (AMA) concept included in the Minnesota Water Sustainability Framework as a starting point for the development of an effective, locally generated agricultural accountability mechanism.

As we near the 40th anniversary of the Clean Water Act, we urge the MPCA to seize the opportunity presented by this TMDL to adapt our water pollution control practices to a new generation of challenges.

While factories, wastewater treatment facilities, cities, and other point sources have successfully mitigated their pollution loads to the South Metro Mississippi River over time, the largest contributing sector of pollution to the river – field agriculture – remains exempt from regulatory accountability. It is clear that the State of Minnesota has the necessary authority to compel the agricultural sector to modify field practices to meet the 32mg/l TSS standard for the South Metro Mississippi River.

We see no reason for the MPCA to refrain from taking decisive action to hold all sectors – including field agriculture - accountable for meeting the clean water goals of the South Metro Mississippi River TSS TMDL. We offer the MPCA our full support in your efforts to do so.

On behalf of the board, staff, volunteers and members of Friends of the Mississippi River, I thank you for your consideration. FMR looks forward to working with the MPCA and all water quality stakeholders during the implementation phase if this project.

Sincerely,



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May 25, 2012

Mr. Robert Finley
Minnesota Pollution Control Agency
18 West Lake Drive
Rochester, MN 55904

Dear Mr. Finley:

The Lake Pepin Legacy Alliance represents hundreds of citizens who live on or near Lake Pepin in two states. LPLA believes that the Total Maximum Daily Load study is one of the most important developments in the history of the lake and its backwaters. Completion of the TMDL and its implementation by federal and state agencies will be dynamic proof that there's real hope for restoration of the South Mississippi ecosystem and for slowing the rate of Lake Pepin sedimentation. Our comments are intended to make sure that the final TMDL draft not only meets the letter of the law but that it stands also as a measurable plan for immediate action. In short, we hope it will turn good science into hard reality.

The TMDL represents a couple of decades of very high quality research. In our view, all the major questions about the science – raised by extensive review by all stakeholders – have been satisfactorily answered by the Minnesota Pollution Control Agency. The level of MPCA professionalism and thoroughness in this process is almost without precedent. Accordingly, we ask you to resist requests to go back and debate questions that already have been settled satisfactorily. Our members believe overwhelmingly that it's time to submit the TMDL to the Environmental Protection Agency for approval. Lake Pepin is enduring a perfect storm of damage. Further delay is not likely to reveal a more perfect remedial action.

The TMDL process has created a marvelous reawakening of public fervor regarding the sedimentation issue. Where once it was taken for granted that the enormity and complexity of the problem simply made it hopeless, now there is a growing belief that help is on the way. To

sustain that citizen hope, it's critical to proceed with implementation planning even as the administrative approval process is ongoing. The LPLA stands as a willing and constructive partner as you chart a specific and measurable path on a realistic timetable.

Our specific comments on the TMDL address two topics: first, the problem of sediment resuspension as a pollutant source from the riverbed; second, providing reasonable assurance that the nonpoint source load reductions called for in this document will be achieved by a time certain.

All sediment sources have been discussed and quantified with the notable exception of internal loading from the river itself, including upper Lake Pepin (above River Mile 780, the lower boundary of the reach affected by the TMDL). The modeling scenario used to develop load allocations (Scenario 17a) is based on a 50% reduction in internal sediment loads (page 284 of the Limno-Tech UMR-LP model report, 2009). This was one of the adjustments to the model that was needed in order to meet the water quality standard of 32 mg/L summer average. In the summary of TSS allocations in Part 6.0 of the TMDL, the final item specifies a 50 percent load reduction from internal sources such as wind-induced resuspension. Internal loading is also cited in the implementation portion of the TMDL document, Chapter 7, in connection with complementary Mississippi River restoration activities such as island-building (to reduce wind fetch) and water level drawdowns (to expose mud flats and trigger growth of submersed aquatic vegetation). Thus, the TMDL and supporting technical documents recognize internal loading as one of the sources of TSS that needs to be reduced to meet the water quality standard, but it is left out of numeric calculations of load allocation components. The LPLA regards this as a serious shortcoming that should be corrected before the TMDL is submitted to the EPA for final approval.

Recent communication with Limno-Tech confirms that it is possible either with existing model output, or with additional model runs, to quantify current and required internal TSS loading as a basis for including internal loading as part of the LA. We urge that this be done, not only for lower Pool 2 (Spring Lake), but also for upper Pool 4, where resuspension is a significant and frequent problem that prevents the 32 mg/L water quality criterion from being maintained during much of the summer. Re-suspension is obviously a significant portion of TSS loads to LPLA members who live on this part of the river. For example, residents of Wacouta know that the depth of water in Wacouta Bay has declined to merely one foot, and that the water is often in a state of high turbidity associated with resuspension of solids from wind. Because backwater areas such as Wacouta Bay are included in the turbidity impairment listing, which extends to river mile 780, LPLA requests that the resuspension load be calculated for both Spring Lake and Upper Lake Pepin, and the 50% reduction in resuspended solids that was modeled be used to calculate a load allocation for resuspended solids in both locations.

Listing resuspension as a separate component of the load allocation will help to ensure that measures to reduce resuspension go forward. The LPLA has met with the U.S. Army Corps of

Engineers, and the Departments of Natural Resources from both Minnesota and Wisconsin, and MPCA staff. All parties agree that formal inclusion of a load allocation for internal loading would greatly help to move forward efforts to reduce internal loading through such measures as island building, current redirection, and water level drawdowns in Pools 2, 3 and 4. We would hope that an estimate of current internal loading could be derived from model output and other existing data. However, if it turns out that some additional modeling is needed to accomplish this task, we recommend that the MPCA undertake this minor addition to the already extensive analysis through Limno-Tech, Inc.

Accordingly, we recommend the following revisions to the TMDL report:

- Chapter 3, third paragraph. Replace final sentence with the following: “Although sediment resuspension seems relatively minor when compared to upstream loads of sediment, resuspension may often cause exceedances of the 32 mg/L TSS criterion in large expanses of backwater areas such as Spring Lake and Wacouta Bay. Resuspension thus is a larger problem than might be suggested by the mass of TSS it generates compared to upstream TSS loads. Backwater and side channel areas are likely to remain vulnerable to frequent turbid conditions unless measures are taken to reduce wind and wave action and to consolidate bottom sediments.”
- 5.1.1: Replace 4th sentence of second paragraph with the following: “Scenario 17 called for reductions of 50 percent from current TSS loads from the Minnesota River, Cannon River and internal resuspension, together with 20 percent reductions from the other six sources in the model.”
- Tables 6 and 8 should be revised to include load allocations for internal loading from Lower Pool 2 to Upper Pool 4.
- Internal loading also should be added as an additional item in the summary of TMDL components provided after Table 8 in the document.

The LPLA’s second major concern is the lack of assurance that nonpoint source reductions indicated by the TMDL will be made. We commend the MPCA for the detailed discussion of implementation in the TMDL document, and the “reasonable assurance” aspect in particular. However, we believe that more measures can and should be undertaken to establish greater accountability for achieving the TMDL goals. We believe this can best be accomplished by adding more specificity to the recommendation mentioned several times in the implementation section for a Phase I goal of a 25 percent reduction in TSS by 2021.

We recommend that the following schedule for activities listed in 7.1.1.1 be included in a chart to be included in this part of the TMDL, as follows:

Milestones for achieving a 25% reduction in TSS Loads by 2021			
Date	Activity	Responsible Party	Comments
June 2012	Source Identification and Targeting	MPCA	
June 2013	25% Load-Reduction Plan for median flow	MPCA-BWSR	List priority watersheds and TSS load goals for median flow in each one.
	Hydrology & Water Quality Assessment	MPCA	
	Memorandum of Agreement to implement enforcement of state rules for shoreland/ditch buffers, and to apply Mn. R. 7050.0210 subp. 2 to severe ravine erosion, and a plan for effective targeting of Clean Water Funds.	MPCA, MDA, BWSR, DNR, Governor Dayton	Memo should include commitment of staff to compliance activities in order to
June 2014	Gap analysis of state authorities and policies, staff and budget	MPCA-BWSR	Increased implementation effort requires an increase in technical and compliance staff
June 2015	1st report of biennial adaptive management plan	MPCA	Plan should inform state and federal agencies of how policies, programs and practices are performing relative to the plan.
June 2021	4 th report of biennial adaptive management plan	MPCA	Analysis of water quality data from 2012 to 2021 should indicate whether a trend is detected.

The LPLA expects that the plan produced by June 2013 will include ultimate goals and milestones for sediment reduction in priority watersheds including the Blue Earth, Le Sueur and others known to supply disproportionate loads of sediment to the Mississippi River. The LPLA will do its utmost to rally support for a Memorandum of Agreement among key state agencies and the governor's office to provide a firm, coordinative framework for moving ahead with implementation. The gap analysis and budget developed in 2014 will provide the basis for a Clean Water Fund proposal to the Minnesota Legislature, which the LPLA with its partners will do its utmost to advance.

To conclude, the LPLA believes that this TMDL presents Minnesota with an unparalleled opportunity to act boldly to achieve major improvements in the water quality of Lake Pepin, the Mississippi River and its tributaries, especially the Minnesota River. The state has invested three million dollars in the past seven years in top quality science on sediment and water quality as affects the Mississippi River. This research built on previous research of equally high quality. As this unprecedented level of understanding is applied to implement changes to land use and river management to restore the Mississippi, much of Minnesota stands to benefit. As each watershed upstream does its part to reduce sediment loads, its streams and landscape will benefit from improvements in water quality and diversification of land use. From Mankato to Minneapolis, and from Red Wing to Wabasha, thousands of Minnesotans stand to benefit from a concerted plan to restore the Mississippi.

This high-quality TMDL, reaching across the state, has the potential to usher in a much-needed new phase of non-point source pollution reduction, and the achievement of water quality goals that until now were thought to be unattainable. The citizens of Minnesota spoke clearly in November 2008 by passing the Clean Water, Land and Legacy Amendment. They agreed to provide 25 years of funding, a majority of it for clean water. The public expects clear results in the medium-term future. Discussions surrounding the Minnesota Sustainability Framework in the Clean Water Council and elsewhere have made it clear that we will not succeed simply by pouring additional funding into the same system of governance. More accountability for non-point source pollution reductions is needed. Until the state's system of natural resource governance is modified to provide needed accountability, project-specific accountability measures such as those described above will be needed.

Contested Case Hearing Request

The Lake Pepin Legacy Alliance requests a contested case hearing on the missing allocation for internal loading of sediment in the TMDL. Internal loading of sediment from the bed of upper Lake Pepin and from shallow backwater areas of the Mississippi River from lower Pool 2 through Upper Pool 4 must be accounted for as part of the Load Allocation for the TMDL to accurately reflect sources of turbidity impairment throughout the impaired reach. Without this change, the TMDL will provide insufficient water quality protection to Upper Lake Pepin and segments of the Mississippi River downstream of Lock and Dam 3. It is feasible for the MPCA to make these two corrections with the information generated for the TMDL, using either the Limno-Tech UMR-LP model itself, or the viewer tool developed by Limno-Tech to assist in evaluation of alternatives.

A reduction of internal loading by 50 percent is part of Scenario 17, the basic scenario selected to meet water quality standards in the Mississippi River. However, this portion of the Load Allocation is missing from the TMDL. The LPLA requests that an estimation of current vs. required quantities of internal loading be estimated by the MPCA or Limno-Tech. The estimated required load should be included as a separate component of the Load Allocation.

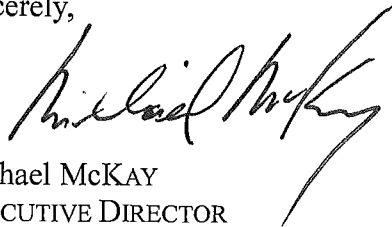
Current vs. required internal loading should be estimated for shallow backwaters where resuspension is particularly severe. These areas, largely ignored by the current TMDL, include Spring Lake, Dead Slough Lake, Goose Lake, Catherine Pass, Wacouta Bay and Upper Lake Pepin upstream of River Mile 780, the lower boundary of the impaired reach addressed by the TMDL. This will help to ensure that the turbidity impairment is addressed not only in the main stem at Lock and Dam 2 and 3, but also in shallower areas where chronic internal loading could be causing localized turbidity impairment. The TMDL should determine whether internal loading would cause excursions of the water quality standard at these locations if water quality standards are met at Lock and Dam 2 and 3. If it is determined that internal loading alone could result in exceedence of the standard at these locations, load allocations for internal loading needed to meet the standard under such conditions should be provided.

The Lake Pepin Legacy Alliance believes that if the issue of internal loading is more adequately represented by the TMDL, key partners such as the Army Corps of Engineers and state departments of natural resources and other stakeholders will be more likely to take this issue seriously, and give it the priority attention it deserves in federal restoration efforts such as the Environmental Management Program. This is not sheer speculation, but the result of consultations with these and other parties.


As Directors of the Lake Pepin Legacy Alliance, we strongly urge you to carefully consider the suggestions set forth in this letter. We sincerely hope that by responding positively, the MPCA will take advantage of this unique opportunity in state history to set the stage for successful

efforts to reduce erosion and sedimentation of the Mississippi River, and lengthen the expected life of our natural resource jewel, Lake Pepin.

Sincerely,




Michael McKAY
EXECUTIVE DIRECTOR



Arlin Albrecht
DIRECTOR



Marilyn Albrecht
DIRECTOR



Suzanne Blue
DIRECTOR



Anne Jones
DIRECTOR



Scott Jones
DIRECTOR

Cc: area legislators



May 29, 2012

Robert Finley
Minnesota Pollution Control Agency
658 Cedar Street
St. Paul, MN 55155

RE: Minnesota and South Metro Mississippi River TSS TMDLs

Dear Mr. Finley and Minnesota Pollution Control Agency staff:

Land Stewardship Project (LSP) strongly supports the goals established in the South Metro Mississippi River and Minnesota River Total Suspended Solids Total Maximum Daily Load (TMDL) proposal as presented in the draft report of April 2011. However, there are parts of the proposed TMDL implementation plan that LSP recommends be strengthened. Specifically LSP recommends that Minnesota Pollution Control Agency (MPCA):

- Expand articulation of agricultural best management practices in section 7.2.2 on perennials;
- Target funding for agriculture to outcome-based solutions; and
- Provide meaningful standards and accountability for agricultural as well as other contributors to impairments

1. Expand articulation of agricultural best management practices on perennials.

LSP recommends that language on agricultural practices 7.2.2 on page 73 be expanded to include more emphasis on perennial cropping systems

- The initial listing should include perennials such as pastures that are utilized in grass-based livestock systems with animals on the land. This can be an economically viable way of utilizing perennials if markets are available and approaches such as contract grazing used.
- It is important to include language on “planting and managing deep rooted perennial vegetation.” If vegetation is not disturbed through grazing, fire or other means, the vegetative stand and species composition will deteriorate over time.

2. Target funding for agriculture to outcome-based solutions

The implementation plan should call for approaches that lead to the best use of public dollars through the following.

LEWISTON OFFICE
180 E Main Street, Box 130
Lewiston, MN 55952
Phone: 507-523-3366

MONTEVIDEO OFFICE
301 State Road, Suite 2
Montevideo, MN 56265
Phone: 320-269-2105

TWIN CITIES OFFICE
821 East 35th Street,
Suite 200
Minneapolis, MN 55407
Phone: 612-722-6377

landstewardshipproject.org

- **Whole farm plans.** Whole farm plans should be developed by NRCS or SWCD offices to address all of the resources of concern on a farm and to provide a range of options within a framework of conservation systems. This may require additional funding for staff at these and related agencies to perform these tasks. We use the term “conservation systems” because single conservation practices, such as no-till farming, can be ineffective when applied singly. For example, while no-till may reduce soil erosion it may do little to reduce the flow of water out of tile lines. Perennials are also part of conservation systems, even if the whole farm is not in perennials. Conservation systems can be consistent with profitable operations while achieving specific conservation objectives relating to water quality and other multiple benefits such as wildlife habitat.
- **Include perennial and diversified cropping systems in conservation systems through whole farm planning and watershed analyses.** Longer crop rotations and perennials combined with manure foster growth of soil organic matter thereby increasing water storage as well as increasing transpiration. These are effective options and should be part of the conservation systems discussed with farmers and considered in watershed analyses proposed for implementation. Field-edge and watershed research shows that perennial systems targeted to sensitive areas of the landscape are highly effective in reducing flow, sediment and nutrients. Replacing row crops with perennials and diversified crop rotations on at least sensitive areas of the landscape can help achieve those aims.ⁱ Storage of above ground flow or flow through tile outlets should also include prairie strips, wetlands to filter tile line outflows as well as controlled drainage devices in the tile line.

For example Boody et al (2005), see endnote i, simulated four alternative scenarios for hypothetical landscapes in Wells Creek watershed of southeast Minnesota (16,264 ha with 61% crops) and a sub-watershed of the Chippewa River in western Minnesota (17,994 ha with 81% row crops). Each was compared to baseline conditions: (1) continuing current trends of fewer farms raising more row crops, (2) adoption of best management practices (BMPs) in row crops, (3) five-year crop rotation with strategic wetland restoration, and (4) converting steeply sloped fields to management intensive rotational grazing (RG) or perennial energy crops on slopes greater than 3% in the Minnesota River Basin study area. Under this last scenario, sediment levels in the waters of Wells Creek and the Chippewa River were predicted to be reduced by 84% and 49%, respectively. Nitrogen in the water, which can be a major pollution problem, would have declined by 74% in Wells Creek and 62% in the Chippewa River study area. These environmental benefits would have occurred even as the number of dairy or beef cattle increased from 5,427 to 12,212 in Wells Creek and 271 to 911 in the Chippewa River study areas. Additional multiple benefits were analyzed and showed similar positive trends with increasing landscape diversification. These included fish health, bird habitat, avoided sedimentation costs, greenhouse gas production, and carbon sequestration. Profitability of farmers in the watersheds would have risen as the diversity of their farming systems increased, while crop subsidies would have fallen based on prices and government payments for the year 2000.

Field-edge monitoring shows dramatic reduction of sediment loss with pasture on lower portions of steeply sloped fields and crops on contours are compared with row crops on similar slopes.ⁱⁱ

- **Support market development for perennial products** While studies in Minnesota, Iowa, Wisconsin and beyond have shown these approaches can be profitable even during times of high prices; it is clear that market development for animal products raised on grass will be needed. This is especially true in times of soaring row crop prices and risk management options available for row crop commodities. LSP recommends that the state of Minnesota invest in such market development and that a state-based ecosystem services payment be considered specifically for grass-based livestock products raised in ways that achieve water quality benefits and provide other multiple benefits. It also should not be assumed that because corn and other commodities are high priced now, they will remain so through the life of the TMDL.

3. **Provide meaningful accountability for agricultural as well as other contributors to impairments**

The Clean Water Act provides mechanisms for accountability of point source contributions to impairments. Providing accountability for nonpoint sources necessarily falls to the state of Minnesota. Measuring changed outcomes in the water, not only the number or acreage of practices, needs to be the key criteria for success. These should be set out as benchmarks to enable the public to determine progress over time. Determining the progress toward reducing impairments related to agriculture should include ongoing stream monitoring at a watershed scale and tracking progress of agricultural conservation systems on the land. Restoration of hydrological function that retains water for longer periods on and in the soil where it falls is likely a key to the success of this and other efforts to address water quality and should be tracked. Despite the challenges, this program should be developed to help spur the development of outcome-based measurements linking farm- and watershed-scales. LSP recommends this include:

- **Prioritizing, based on watershed scale monitoring, modeling and analysis, where on the landscape solutions, including perennial system, should be implemented.** Watershed-level planning will inform watershed managers and farmers about where to focus practices and systems in certain parts of the landscape. The Minnesota Natural Resources Conservation Service State Technical Committee recently approved criteria for understanding a comprehensive watershed project. We recommend those to you and they are attached.
- **Requiring accountability.** The conservation compliance requirements of the 2008 farm bill should be required as a minimum basis for consideration of entry into this program and this should be adopted by the state along with minimum state standards for soil erosion, shoreland and wetland protection as part of implementation plan. While needing improvement, the federal Conservation Stewardship Program provides a prototype for a program that builds in a minimum standard to gain entry and encourages implementation beyond that minimum level of conservation. Those farmers who promise to implement conservation beyond that minimum can receive additional public funds to go beyond the minimum.

Large agribusinesses input suppliers and processors that are making sizable profits from selling products utilized in ways that harm water quality should not be able to wholly

shift the responsibility for the impacts of those products or farming systems to individual farmers. This process should address that issue.

- **Determine How to Implement the Water Sustainability Framework.** The University of Minnesota's Water Sustainability Framework recommendations dealt with water use and availability, water quality and land-use related to water. The Framework has many thoughtful recommendations that deserve the serious consideration by the MPCA and others in state government that are pertinent to this TMDL.

Thank you for the opportunity to provide this input. The MPCA has an opportunity to lead discussion and implementation of policies that promote an ethic of stewardship toward our state's farmland and natural resources and further engage citizens to assure that the state lives up to citizen expectations for a Clean Water, Land and Legacy.

I would be happy to answer any questions you may have about our recommendations.

Sincerely,



George Boody
Executive Director

ⁱ **See the following articles for examples of research showing that perennials can reduce agricultural runoff of water, sediment, nutrients and other chemicals, benefit wildlife and be profitable for farmers.**

J. P. Reganold, D. Jackson-Smith, S. S. Batie, R. R. Harwood, J. L. Kornegay, D. Bucks, C. B. Flora, J. C. Hanson, W. A. Jury, D. Meyer, A. Schumacher, Jr., H. Sehmsdorf, C. Shennan, L. A. Thrupp, and P. Willis. **Transforming U.S. Agriculture.** *Science*, 2011; 332 (6030): 670-671 DOI: [10.1126/science.1202462](https://doi.org/10.1126/science.1202462)
Based on reviews of many studies comparing monocultural production with diversified crop production systems, the authors state that transformation in agriculture is needed to achieve environmental health and farm production goals and that policy must be changed to foster such changes.

S. Polasky, E. Nelson, D. Pennington, K. A. Johnson. 2010. The Impact of Land-Use Change on Ecosystem Services, Biodiversity and Returns to Landowners: A Case Study in the State of Minnesota. *Environ. Resource Econ.* 48:219–242
The article describes the tradeoffs in ecosystem services from diversifying row crop production.

Boody G., Vondracek B., Andow D.A., Krinke M, Westra J., Zimmerman J., Welle P. 2005. Multifunctional agriculture in the United States. *BioScience* 55:27–38
Modeling agricultural landscape diversification compared to row crop BMPs showed that diversification led to reductions in runoff significant enough to achieve local and national environmental goals, while being profitable for farmers and reducing costs for taxpayers.

ⁱⁱ **Evidence from field-edge monitoring shows perennials reduce runoff compared to row crops.**

DiGiacomo, G.C., J. Iremonger, L. Kemp, C. van Schaik, and H. Murray. 2002. Sustainable Farming Systems: Demonstrating Environmental and Economic Performance. A Minnesota Institute for Sustainable Agriculture publication. University of Minnesota. St. Paul, MN. www.misa.umn.edu
Monitoring at the field level found that pastures reduced erosion significantly even on fields with high slopes.

H. Asbjornsen, M. Helmers, M. Liebman, L. Schulte, R. Kolka, R. Cruse, M. Tomer, C. Cambardella, K. Schilling, J. Opsomer, P. Drobney, M. O,Neal, J. Neal, C. King, S Secchi, N. Grudens-Schuck, C. Herndi, D. Williams. 2011. Ecosystem function and biodiversity in watersheds with contrasting annual-perennial plant community configurations. Poster presented at National Institute of Food and Agriculture July 20, 2011 meeting, Washington, D.C.

Placing prairie strips of only 10% on contours or at the bottom of row crop fields reduces erosion by and other pollutant runoff by as much as 95%.

MSTC Watershed Selection Criteria for Future Program Rounds

1.10.12

During the summer of 2011, the Minnesota State Conservationist requested that the Watershed Subcommittee of the Minnesota State Technical Committee (MSTC) draft a set of criteria to guide decision making for future projects directed at improving the health of Minnesota's watersheds. These criteria are sufficiently general to be applied to any future watershed project and are designed to be weighted differently for different purposes/programs, especially with regard to "restoration" v. "protection." (See examples in Table 1 below). To be used for actual project reviews these criteria would be further delineated with specific indicators as needed.

Revised Overall Criteria Based Upon STC Watershed Subcommittee Discussion

1. Documentation/ identification of pollution issues
2. Local Readiness
 - a. Social capital: People/civic engagement (leaders, ability to partner/participate, difference between service delivery & administrative readiness)
 - b. Planning: Comprehensive approach to watershed planning and implementation
3. Multiple benefits: high needs and/or opportunities [OR Restoration Potential]

1. Documentation/ identification of pollution issues

- Are TMDLs done or under way? What's the current load? Is there a load allocation?
- When within the state's 10-year watershed cycle is the watershed due to be evaluated?
- Is there a comprehensive analysis of hydrological function at the landscape level?
- Is a scientific basis provided for identifying nutrient sediment/flow issues (e.g., SPARROW, APEX, HSPF, etc. and/or monitoring)?
- Are both local and downstream/cumulative impacts identified?
- What is the severity of the pollution issues at appropriate watershed scales?

2. Local Readiness

a) Social capital: People/civic engagement (e.g., leaders, ability to partner/participate, difference between service delivery & administrative readiness)

- Civic readiness including partners, stakeholders and delivery systems at the scales needed to reach goals in the watershed (e.g., HUC 12 and HUC 8);
- A strong willingness and ability to conduct the one-on-one outreach necessary to work with farmers and help them make changes ;
- Leaders, agencies and other stakeholders ready to participate and partner to be

- successful;
- A process for public involvement;
- An effective process to include the public in TMDL development or planning; and
- A plan for sharing project findings.

b.) Planning: A comprehensive approach to watershed planning and implementation is presented that includes the following (See Endnote):

- TMDL allocations or watershed goals clearly articulated;
- Baseline monitoring data;
- Documentation of baseline land uses and farming practices used in the watershed;
- An analysis of where problems are on the landscape, using conservation targeting that also informs implementation;
- Prediction of what's needed to get from the impairment to the goal through modeling of expected impacts of BMPs, including targeted landscape diversification into perennials, improved hydrological function through water retention on land or other drainage practices, alternative cropping systems, etc., targeted to priority management zones;
- Watershed planning processes: How do those plans come together to form a whole?;
- Macro and micro targeting: How many fields must be treated with a suite of practices to achieve the goal at the HUC12, HUC 8 or other watershed scale?;
- A plan for evaluation of performance that distinguishes between outcomes (such as tons of sediment reduced) and outputs (such as number of erosion control practices implemented);
- Implementation readiness among project partners and with farmers;
- Related edge-of-field monitoring projects in operation; and
- Planning, integration and adjusting predictions and implementation plans across scales and time as informed by modeling, farmer outreach, and monitoring.

3. Multiple benefits: high needs and/or opportunities [OR Restoration Potential]

- Is there a need to protect and enhance watersheds exhibiting a downward trend toward impairment?
- Is the watershed a Sentinel Watershed or candidate Sentinel Watershed?
- Have DNR's Watershed Assessment Tool, BWSR's Ecosystem Ranking Tool, or similar tools, models or indices been used to assess overall watershed health and restoration priorities?
- Are there other significant environmental goals or plans (e.g., SGCN, CRP land, MN Prairie Conservation Plan, MN Prairie Pothole Plan, MN State Wildlife Plan etc.) that pertain to the area?
- Are there new market possibilities for perennials, ecosystem services, etc?

General evaluation of a group of watersheds

Criteria may have to be selected or further delineated that is applicable to a given program (see Table 1 below for examples).

Table 1: Example uses of watershed criteria weighted to meet particular program goals

Criteria	Program Type*			
	Example specifications MRBI	Other Clean Water Programs	Habitat Programs	Other programs
Pollution Identification	Selected HUC 8 watersheds among the top X MN contributors of sediment or nutrients to Mississippi River.	Must have TMDL reduction or clean water protection goals	Second Priority	
Local readiness	Also critically important, with a range of learning needed to inform success	Very important	Very important	
Multiple Benefits	Habitat a goal of MRBI but probably less important	Second priority	Very important	

* Some analyses suggest it will take 100% reductions in at least 150 HUC 8 watersheds to achieve Gulf Hypoxia goals, which is unlikely. In other words, it will take more than only the high contributors to achieve goals.

Endnote:

A Blue Ribbon Panel reviewing the Conservation Effects Assessment Program (CEAP) called for the use of a Strategic Resource Management System with which this approach is consistent. See:

- Soil and Water Conservation Society. 2006. **Final Report from the Blue Ribbon Panel Conducting an External Review of the US Department of Agriculture Conservation Effects Assessment Project.**

http://www.swcs.org/en/publications/blue_ribbon_panel_conducting_a_review_of_ceap/

Also see: Maresch et al., 2008. Enhancing conservation on agricultural landscapes: A new direction for the Conservation Effects Assessment Project. 10.2489/jswc.63.6.198A *Journal of Soil and Water Conservation November/December 2008 vol. 63 no. 6 198A-203A* <http://www.jswconline.org/content/63/6/198A.full.pdf+html>



Minnesota Center for Environmental Advocacy

26 East Exchange Street • Suite 206 • Saint Paul, MN 55101-1667 • 651.223.5969

May 29, 2012

VIA ELECTRONIC MAIL

Robert Finley
Minnesota Pollution Control Agency
12 Civic Center Plaza, Suite 2165
Mankato, MN 56001

**Re: Draft South Metro Mississippi River Total Suspended Solids Total Maximum Daily Load (TMDL)
Comments of Minnesota Center for Environmental Advocacy**

Thank you for the opportunity to submit these comments on behalf of the Minnesota Center for Environmental Advocacy on the draft South Metro Mississippi River Total Maximum Daily Load (TMDL) for total suspended solids. MCEA is a Minnesota non-profit environmental organization whose mission is to use law, science and research to preserve and protect Minnesota's wildlife, natural resources and the health of its people. MCEA has statewide membership. MCEA has been actively involved for many years in state water quality issues, including TMDL review, implementation, and funding, and participates in a number of related policy and legal matters. MCEA has served on the Stakeholder Advisory Committee for this TMDL since 2004.

MCEA is concerned that the draft South Metro Mississippi TMDL is not ready for approval because the TMDL does not provide reasonable assurance of nonpoint source or point source implementation.

EPA requires that TMDLs developed for waters impaired by both point and nonpoint sources for which the wasteload allocation is based on an assumption that nonpoint source load reductions will occur, must include reasonable assurances that nonpoint source control measures will achieve expected load reductions in order for the TMDL to be approvable.¹ This information is necessary for EPA to determine that the TMDL, including the load and wasteload allocations, has been established at a level necessary to implement water quality standards.²

This is because, under the Clean Water Act, the only *federally* enforceable controls are those for point sources through the NPDES permitting process. In order to allocate loads among both nonpoint and point sources, "there must be reasonable assurances that nonpoint source reduction

¹ United States Environmental Protection Agency, *Guidelines for Reviewing TMDLs Under Existing Regulations Issued in 1992*, available at: <http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/final52002.cfm>.

² *Id.*

will in fact be achieved. Where there are not reasonable assurances, under the CWA, the entire load reduction must be assigned to point sources.”³

The South Metro Mississippi River TMDL requires reasonable assurance, but those assurances contained in the draft document are indefinite and wholly inadequate. As such, EPA should not approve the TMDL as drafted.

What is Reasonable Assurance?

EPA defines reasonable assurance as “a high degree of confidence that wasteload allocations and/or load allocations in TMDLs will be implemented by Federal, State or local authorities and/or voluntary action.”⁴ EPA further supplies a four part test to evaluate the reasonable assurance section of a TMDL, specifying that the nonpoint source control actions or management measures must be:

- specific to the pollutant and water body for which the TMDL is being established,
- implemented as expeditiously as practicable,
- accomplished through a reliable delivery system; and
- supported by adequate funding.⁵

The Draft TMDL Lacks Reasonable Assurance That Necessary Agricultural Controls Will Occur

Needed agricultural reductions are enormous and countered by available trend data

In order to meet water quality standards for the South Metro Mississippi, the TMDL calls for 50 percent reductions from the highly-polluted Minnesota River at median flows and 60% at high and very high flows. To achieve this, the TMDL incorporates Scenario 4 of the Minnesota River Turbidity TMDL. Scenario 4 requires changes in agricultural practices on a massive, landscape-level scale, but neither TMDL provides a roadmap or steps to achieve the changes. In fact, nearly all current agricultural land use trends for which data are available *run counter* to the changes called for in the Scenario 4, as demonstrated in the table below.

³ United States Environmental Protection Agency, *Guidance for Water Quality-Based Decisions: The TMDL Process*, Office of Water, EPA 440/4-91-001, April, 1991, Chapter Two, available at: <http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/dec2.cfm>.

⁴ *Protocol for Developing Sediment TMDLs*, U.S. EPA (1999) at 7-6.

⁵ *Reasonable Assurance for Sources for Which an NPDES Permit is Not Required*, Federal Register, Volume 65, No. 135, Thursday, July 13, 2000, Rules and Regulations, pages 43599-43600.

TMDL Requirements⁶ Versus Actual Trends for Agricultural BMPs

TMDL Assumption	Existing Practice or Trend
Increase land in perennial vegetation to 20% throughout the watershed (and to 30% in the Chippewa River watershed)	Perennial land is decreasing: 69% of expiring CRP acres were not renewed in the last four years. ⁷ As much CRP is expiring in 2012 as in the previous four years combined. ⁸ Lower CRP cap and lower conservation funding are expected in the next farm bill. Corn acres planted in Minnesota are up 13% since 2010, reaching record-high levels. ⁹
Increase conservation tillage to 75% of row crops (crop residue of $\geq 37.5\%$)	Conservation tillage rate for corn has ranged from 14% to 28% since 1989. ¹⁰ Soybean conservation tillage rate is at 60%, but soybean acres are down 6% since 2010.
Low-till or perennials on slopes $>12\%$	No data
Cover crops used on row crop lands with slopes $>3\%$ (apparently 100% of such lands)	No data for $>3\%$ slopes. Cover crops were used on 0.26% of cultivated acres in Minnesota in 2011, down from a high of 0.32% in 2010. ¹¹ If all cover crops in the state were on $>3\%$ slopes in the Minnesota River basin, they would cover 6.4% of $>3\%$ slopes.
Controlled drainage on land with slope $<1\%$	No data
Eliminating surface tile inlets	No data

⁶ Draft TMDL at 45 (incorporating Scenario 4 of the Minnesota River Turbidity TMDL); Draft Minnesota River Turbidity TMDL at 166-67.

⁷ Based on the USDA Farm Service Agency's annual Conservation Reserve Program reports and enrollment summaries from 2007-2012.

⁸ *Id.*

⁹ See "Prospective Plantings," USDA, Mar. 30, 2012, available at <http://www.usda.gov/nass/PUBS/TODAYRPT/pspl0312.pdf>; "AGRI-VIEW," USDA National Agricultural Statistics Service, July 10, 2008, available at http://www.nass.usda.gov/Statistics_by_State/Minnesota/Publications/Agri-View/2008/agvw1208.pdf.

¹⁰ See "Minnesota River Basin Statistical Trend Analysis," Water Resources Center at Minnesota State University-Mankato, Nov. 2009, at 14 ("Residue on corn fields, however, peaked at 27.2 percent in 1993").

¹¹ "Minnesota Conservation Programs State File," USDA NRCS, available at http://soils.usda.gov/survey/rca/viewer/reports/cp_mn.html; USDA 2007 Natural Resources Inventory, http://soils.usda.gov/survey/rca/viewer/reports/nri_crop_mn.html.

Despite these substantial changes, the Minnesota River Turbidity TMDL found the Minnesota River would still not meet the turbidity standard under Scenario 4. The draft Minnesota River Turbidity TMDL requires even more expansive land use changes to achieve even greater reductions (Scenario 5), but the South Metro Mississippi TMDL fails to incorporate or even identify them. These changes include:

- Conservation tillage on 75% of *all* cropped acres;¹²
- Increased total land in pasture/CRP,¹³ with a shift from grazed pasture to CRP;¹⁴
 - Assumes a 50-80% reduction in transport capacity from perennial land cover
- Load reductions from developed areas outside MS4s;¹⁵
 - 85 percent reduction to load from impervious surfaces
 - 50 – 85 percent reductions to loads from pervious surfaces
- Changes in critical shear stress within bluff reaches;¹⁶
- Reduced sediment from bluffs (sediment supply from the bluffs were reduced by 25 percent);¹⁷
- Reduced erodibility factors from ravines by 50%¹⁸ and from silt and clay in the bluff reaches (achieved by grade control to prevent headcuts and movement of the channel away from the bluff foot);¹⁹ and
- Reduced sand transport capacity in bluff reaches, in spite of model calibration establishing a higher capacity.²⁰

These additional land use and erosion assumptions run even more strongly counter to existing trends and actually defy the calibrated modeling assumptions describing sediment movement in the basin.

Elements of reasonable assurance fall short

In the draft South Metro TMDL, MPCA sets forth a list of elements comprising reasonable assurance, adopted from EPA's reasonable assurance requirements for the large-scale Chesapeake Bay TMDL, as follows:²¹

- Develop strategies...to meet TMDL allocations...;
- Evaluate existing programmatic, funding, and technical capacity to fully implement basin and watershed strategies;

¹² Draft Minnesota River Turbidity TMDL at 166.

¹³ *Id.* at 171.

¹⁴ *Id.* at 173-74; Minnesota River Basin Turbidity TMDL Scenario Report, TetraTech, Dec. 8, 2009, at 56, 57 (“this land use category primarily represents CRP”).

¹⁵ *Id.* at 55-56.

¹⁶ *Id.* at 46; Draft Minnesota River Turbidity TMDL at 167.

¹⁷ Draft Minnesota River Turbidity TMDL at 173.

¹⁸ *Id.* at 174.

¹⁹ Minnesota River Basin Turbidity TMDL Scenario Report at 56.

²⁰ *Id.* at 56.

²¹ Draft TMDL at 82.

- Identify gaps in current programs, funding and local capacity to achieve the needed controls;
- Commit to systematically fill gaps and build program capacity;
- Agree to meet specific, iterative, short term milestones;
- Demonstrate increased implementation and/or pollutant reductions;
- Commit to track/monitor/assess and report progress at set regular times...; and
- Accept contingency requirements if certain milestones are not on schedule.

Unfortunately, the Minnesota Pollution Control Agency merely supplies this list of generic components of reasonable assurance, and does not proceed to state the strategies to be implemented by whom, identify gaps, provide milestones, timelines or viable contingency plans if they are not met, or provide the means by which to measure and report progress on BMP adoption and achievement of water quality goals. To meet the approvability standards for reasonable assurance, the final TMDL must fill in these blanks.

No viable contingency plan

First, the MPCA releases the point sources from any further requirements should unspecified, time-indefinite milestones not be met: “Contingency requirements for this TMDL will not include ratcheting down further on point sources by reducing their waste load allocations, be they permitted MS4s or permitted wastewater treatment facilities.”²² Although MCEA recognizes that MS4s cannot meet the sediment reductions required by the draft TMDL alone, we note that this blanket release is contrary to EPA’s requirements: “Where there are not reasonable assurances, under the CWA, the entire load reduction must be assigned to point sources.”²³

Next, the MPCA presents a weak brew of “contingency requirements” focusing on nonpoint sources should unspecified, time-indefinite milestones not be met. These are comprised chiefly of possibly reviewing local government implementation of and compliance with longstanding state laws requiring shoreland and ditch buffers, and prohibiting nuisance nonpoint pollution and excessive soil loss (this last law actually only “encourages” local units to adopt excessive soil loss prohibition ordinances).²⁴

The inadequacy of such an approach is already known to the MPCA. As the TMDL itself notes, even achieving full compliance with the existing nonpoint source requirements such as shoreland buffers will not achieve water quality standards.²⁵ While enforcement of existing law would be useful (and long overdue) in the short-term, it simply does not add up to broad adoption of perennials, lower peak flows, reduced bluff slumping, and near-universal conservation tillage.

²² TMDL at 82.

²³ United States Environmental Protection Agency, *Guidance for Water Quality-Based Decisions: The TMDL Process*, Office of Water, EPA 440/4-91-001, April, 1991, Chapter Two, available at: http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/decisions_index.cfm.

²⁴ TMDL at 83.

²⁵ TMDL at 75.

The steps MPCA suggests do not come close to providing reasonable assurances that the nonpoint source load allocation will be met.

MPCA has broad, but unused, authority to address agricultural pollution

Interestingly, this hapless “reasonable assurance” section ignores MPCA’s broad statutory duty and authority to prohibit and prevent water pollution from nonpoint sources.

The agency is hereby given and charged with the following powers and duties:
... (e) to adopt, issue, reissue, modify, deny, or revoke, enter into or enforce reasonable orders, permits, variances, standards, rules, schedules of compliance, and stipulation agreements, under such conditions as it may prescribe, in order to prevent, control or abate water pollution, or for the installation or operation of disposal systems or parts thereof, or for other equipment and facilities:

(1) requiring the discontinuance of the discharge of sewage, industrial waste or other wastes into any waters of the state resulting in pollution in excess of the applicable pollution standard established under this chapter.²⁶

Minn. Stat. Chapter 115.03, subd. 1.

Not only does the draft TMDL fail to address how MPCA would exercise its powers to restrict pollution from nonpoint sources, the agency is actively denying that it has the above cited duty and authority:

The new head of the Minnesota Pollution Control Agency on Wednesday deflected criticism of draft standards for cleaning up the Mississippi and Minnesota rivers, saying *the agency can't compel farmers to cut the runoff that plays a big part in the problem.*

In an interview with The Associated Press, John Linc Stine said his agency is developing a voluntary program to encourage farmers to help reduce sediment that muddies the rivers and threatens to transform Lake Pepin — a scenic wide spot on the Mississippi — into a bog in coming years. *He acknowledged that farmers who don't want to clean up their runoff won't have to.*²⁷ (Emphases added.)

Adequacy of funding

The TMDL fails to demonstrate that the funding available will be sufficient to accomplish the load reductions. The TMDL identifies the Clean Water, Land, and Legacy Amendment as the funding source to solve the problems identified in the TMDL. This funding alone will not be enough to achieve the necessary reductions:

²⁶ Minn. Stat. Chapter 115.03, subd. 1.

²⁷ Minn. pollution watchdog says voluntary efforts by farmers can help clean rivers, Steve Karnowski, Associated Press, May 23, 2012; available at:

<http://www.therepublic.com/view/story/a7fb7056dc9e466389d472c62e156f6b/MN--AP-Interview-Stine/>

- Decades of federal conservation funding through the Natural Resource Conservation Service, including \$1.85 billion from 1995-2010,²⁸ yielded the current level of impairment;
- An MPCA report in 2004 estimated that the cost to clean up the nonpoint source contribution to the state's impaired waters could range from \$600 million to \$3 billion.²⁹ Since that time, the impaired waters list has grown by 1,659 impairments;
- The Legislature has appropriated about \$60-70 million of Clean Water, Land and Legacy Amendment proceeds per biennium for nonpoint source protection and restoration using the Clean Water, Land, and Legacy Amendment.³⁰ MCEA's evaluation of this funding found that it was not consistently spent on projects that are well-targeted to reduce nonpoint source pollution.³¹

It is obvious that decades of voluntary federal, state and local programs backed by billions of dollars in public subsidies have not come close to meeting the agricultural sector load reduction obligations incorporated in the draft South Metro TMDL. It is equally obvious that continued reliance on the exact same approach will not work going forward.

A Programmatic Gap Analysis Should Be Conducted Immediately

To rectify the omissions in the draft TMDL and meet its obligation to provide reasonable assurance that the agricultural reductions will be achieved, the MPCA should immediately:

- Estimate the extent of nonpoint source reductions achievable through full compliance with existing law regarding shoreland and ditch buffers, soil loss ordinances, animal feeding operations, and agricultural nuisance;
- Compare the findings from the above with the modeled agricultural practice inputs required to meet water quality standards from Scenario 5 from the draft Minnesota River TMDL (for the Minnesota River Basin portion of the Lake Pepin watershed) and Scenario 17 from the draft South Metro Mississippi TMDL (for the remainder of the Lake Pepin watershed);
- Calculate the difference between steps one and two;
- Provide near-term (1-2 years milestones) for nonpoint source data collection, water quality sampling, and public reporting of progress;
- Outline strategies by which the remaining reductions will be achieved, including steps to be taken in the one-year implementation planning process to:
 - Evaluate the adequacy of MPCA's legal authorities;
 - Evaluate the load reductions likely achievable through voluntary, publicly-subsidized Federal, State and local programs;

²⁸ "2011 Farm Subsidy Database," Environmental Working Group, available at <http://farm.ewg.org/region.php?fips=27000>.

²⁹ Minnesota Pollution Control Agency, *Minnesota's Impaired Waters, Report to the Legislature* (March 2003), at ii.

³⁰ See "Biennial Report of the Clean Water Council," Clean Water Council, Dec. 2010, at 12.

³¹ "Clean Water Grants for Nonpoint Source Protection and Restoration by the Board of Water and Soil Resources Fiscal Years 2007-2010," MCEA, Jan. 2011.

- Evaluate the necessity of regulatory controls for agricultural sources to meet water quality standards
- Develop methods to more aggressively target funding to specific locations, including identification and prioritization of:
 - bluffs in need of toe armoring or other stabilization;
 - ravines subject to headcutting in need of drop structures;
 - streambanks subject to slumping during high-flow events;
 - areas in need of perennial cover;
 - insuring compliance for the 28 percent of ditch miles where buffers are required but lacking;³²
 - ditch systems that contribute most to impairments based on field review and water quality monitoring and modeling;
 - areas where 1-rod buffers alone will not achieve desired sediment reduction benefits and further controls such as side inlets controls are needed;
 - a systematic evaluation of the condition and use of legal drainage systems and determination of whether actions are needed to help achieve necessary load reductions (e.g., improvement, abandonment, or repair);
 - a systematic evaluation of the condition and use of road ditches for agricultural drainage and determination of whether actions are needed to help achieve necessary load reductions (right-of-way enforcement); and
 - evaluation of tile line permitting and controlled drainage.

The above elements and near-term processes through which they will be more fully addressed should be written into a new reasonable assurance section for nonpoint sources prior to MPCA adoption of the draft TMDL and submittal to USEPA.

The Draft TMDL Lacks Reasonable Assurance That Necessary Point Source Controls Will Occur

The fact that a TMDL's wasteload allocation must be incorporated into NPDES permits for point sources ordinarily provides sufficient reasonable assurance that this load reduction will occur. However, this often is not the case in Minnesota due to infirmities in MPCA's implementation of wasteload allocations through a general MS4 NPDES permit.

The draft South Metro TMDL assigns an aggregate wasteload allocation to the 217 MS4s in the Lake Pepin watershed.³³ Nearly all MS4s in Minnesota are covered under a General NPDES permit, which states:³⁴

³² *Public Drainage Ditch Buffer Study*, Minnesota Board of Water and Soil Resources, February 2006, at 2, available at <http://www.bwsr.state.mn.us/aboutbwsr/publications/bufferstudyweb.pdf>.

³³ TMDL at 57.

³⁴ Permit No. MNR040000 at 7.

If a USEPA-approved **TMDL(s)** has been developed, you must review the adequacy of your Storm Water Pollution Prevention Program to meet the **TMDL's Waste Load Allocation** set for storm water sources. If the **Storm Water Pollution Prevention Program** is not meeting the applicable requirements, schedules and objectives of the **TMDL**, you must modify your **Storm Water Pollution Prevention Program**, as appropriate, within 18 months after the TMDL is approved. (Emphases in text.)

Ostensibly, this permit provision is intended to meet the requirement of federal regulation which mandates that effluent limits in NPDES permits must be consistent with the requirements of a wasteload allocation in an EPA-approved TMDL.³⁵ However, it is impossible for an MS4 to ascertain the adequacy of its SWPPP when it does not have an individual wasteload allocation to provide a target.

MPCA is not currently overseeing MS4 implementation of approved wasteload allocations pursuant to approved TMDLs in a consistent or meaningful way. The MS4 general permit contains no mechanism to translate the aggregated wasteload allocation into permit limits for the 217 MS4s in the watershed. Absent that apportionment, there can be no enforceable permit limit to provide assurance of reductions.

Even if individual WLAs were assigned, it is unclear how the agency will ensure their achievement. MPCA has acknowledged that there is no requirement to track and report pollutant load reductions under the current permit.³⁶ As a result, neither the public nor MPCA knows whether the aggregated WLAs from the dozens of prior TMDLs have been implemented.

MCEA requests that MPCA amend the draft TMDL to provide clearer direction on how the aggregate wasteload allocation will be apportioned among the 217 MS4s, when compliance will be required, and how implementation will be tracked by MPCA and reported to the public.

³⁵ 40 C.F.R. §122.44(d)(1)(vii)(B).

³⁶ Email from Dale Thompson, MPCA Municipal Stormwater Supervisor, to Kris Sigford, MCEA Water Quality Director, Mar. 24, 2011.

Conclusion

The draft TMDL fails to provide reasonable assurance that either the load allocation for nonpoint sources or the wasteload allocation for point sources will be achieved such that water quality standards for total suspended solids will be met. Without reasonable assurance, the TMDL cannot be approved by EPA. MCEA recommends that the TMDL be amended to address each of the deficiencies identified above prior to adoption and submittal to USEPA.

Thank you for the opportunity to comment.

Sincerely,



Kris Sigford
Water Quality Director



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MEMORANDUM

Date: February 22, 2013
To: Robert Finley, MPCA
From: Dan Kalmon, MWMO
Re: MWMO Staff Comments: South Metro Mississippi Total Suspended Solids TMDL

We appreciate the opportunity to comment on this Draft of the South Metro Mississippi Total Suspended Solids TMDL. The Mississippi Watershed Management Organization with its members-the cities of Minneapolis, Saint Paul, Lauderdale, Saint Anthony Village, Fridley, Columbia Heights and Hilltop, and the Minneapolis Park and Recreation Board is seeking an equitable standard of treatment required by the TMDL for urban and agricultural areas and an effective standard that will achieve the larger water quality goals of the TMDL for the region.

Comments:

- 1) Is the purpose of this report to propose a draft TMDL to set a performance standard or to provide the basis for an implementation plan for the South Metro Mississippi Total Suspended Solids TMDL process?
- 2) It is difficult to ascertain where this draft TMDL report falls within the timeline of the many planning processes discussed within it. Please provide a big picture timeline for the TMDL process starting with this draft TMDL report and covering additional TMDL implementation plans, implementation activities, monitoring, modeling of implementation activities, proof of TSS reductions achieved by MS4s, and delisting of waters. Specific dates are not being requested just a relative timeline to better clarify what stage the current process is at.
- 3) The draft does not adequately address equity of cost to achieve the TMDL results. To help offset relative project cost differences between urban and rural areas the MPCA needs to develop a mechanism for trading or banking TSS credits outside of watersheds and cities boundaries. Building a framework for this type of activity at the statewide scale which could be implemented at a local level would ease economic strain on fully-developed urban areas that typically have much higher land costs and extensive soil and ground water contamination issues. This is the flexibility urban jurisdictions need to significantly reduce project costs and achieved TSS reductions in a timely manner. Any framework developed would need to limit trading to situations where water quality conditions are not getting worse within the city as a result of no further treatment in it in order to remain consistent with non-degradation standards.

- 4) Overlapping boundaries of multiple MS4's in the metropolitan area: The MPCA needs to provide specific guidance on how to calculate categorical credits for accumulated load reductions when a BMP is located within multiple MS4s. For example, if a single BMP is located within a watershed, county, MNDOT, university, and city boundary who can take credit for it? We recommend using only municipal MS4 or watershed boundaries for calculating credits for load reductions achieved while requiring MS4's within this boundary to demonstrate the proportion of reduction achieved within each of their systems. Without this clarification there could be double accounting taken for a single BMP installed or double, excess treatment over geographic areas.
- 5) Small cities did not have MS4 requirements until 2002, so what baseline loading data will they be able to use to determine retroactive benefits associated with BMP installed to-date? Will there be some standard criteria to be used for modeling baseline loading conditions in these cases?
- 6) It is doubtful that voluntary compliance is going to achieve a 50% reduction from the Minnesota River. How does MPCA expect to ensure compliance with the TMDL implementation plan? Will MPCA seek legislation or other regulatory controls and policies needed to attain the TMDL implementation plans.
- 7) Page 56: Flexibility in modifying an individual MS4's TMDL: If an entity has robust outfall monitoring data that demonstrates the 25 percent reduction estimate is too high or low, then there should be an option to adjust the reduction percentage to reflect the actual baseline data. MS4 sediment contributions were estimated rather than determined with current data. Can individual MS4's use current flow weighted and grab sample data collected to prove actual sediment contributions (referring to page 56 estimation of sediment export & page 27 Metroshed's as a TSS sink)?
- 8) Pages 51-52: Tables 7 and 8. What are the numeric values for the 5 flow conditions (cfs)?
- 9) Page 57: MS4s contribute 5.8% of average annual TSS load and are required to reduce load by 25% from 2002 baseline. MN River contributes 74% and only required to reduce by 50% for average flow conditions. Upper Mississippi contributes 16% (but well below the standard) and expected to reduce by 20%. This seems to be inequitable and implies that MS4s are being asked to reduce by a larger percentage based on actual contribution simply because they are easier to regulate through NPDES permits. What is the MPCA's reasoning for this distribution of clean up responsibilities?
- 10) Pages 48-49: Two statements below (found on pages 48 & 49) seem inconsistent: Can MPCA clarify the MS4 requirement to exempt MS4s along the St Croix River if the South Metro Mississippi TSS TMDL requirement does not pertain to them.
 - a. Page 48 "Because the St Croix River contributes very low TSS levels to the Mississippi, it is not required to reduce its TSS load from current levels to meet the South Metro Mississippi TSS TMDL. The

eutrophication TMDL for Lake St. Croix thus is *more restrictive* than the South Metro Mississippi TSS TMDL.”

- b. Page 49 “MS4s: Regardless of their location in the South Metro Mississippi watershed, MS4 reductions are 25 percent in TSS loads from a baseline of 2002 loads.”
- 11) Page 28: Include percent area the Metroshed makes up of the whole study area. This was included for other areas but not the Metroshed. Also include the percent of sediment contributed from the Metroshed.
- 12) Page 47: Why is the Upper Mississippi River required to reduce its load when it is already achieving the standard? Page 20 says the season average is 20-25 mg/L TSS.
- 13) Page 74: The monitoring/planning cycle should be based on priority problem watersheds, not MPCA’s current schedule. If the Blue Earth River is one of the biggest problem areas, it should be addressed first because a reduction there will make the biggest immediate impact.