Response to Comments on *'South Metro Mississippi River Total Suspended Solids Total Maximum Daily Load'*

October 2015

Minnesota Pollution Control Agency

Introduction

This document contains responses to comments received on the draft South Metro Mississippi River Total Suspended Solids Total Maximum Daily Load (TMDL) in response to the public notice from February 27, 2012, through May 29, 2012.

The Minnesota Pollution Control Agency (MPCA) received over 400 written submittals in the form of letters, e-mails and other formats that ranged from very brief general statements to extensively detailed comments over multiple pages. Many submittals contained identical or very similar content to other submittals. Among the comments received were 28 requests (some with multiple signatories) for a contested case hearing and one request to speak before the MPCA Board prior to submittal of the TMDL to the Environmental Protection Agency (EPA).

The comments received are available at the project webpage at, http://www.pca.state.mn.us/ktqh98b, and are grouped by stakeholder category. In order to respond in an efficient manner we have sorted the comments as shown in the table below. Duplicate or similar comment submittals are aggregated into one row. Submittals containing additional unique comments that warranted a separate response are separately listed. Comments are generally not transcribed in this document and instead are paraphrased (with the "comment letter code" from the table below to the right of the comment for reference). Each is then followed with the MPCA's response.

Stakeholder Category (on webpage)	Commenter(s)	Comment Letter Code
Agriculture	Minnesota Corn Growers Association and 15 other organizations and individuals	01
Government units	Capitol Region Watershed District	02
	Lower Minnesota River Watershed District*	03
	Minnesota Department of Natural Resources	04
	Minnesota Department of Transportation	05
	Mississippi Watershed Management Organization	06
	Nine Mile Creek Watershed District	07
	North Cass Water Resource District	08
	South Washington Watershed District	09
	US Department of the Interior—Fish And Wildlife Service	10
	US Department of the Interior—National Park Service	11
	Wisconsin Department of Natural Resources (3 submittals)	12
Individuals	Minnesota Environmental Action Network form letter from 300+ individuals	13
	Jack Enblom	14
	Mike Denney	15
	Tom Dimond	16
	Gregory Eggers	17
	Les Everett	18
	Steve Henry	19
	Gary Joachim	20
	Georgia Joachim	21
	Norman Senjem	22
	Other individuals (general or duplicated comments)	23
Minnesota Soybean Growers	Minnesota Soybean Growers Associations plus five duplicate letters with multiple signatories*	24
Municipalities	Minnesota Cities Stormwater Coalition plus Minnesota Inter-County Association and 21 cities with duplicate or related comment submittals*	25
	Bloomington	26
	Bolton & Menk letters for 12 communities plus Empire Township letter	27
	League of Minnesota Cities and 10 other organizations and cities	28
	Metropolitan Council	29
	Minnesota Environmental Science and Economic Review Board	30
	Minneapolis*	31
	Monticello	32
	Saint Paul	33
	Scott County Community Services Division	34
	Woodbury	35
Non-profit groups	Cannon River Watershed Partnership	36
	Friends of the Mississippi River	37
	Lake Pepin Legacy Alliance*	38
	Land Stewardship Project	39
	Minnesota Center for Environmental Advocacy	40
Tribal organizations	Mendota Mdewakanton Dakota Community	41

*Indicates contested case hearing request included

Responses to comments are organized in this document by issue area, as follows:

A. Urban stormwater interests and related comments
B. Agricultural interests and related comments
C. Wastewater and related comments
D. Load allocation methodology comments
E. Reasonable assurance comments
F. Implementation-related comments
G. General comments

The MPCA has carefully considered the comments received and, thus, has made many changes to the TMDL report. As a result of changes made, several of the contested case hearing requests as well as the request to address the MPCA Board, have been withdrawn. (Note: the latter was done prior to the elimination of the MPCA Board by the Minnesota Legislature.) Those contested case hearing requests that were not withdrawn are being denied based on our evaluation that the issues raised did not meet the criteria for a contested case hearing. Separate MPCA written documentation—a Findings of Fact—addresses those denials.

The more significant changes to the TMDL are summarized below. Other minor changes, fixes and clarifications were made as well.

- A summary of more recent research conducted to compare the effects of climate vs. land use on stream-channel erosion and sediment loading.
- Inclusion of an internal loading allocation in the TMDL tables.
- Separation of Minnesota's and Wisconsin's allocations in the TMDL tables.
- Updated land cover figures and statistics based on 2011 NLCD data.
- A revised summary of other sediment-related TMDLs within the drainage area. Most significant is a finding that projected load reductions from the approved Lower Crow River turbidity TMDL can account for the full 20% reduction called for within the Upper Mississippi River Basin.
- Revisions to the methodology for waste load allocations and reductions for Municipal Separate Storm Sewer Systems (MS4) stormwater. Notable changes include removing the across-the-board 25% reduction for all MS4s regardless of location and removing the baseline year. The need for a reduction is now based on an MS4's location within the drainage area and its own evaluation of its loading relative to the target areal loading used to derive the waste load allocation. Also, the industrial/construction stormwater wasteload allocation was revised (had been miscalculated in the draft).
- Updates to both the list of regulated wastewater facilities and associated waste load allocations (minor changes) and the list of regulated MS4s (updated to reflect additional MS4s as the result of the 2010 U.S. Census population data and urbanized area)
- A revision to the Implementation Strategy section to align it with the newly drafted report entitled "Sediment Reduction Strategy for the Minnesota River Basin and South Metro Mississippi River" (hereinafter, "Sediment Strategy"). That document is available at: http://www.pca.state.mn.us/ark8qrf
- Revisions to the estimated costs for implementation.

A. Urban Stormwater Interests and Related Comments

The methodology for determining the waste load allocations (WLAs) and reductions for MS4s has been revised. Notable changes include removing the set 25% reduction for all MS4s regardless of location. The need for a reduction is now based on an MS4's location within the drainage area and its own evaluation of its loading relative to the target areal loading used to derive the waste load allocation. See section 6.1.2 of the TMDL report for further explanation.

1. TSS above Lock & Dam 1 meet or exceed TMDL target	25, 31
Response: The revision to the methodology for MS4 WLAs now means that except for MS4s in the Crow River Watershed, MS4s above Lock & Dam 1 require no reduction for this TMDL. This is based on an analysis of reduction estimates pertaining to the Lower Crow River TMDL (see section 5.1.2).	

2. Boundaries for MS4 conveyance systems are inaccurate	25
Response: The level of rigor used with the allocation methodology is appropriate given the large geographic scale of this project and given the methodologies to be used to evaluate compliance. Also, the revised TMDL relates the MS4 allocation on an average mass per acre value "for their MS4-regulated area". Thus, determination of the exact boundaries can be done by the individual MS4s themselves.	

3. Particle size in stormwater runoff not considered	07, 25
Response: Particle-size evaluation is beyond the technical rigor of this TMDL. (Even for finer scale TMDLs this analysis has not been done.) To do so it would be necessary to estimate what heavier fraction is captured by Best Management Practices (BMPs) or is dropped out in streams, which are very different in terms of compliance with a WLA. This TMDL and its associated allocations are based on total suspended solids (TSS) and MS4s should determine their discharge based on that.	

4. Not using Minnesota River turbidity TMDL as input boundary; need to complete upstream "nested" TMDLs and/or fully account for load reductions	25
Response: While we did not attempt a rigorous accounting of upstream load reductions much greater consideration of upstream load reductions has been done in the revised TMDL. This, together with other changes, significantly affects (lessens) the obligations of many MS4s in terms of needed reductions.	

5. Improperly setting WLAs to flow conditions	25
Response: This TMDL, like many river TMDLs, includes tables that provide the balanced TMDL equations for a range of river conditions. However, the report emphasizes in multiple ways that achievement of the water quality standards is based on achieving a needed *average* loading. Also, in describing the daily TMDL allocation table the revised text acknowledges the points you raise regarding rainfall not equating to river flow.	

6. Improperly setting baseline year to 2002; unclear how to apply	06, 25, 31
Response: The revised TMDL no longer provides a baseline year. Compliance evaluation, where needed, shall now focus on what MS4s are estimating their loading to be, rather than reducing from some baseline year or condition.	

7. Not providing cost estimates for all sectors and sources; insufficient info for high MS4 cost; high cost is unreasonable	25, 31
Response: We believe the revised approach for MS4 WLAS and associated reductions largely addresses the concerns behind this comment. The cost of implementation discussion in the TMDL has been revised accordingly, though detail remains limited.	

8. Not providing model calibration or sensitivity analysis for urban discharges	07, 25
Response: We expect that the concern behind this comment is likely substantially addressed given revisions to the WLA methodology. Regardless, we believe the methodology used for MS4s was at an appropriate level of rigor given the extremely large scale at which this TMDL was done.	

9. 25% reduction for all MS4s arbitrary, ineffective, inequitable (given negligible contribution) and does not acknowledge variable loading among MS4s (including noncontributing--flow, TSS--areas)	03, 07, 09, 25, 31
Response: We believe the changes made to the MS4 WLA allocation methodology address this comment.	

10. Insufficient info and commitment to trading	25
Response: The changes made to the MS4 WLA allocation methodology revised approach may make this less of a need for MS4s. However, trading (particularly between WLA and LA) is something that will need to be developed program-wide, rather than within the confines of this TMDL. If and when that occurs it may have application to this TMDL.	

11. Not accounting for benefits of high-density development	25, 31
Response: Like practically all TMDLs created in the US the allocation methodology in this project is based on areal loading, not per capita loading.	

12. Should defer MS4 reductions till nonpoint source reductions documented and confirmed	25
Response: Permit compliance (including pace) is evaluated and overseen by the individual permit programs within the MPCA.	

13. Report fails to acknowledge stormwater BMPS not effective under high and very high flows	25
Response: First, as you have pointed out and the report now acknowledges, high flows are not synonymous with large storms. Beyond that we do not feel a TMDL report is an appropriate vehicle to evaluate BMPs and associated reduction efficiencies by storm size.	

14. Given large scale of area MPCA should seek proportional federal implementation funding	25
Response: Seeking of funds is a post-TMDL activity, albeit an important one. We are not in a position at this point to lay out any MPCA-led initiatives on this front.	

15. Revise or postpone TMDL till antidegradation rule completed	26
Response: This TMDL has taken long enough and we do not wish to further delay it.	

16. Faulty assumption that current MS4 loading is equal; use of literature values is inappropriate; use monitoring data where available	07, 35
Response: The revised methodology focuses more on allowable loads (WLAs) than reductions. Determining existing loads is largely left to MS4s to determine their compliance with WLAs. It would be fully appropriate at that stage to utilize available monitoring data. We believe for the large scale that this TMDL was done that use of established values reported in the literature is appropriate and resulted in a fair overall allocation.	

17. Faulty assumption that MS4 loading primarily driven by land use and are spatially distributed	07
Response: Please see response to comment #16.	

18. Discrepancy between TSS export coefficients used for current load estimate and monitoring data (by Met Council) loading used in modeling; request monitoring data be used for both	03, 07, 29, 34
Response: The revised methodology focuses more on development of the allowable loads. The TSS export coefficients used for any load estimates that are referred to are based on stream pour points. The MS4 Phase 2 General Permit applies to discharges from regulated MS4s (i.e., end of pipe/conveyance), not discharges at stream pour points.	

19. Figure 19 shows compliance for some MS4s (e.g., those in Nine Mile Creek Watershed)	07
Response: Please see response to comment #18.	

20. Request for more specificity for demonstrating MS4 WLA compliance	02, 35
Response: The MPCA has developed guidance for addressing TMDL requirements in MS4 General Permit applications and Stormwater Pollution Prevention Program documents (http://www.pca.state.mn.us/index.php/view-document.html?gid=19465). In addition, the MPCA has developed guidance to assist permittees with meeting reporting requirements in the permit. This guidance includes detailed discussion of appropriate models and other approaches for estimating load reductions associated with implementation of stormwater BMPs (http://www.pca.state.mn.us/sbiza7c).	

21. Need clarification in report regarding "Upper Mississippi" and "metroshed"; unclear characterization of metro area loading	31, 33
Response: We have attempted to clarify the text where there may have been confusion.	

22. Request MS4 impervious acreage of all MS4s in Table 3 broken down, at least by tributary; clarify calculations in Table 3 regarding "MS4 Impervious Surfaces" and "MS4 Area (impervious and pervious areas)"; se of the terms "developed" and "impervious" land confusing	31
Response: This table (now renumbered as Table 4) is only intended as general descriptive background information and was not used for the TMDL calculations later in the report. Thus, we feel that it would add very little to break the information down further.	

23. Clarify calculations for four bullets on page 56	31
Response: These calculations are no longer a part of the revised MS4 WLA.	

24. Clarify/reconcile aggregate WLAs for MS4s with report language implying MS4s will each have a numeric WLA in their permit	02
Response: This section of the TMDL has been revised. Determination of compliance with WLAs is done by the appropriate MPCA permit program (Stormwater, in this case) and Phase II MS4s will not be subject to the regulatory requirements of this TMDL until the next permit. The stormwater program's guidance outlines crediting/accounting for a permittee's performance with respect to a categorical WLA.	

25. Need guidance on who takes credit where MS4 jurisdictions overlap	06
Response: This issue is addressed in the guidance being developed for meeting permit reporting requirements (see Comment 20). In general, permittees should claim credit for any applicable BMP that is achieving reductions from their MS4 or from any applicable BMP they helped implement (e.g., contributed funding toward the BMP). Permittees will be required, in their Annual Report, to identify the party that owns BMPs being claimed for credit. NOTE: an applicable BMP is a BMP that meets the baseline condition specified in a given TMDL report.	

26. Why weren't Wright Co. and Monticello Twp included in this TMDL?	32
Response: Neither of these entities meets the criteria used by the MPCA Stormwater program for regulated MS4 status. Therefore they are part of the load allocation.	

27. Need to provide additional allocation transfer language	05
Response: We have provided this in section 6.5.	

28. Need to reconcile project land area (both 28 and 26 M acres cited)	33
Response: The 26 million figure refers to acreage in Minnesota; the 28+ million figure includes Wisconsin, Iowa and South Dakota.	

29. Revise Figure 10 (color coding is unclear) and Table 2 in regards to the Battle Creek subwatershed TSS concentration	35
Response: The color for Battle Creek is yellow but appears darker because it overlies a light gray background. Its omission from Table 2 (now renumbered as Table 3) has been fixed.	

30. Provide stakeholders and commenters the appropriate GIS information to recreate Figure 15.	35
Response: This has been provided to you via e-mail; others may request this from the MPCA project contact.	

31. The loading assumptions of the South Metro Mississippi TMDL should be recalculated. The modeling of urban flows and discharges may be significantly flawed.	35
Response: The "Metroshed" was developed after the UMR-LP model was completed. Some areas of the Metroshed were specifically represented as individual tributaries to the model domain. Other areas of the Metroshed were within tributaries to the model domain such as the Minnesota River. Adjustments were made by the MPCA staff to allocations based on the boundaries of the Metroshed from existing model outputs. The MPCA staff is confident that existing modeling and stormwater assumptions, including more recent revisions, were more than sufficient to complete a robust TMDL.	

32. What is the definition of the "regulated MS4 boundaries"? Some MS4s have significant areas that have never drained to receiving waters outside the cities (landlocked areas). How are these areas addressed in relation to the MS4 boundaries in the TMDL?	35
Response: The TMDL basically used a surrogate of developed acreage to approximate the area currently served or to be served in the future by stormwater conveyances in order to provide waste load allocations. Compliance with the wasteload allocation, including what areas within your system that should be assessed, is administered and evaluated by the Stormwater program.	

33. Provide a definition, including timeline, for "new development" and "newly developed areas."	35
Response: New and newly developed simply mean areas where stormwater conveyances have been extended to (thus increasing the MS4-regulated area). The timing of ownership or operation of a conveyance by an MS4 entity (and, thus, how that pertains to compliance demonstration) is addressed by the stormwater permit and related Stormwater program guidance.	

B. Agricultural Interests and Related Comments

34. 10% natural background is invalid (too low)	01, 24
Response: This comment is addressed in the Findings of Fact.	

35. 1830 point of reference does not account for climate and ecosystem dynamics	24
Response: This comment is addressed in the Findings of Fact.	

36. Question sedimentation rate changes	24
Response: This comment is addressed in the Findings of Fact.	

37. Bluff and bank erosion are natural process that have always been active in MN R; therefore, part of natural background	24
Response: This comment is addressed in the Findings of Fact.	

38. Report does not divide up load allocation and provides no measurable and distinguishable evidence that nonpoint is not natural background	24
Response: This comment is addressed in the Findings of Fact.	

39. TMDL study does not account for components of turbidity, specifically VSS	20, 24
Response: This comment is addressed in the Findings of Fact.	

40. Tile drainage leads to less soil erosion in the field (but some erosion does occur at outlets). Do not need more regulations; just education.	08
Response: While it is likely true that tile drainage leads to less field erosion for row-cropped land there is conclusive evidence (Schottler et al. 2013) that tile drainage in many watersheds contributes to more in-channel erosion by increasing stream flow in the spring.	

41. Locks and dams may have benefitted submerged aquatic vegetation; delete inflammatory adjective "drastically" from text with regard to effect on meanders, backwater wetlands.	01
Response: We have changed “drastically” to “significantly” in the cited portion of section 2.0.	

42. Comments/questions regarding site-specific standard report; application of a standard to a given reach.	01
Response: The site specific standard is based on average of TSS concentrations of Lock and Dam 2 and 3.The standard did consider the variable morphology of Pools 2 and 3 and the vegetation growth potential of these pools. MPCA does not intend to develop TSS standards for multiple reaches in Pool 2. The comment is focusing on the upper portion of Pool 2 that has limited potential to settle sediment. Given the large load of sediment entering Pool 2, any “re-connected” depositional areas in upper Pool 2 would likely be overwhelmed in a short amount of time.	

43. Habitat restoration opportunities and locks/dams	01
Response: The cited language will be changing based on a separate comment (see comment #101). We’re otherwise not seeing the value to debate your statements about the hypothetical situation of no locks & dams.	

44. How does the maintenance of the shipping channel affect sediment movement through the river system?	01
Response: The MPCA assumed that shipping would continue on the river system. Resuspension from barges was examined and determined to be a minor source of TSS impacting vegetation. Barges move on the main channel where bed sediment is mostly sand. Resuspended sand settles relatively quickly compared to finer particles that settle in off channel areas. The main channel is a poor habitat type for vegetation given the greater depth and high water velocity. Periodic dredging does occur on the main channel of the Mississippi and Minnesota Rivers. This is primarily sand material that settles in areas of lower velocity in the main channel. This sediment is removed from the system creating a depositional area for upstream sediment.	

45. Selected anecdotes representing one viewpoint should be deleted or balanced with other perspectives	01
Response: We have removed the first paragraph of section 2.1 in which an 1846 observation is quoted. It is notable, however, that a document written by Satish Gupta (Natural vs Anthropogenic Factors Affecting Sediment Production and Transport from the Minnesota River Basin to Lake Pepin, January 2011), which is cited by The Minnesota Soybean Growers Association and others in support of their contested-case hearing requests (pertains to comment #3 above), relies heavily on the use of selected anecdotes as part of the "weight of evidence."	

46. Discussion of development and population raises other questions regarding wastewater	01
Response: The section of the report the comment questions is intended as a brief introduction into the water quality history of the subject waterbodies. We believe it's neither fitting nor useful to provide extensive information on wastewater (which provides a very small contribution of TSS, the pollutant this TMDL addresses).	

47. Difficulty understanding narrative regarding sedimentation rate	01
Response: We believe the narrative is clear and is otherwise aided by Figure 2.	

48. Questions on the validity of the sediment core work	01
Response: Annual loads of sediment can certainly be variable and were likely variable 150 years ago. The sediment coring technique for sediments over 150 years old is more useful estimating average loading over multi-year periods such as decades. This information is very useful as a historical record of change. Areas upstream of Lake Pepin have accumulated sediment as stated. Lake Pepin was chosen for sediment coring since it was the major depositional area for the past couple hundred years while the area from the head of Lake Pepin to St. Paul served as the major depositional area prior to this period.	

49. Report focuses on agricultural land use changes but omits other sources (urbanization, roads, bridges, etc.)	01
Response: We believe the proportional focus on sources is congruent with the relative impact by sources on the subject water resources. It simply is not true that the report includes no mention of urban sources or construction. For example Section 3.1.1 states: *"During construction, however, per-acre sediment losses can exceed that of row crop agriculture. Also, increases in the amount of impervious surface through the construction of roads, parking lots, and buildings significantly alter site hydrology by decreasing infiltration, increasing surface runoff, and decreasing travel times such that peak and total flow volumes substantially increase. The altered hydrology can also impact stream morphology, leading to unstable streams, bank and channel erosion, siltation, and habitat modification. Urbanization also leads to a loss of riparian corridor vegetation, which can increase stream temperatures, reduce filtering capacity and destabilize stream banks."*	

50. Sedimentation history and dynamics in report is incomplete	01
Response: We believe the report provides a sufficient high-level overview of sedimentation history and dynamics and that the cited research was of a very high quality. It is important to note that this TMDL is an overlay TMDL that provides loading targets for upstream watersheds. Turbidity TMDLs for upstream watersheds including the Cannon and Minnesota Rivers will examine more detailed source contributions and sinks within the local watersheds.	

51. Precipitation comparisons across time periods is inaccurate or misleading	01
Response: It appears that you have misread the report. The report does not compare the period of 1895-2005 to 1990-2000. It compares 1895-1905 to 1990-2000.	

52. Comparison of May-June precipitation raises questions; questioning of 10-fold increase in sediment load	01
Response: The report has been revised to cite the analysis by Schottler et al. (2013) which provides a very thorough analysis of May-June vs later season precipitation and related findings regarding land use changes and sediment loading. This work was comprehensive, rigorous and conclusive and we concur with the findings.	

53. The draft report includes numerous mentions of in-filling of Lake Pepin, which is a serious issue but not directly the subject of this TMDL report. However, we are especially concerned that MPCA would elevate the concerns of local residents, river scientists and environmental groups above the concerns of other stakeholders. This is a dangerous precedent and such language should be removed.	01
Response: While it was not the basis for the site-specific standard that the TMDL was based on, the in-filling of Lake Pepin very much is a focus of this report. Addressing multiple environmental problems (especially clearly related ones) is an efficient and responsible thing to do within studies and projects and should be encouraged. We have removed the specific reference to certain stakeholders since the main point can be made without that language. We strive to consider the perspectives of all stakeholders while carrying out our mission to protect and improve our environment and enhance human health.	

54. Disappearance of riverine lakes is a natural process; include discussion of riverine lakes	01
Response: There appears to be some confusion in this comment as well as others received regarding the appropriateness of TMDLs addressing a "natural process." Erosion and movement of sediment in many cases is a natural process. However, it is the rate that this occurs that is the issue. When erosion and deposition is anthropogenically accelerated then it is a concern that fully warrants it being addressed via a TMDL.	

55. Suggested rephrasing regarding loading variation	01
Response: We have made the suggested change.	

56. Need clarification regarding Lac Qui Parle sediment and upstream turbidity issues	01
Response: Please see response to comment #50. It is common for TMDLs to establish boundary conditions where sources are relatively minor and located a considerable distance upstream of the waterbody of concern. Watershed restoration and protection strategies (WRAPS) will be developed for watersheds upstream of Lac Qui Parle Dam.	

57. Focus on land use alone is incomplete/misleading; should explain soils differences	01
Response: We have added narrative to section 3.1 explaining the importance of soil type and slope and have indicated the watersheds within the project area where this most comes into play.	

58. No mention of Lake Byllesby effect on long-term TSS	01
Response: This report is not intended to describe or inventory all sources and sinks of sediment. Such detail can be done when HUC-8 (major watershed scale) projects are done.	

59. Out-of-date (2001) developed land acres used for metroshed	01
Response: The revised TMDL uses a more recent dataset (2011) for urban-related allocations.	

60. Cite data on factors causing TSS dip from St. Peter to Jordon	01
Response: The report text does cite a reference from which this conclusion is based. We don't believe it to be necessary to provide in the narrative the actual data or further detailed analysis.	

61. Report should refrain from direct comparisons of land uses and instead offer data and descriptions of areas based on what is known.	01
Response: Watershed reports written in the US and elsewhere routinely compare loading by land use. It is a valid and informative thing to do and we believe this report has done this reasonably accurately given the large scale that it covers. The fact that both agricultural and urban land are very different and important to society is not a reason to refrain from providing basic information about where loading to the water resources comes from. Further, in your comment you suggest we include "TSS data from Minnesota State University, Mankato, showing TSS loads from agricultural basins *as low as* 27 pounds per acre" [emphasis added] and you state that "monitoring by the Minneapolis Parks Board verifies that approximately 225 pounds per acre of sediment is delivered from the Minneapolis area…" We have since asked the Minneapolis Parks and Recreation Board the origin of this 225 pound figure. They responded that in the June 2012 NPDES MS4 Phase I Permit Annual Report they have calculated monitoring data from four stormwater sites that yielded an approximated value of 215 pounds per acre (close to your cited value), but this does not represent what is delivered to surface water. Instead this is a *pre-treatment* value, meaning the estimated amount before treatment by street sweeping, dredging of ponds, grit chambers, infiltration basins, and other treatment BMPs. Thus, it appears you are making a contrast between a *minimum* agricultural value (rather than an average value) and an *inflated* urban value.	

62. Supports site-specific standard used and predicts science will emerge supporting a less stringent standard	01
Response: We appreciate your support for the standard.	

63. General dissatisfaction with PCA's lack of valuing ag stakeholders' input and skewing of research	01
Response: We stand by the research that was conducted and used to support this project. It is high quality work conducted by highly qualified scientists and is not biased. We understand how some stakeholders were frustrated. The dynamic that occurs for some of these larger-scale, high-profile projects can be a difficult one. MPCA may have often generalized some conclusions or spoke broadly, focusing on the problems and concerns. However, we often were faced with some vocal agricultural-sector stakeholders who persistently denied or deflected responsibility for agriculture's role in the decline of water quality, insisting that the water quality problems are due to natural background sources and climate change. This comment letter and others received from agricultural representatives convey a similar stance. Given that the vast majority of agricultural land is exposed bare or nearly bare soil for up to seven months a year and that so much of the landscape has been hydrologically altered by a vast network of surface and subsurface drainage, it is simply not credible to assert that there is no (or minimal) agricultural connection to river water quality.	

64. If 90% of sediment is from ravines, bluffs and banks (in the Blue Earth and LeSueur Rivers) how will changes in ag land management achieve WQ goals and, if so, at what cost?	01
Response: A major focus in the recently drafted Sediment Strategy document is on hydrology, which agricultural land management can play a significant role in. By reducing the frequency and duration of high river flow events (i.e., achieving a new hydrologic equilibrium) the river channel can—over time (decades perhaps)—begin to stabilize. This takes various forms—less channel incision, narrowing of channel, re-establishment of bank vegetation, natural building of new flood plains, and more. These river geomorphological concepts are well established. The cost of actions may be high, but the cost of inaction in terms of resource loss is likewise high.	

65. Report incorrectly assumes that the ratio of sediment delivered to Pepin compared to sediment delivered to the Miss R at MN R confluence has remained constant	20
Response: The question is similar to other questions regarding the history of sedimentation of Lake Pepin and the importance of this history to the TMDL. The site specific standard applies is measured at Lock and Dams 2 and 3. Reducing suspended sediment loads from tributaries upstream of these locations is critical to meeting the site specific standard. Studies of sedimentation rates as suggested would require more time and money. These studies may not satisfy the commenter given expressed skepticism regarding the existing core studies. The budget for this TMDL (together with work on Lake Pepin nutrients) was the highest in the history of TMDLs in Minnesota. MPCA is confident that existing modeling and core studies were more than sufficient to complete a robust and scientifically-defensible TMDL.	

66. In summary, as proponents of clean water and conservation in general, we support the MPCA in their efforts to implement the Clean Water Act and the Minnesota Clean Water Legacy Act. We ask MPCA to edit the draft South Metro Mississippi River TSS TMDL report by removing all conflicting and subjective extraneous references outlined in these comments. We also ask MPCA to rewrite passages outlining stakeholder views divergent from those of the author in a more respectful manner. And finally, we ask that MPCA explore new approaches to working more collaboratively with stakeholder groups in future water quality planning efforts.	01

Response: We have made some of the requested changes identified in your comment letter. However, we disagree that this report outlines "stakeholder views divergent from those of the author" in any way that is disrespectful. However, we too welcome a more collaborative approach for water quality planning efforts and hope you would likewise consider approaching watershed projects differently (assuming you have not already done so in the three years since the comment period occurred). We can point to a project that was very respectful and productive that can serve as an example: the implementation plan development for the Carver Creek - Bevens Creek Turbidity TMDL (which happens to be in the South Metro Mississippi River drainage area). This effort was led by staff from the Carver County Water Management Organization. County staff convened a small group made up predominantly of local farmers and agricultural representatives (in addition to SWCD staff and MS4 representatives for one of the meetings). At no time did any of the stakeholders deny or deflect agricultural influence on the water quality problems, claim the problems are overwhelmed by precipitation changes, or cite selected or out-of-context research findings that suggested a non-agricultural explanation for water quality problems. Instead they offered a set of pragmatic actions towards addressing the turbidity problem that formed the basis of the implementation plan. These actions included wetland restoration, conservation tillage, buffer strips, controlled drainage, repurposing marginal cropland, and addressing road ditch encroachment.

C. Wastewater and Related Comments

67. Will MPCA be notifying WI dischargers regarding WLAs?	12
Response: No. Follow-up discussions with WDNR have since occurred to effectively "hand off" this report for WDNR use.	

68. Remove MESERB names from SAC list in appendix C	30
Response: Requested edit has been made.	

69. Provide assurance regarding option of pollutant point-nonpoint trading	30
Response: Trading provisions are unnecessary for wastewater sources. A mechanism is provided for future growth as long as the permit effluent limit is equal to or more restrictive than 32 mg/L water quality standard. All continuous dischargers with 30 mg/L minimum secondary treatment effluent limits and will be able to expand their wasteload allocations in the future.	

70. Provide some accommodation for lagoon facilities to allow for growth	30
Response: Stabilization pond wasteload allocations include 50% reserve capacity to accommodate future growth.	

71. Unclear why lagoon facilities which do not discharge during summer are included in this TMDL	28
Response: The TSS water quality standard is applicable from June through September. Stabilization ponds are authorized to discharge from March 1st through June 30th and from September 1st through December 31st in the northern portion of the watershed. In the southern portion of the watershed stabilization ponds are authorized to discharge from March 1st through June 15th and from September 15th through December 31st. Wasteload allocations were developed for stabilization pond WWTPs because their authorized discharge periods overlap with the water quality standard's applicability period.	

72. Mismatch having allocations for high flow since atypical of June-September compliance period	30
Response: EPA requests that the TMDL and associated allocations consider the full range of flow conditions, thus high flow targets are included. However, the report is otherwise clear regarding achievement of the site-specific standard and the averaging methodology that will be used for that evaluation.	

73. Keep assurance provided on p. 82 regarding no further ratcheting down on permitted sources	30
Response: We have not changed that language.	

74. Provide verification that reserve capacity will be available to accommodate 30% growth in metro by 2040	29
Response: The TMDL report includes a future growth mechanism that allows for wasteload allocation expansions for all permitted dischargers with permitted TSS effluent limits that are equal to or more restrictive than the 32 mg/L water quality standard. This TMDL does not establish any impediment to the future expansion the Metropolitan Council's wastewater treatment capacity	

75. Why 32 and not 30 mg/L (which includes MOS) for WW facilities?	12
Response: Wastewater point source wasteload allocations for continuously discharging facilities were calculated based on the 30 mg/L calendar month average permit limit and the facility design flow. Controlled Discharge WWTP WLAs were calculated based on the 45 mg/L permit limit for Minnesota facilities and the 60 mg/L permit limit for Wisconsin facilities. A 50% reserve capacity was also included for these dischargers since their WLAs are not eligible for future expansion. The 32 mg/L water quality standard was only used to calculate wasteload allocations for industrial dischargers whose permits do not currently include TSS effluent limits or monitoring requirements. These are mostly non-contact cooling water and reverse osmosis reject water discharges whose effluent are believed to contain irreducible quantities of TSS.	

76. Is future growth (reserve capacity) of 46 MT/yr just for MN facilities? (section 6.8) If both	12

states then indicate how divided between two states. Otherwise WI requests reserve capacity as well.	
Response: Revisions were made to include Wisconsin.	

77. Suggest added text to clarify that 6.8 and 6.9 apply only to MN facilities	12
Response: These sections are now renumbered 6.5 and 6.6, respectively. Additional language has been added to the report to clarify applicability to Wisconsin and Minnesota.	

78. Request for file used to calculate WLAs for WI dischargers	12
Response: This has been provided.	

79. Appendix A table of WW WLAs should include design flow and TSS concentration	12
Response: We have instead provided you (WDNR) a copy of our spreadsheets with all the needed information.	

80. Allocation methodology using calendar month values is not congruent with long-term nature of the standard	28
Response: The wasteload allocations are consistent with TMDL modeling.	

D. Load Allocation Methodology Comments

81. Research supports LA breakdown into field, non-field and natural background; need this breakdown since affects implementation plans (plus related comments)	03
Response: US EPA does not require that the load allocation be separated into subcategories. However, by having used the sediment research findings as we did, this TMDL has gone beyond what most TMDLs are able to provide: an overall approximation of what is natural background and what is not. This along with the supporting research provides a solid defense to the many commenters who wish to categorize nearly all of the load as natural background. Regarding your request, we disagree with the premise that further breakdown and fine-tuning of the LA will somehow lead to better implementation plans. What truly informs implementation plans is the description of sources, the modeling scenarios, the supporting research and professional judgment. The Sediment Strategy report that MPCA has since developed already builds off this information and recommends a primary focus on actions that will reduce the frequency and duration of channel-forming flows (which lead to non-field contributions). This report should then inform implementation planning at the watershed project scale. Other aspects of this comment are addressed in the Findings of Fact.	

82. A separate allocation for internal loading should be made; key players will take action if included (plus specific related report edits)	38
Response: We have made revisions to the tables including the internal load component of the load allocation as well as have made edits to the narrative regarding internal loading.	

E. Reasonable Assurance Comments

83. Portion of TSS load due to tile line discharge (scour, head-cutting, ravine erosion) should be deemed a point source and be in the WLA.	03, 22, 37
Response: We fully recognize that altered hydrology causes and contributes to excess TSS in various watersheds within the project drainage area. To date the MPCA's programs (including regulatory compliance/permitting and TMDL) have not viewed these as point/permitted sources.	

84. MPCA should exercise its authority under Minn. R. 7050.0210, subp. 2 to regulate nonpoint pollution	03, 22
Response: The comment is noted. The TMDL does cite this authority among the contingency requirements to be implemented if nonpoint source targets are not met.	

85. MPCA should exercise its authority under Minn. R. 7050.0185, subp. 1 regarding nondegradation of waters to regulate nonpoint pollution	36
Response: This comment is noted. Nondegradation rules are currently undergoing revision at the MPCA. In the future we do not rule out evaluating application of this rule toward nonpoint pollution.	

86. MPCA should exercise its authority under Minn. Stat. 115.03(e) to regulate nonpoint pollution	37
Response: This comment is noted. In the future we do not rule out evaluating application of this citation toward nonpoint pollution. It should be noted that this citation is limited to general powers and duties. Review and interpretation of specific applicability would need to be done as part of any evaluation.	

87. Apply existing authorities cited in section 7.5 of TMDL (applicable to various agencies, LGUs)	03, 22, 37
Response: The existing authorities cited in the TMDL (now renumbered as section 7.3) are provided as contingency requirements to be implemented if nonpoint source targets are not met. The MPCA notes that some authorities are for agencies/entities other than the MPCA.	

88. MPCA should use its authority to classify flow as a pollutant per Minn. Stat. 115.01, Subd. 13, to add support for local jurisdictions to address flow-related TSS sources	37
Response: This TMDL was based on a listing of violation of the turbidity standard. Subsequent to that assessment a site-specific standard based on TSS was proposed and approved and the TMDL and all allocations were based on that parameter. The MPCA is not willing at this time to redo the whole process using a different pollutant parameter. Further, a TSS-based TMDL does not in any way preclude establishing flow-related targets, which was done in the Sediment Strategy document referenced previously.	

89. Amend TMDL to include aggressive but achievable milestones, benchmarks, timelines	14, 38
Response: These elements are laid out in the Sediment Strategy document cited above.	

90. Add to TMDL the MPCA's intention to pursue with other state agencies and LGUs development of a coordinating structure to ensure actions are identified (incl. gaps analysis to ID reductions via existing laws), carried out, measured, monitored and reported. Recommend MOU among agencies, plus governor, to enforce existing laws; include commitment to adequately staff effort.	03, 37, 38
Response: This TMDL was done at a very large geographic scale. The Sediment Strategy document was our primary planning effort at this scale and it includes a proposal for a Sediment Reduction Task Force, which will take on some evaluation-related tasks. However, we expect that more detailed strategy development, targeting and prioritization, and accountability evaluation to occur at the HUC-8 (major watershed) scale, which we believe to be an appropriate and effective scale/approach and in line with the overall direction that has been made by state agencies and which is provided in the accountability-related provisions recently added to the Clean Water Legacy Act.	

91. Educate farmers on needed reductions and hold them accountable.	13, 14
Response: Education and communication are important steps in the overall process. The MPCA has undertaken a part of this by producing and publicizing the Sediment Strategy document (as well as other reports and efforts). We believe it to be more effective for other entities to lead more direct education efforts for farmers, however. Regarding accountability we refer to our response to comment #90 above. The new accountability provisions of the Clean Water Legacy Act include the following: *"Beginning July 1, 2016, and every other year thereafter, the Pollution Control Agency must report on its Web site the progress toward implementation milestones and water quality goals for all adopted TMDL's…"* Such information will serve to highlight whether or not progress is being made by agricultural sources.	

92. Do not pay for practices required by law and require compliance before access to conservation resources	13, 14
Response: This is a policy-level issue beyond the scope of this specific TMDL.	

93. Include development of a MN R Basin Commission in the reasonable assurance section	37
Response: It is more appropriate to undertake consideration of this under the umbrella of the Minnesota River TMDL and its related planning and ongoing activities. Also, such consideration should be a deliberative process involving the many potential members of such an entity.	

94. Either take WI's approach of instituting ag performance standards or adopt the provision of the MN Water Sustainability Framework dealing with controlling flow and pollutants at the discharge points of the 81 major watersheds	22
Response: While these may be effective approaches it is our understanding that either one would require legislative action in order to be enacted.	

95. TMDL lacks reasonable assurance that needed ag controls will occur (needed reductions countered by trend data, RA elements fall short, no viable contingency plan, MPCA does not commit to using authority, inadequate funding, need gap analysis)	29, 31, 40
Response: The US EPA provided a preliminary review of the TMDL and did not find the reasonable assurance section to be inadequate. In addition, since the time that the TMDL was completed and the public notice took place there have been significant changes to the Clean Water Legacy Act. Provisions added, which will largely apply at the HUC-8 level, are aimed at outlining contents of Watershed Restoration and Protection Strategy (WRAPS) reports to, among other things, ensure sources are identified and the magnitude of implementation needed to restore and protect waters are outlined. In addition, the MPCA will have an ongoing reporting requirement, which we referenced in the response to comment #91 above. This process will serve to provide an ongoing evaluation of gaps and progress made as well as improve accountability at all levels.	

96. TMDL lacks reasonable assurance that needed point source (MS4s) controls will occur (aggregate WLA prevents ability to determine compliance)	40
Response: An aggregate or categorical WLA is appropriate for such a large-scale TMDL where the detail on individual loading is very limited. In addition, as the report makes clear, the overall load contribution of MS4s is very minor compared to other sources. Also, we believe revisions to the methodology for the MS4 WLAs in the revised TMDL as compared to the original draft will serve to make compliance determination more clear.	

F. Implementation-Related Comments

As indicated in the introduction since the drafting of the TMDL report a separate report entitled "Sediment Reduction Strategy for the Minnesota River Basin and South Metro Mississippi River" has been created. That document is available at: http://www.pca.state.mn.us/ark8qrf. Implementation-related information in both the drafts of the Minnesota River Turbidity TMDL and this TMDL were used in the drafting of this Sediment Strategy report. Because this document now exists the implementation section in the South Metro TMDL has been revised and simplified and references the Sediment Strategy.

97. Return landscape and river course to its original natural form between Mdo-Te (Mendota) and Pilot Knob	41
Response: The Sediment Strategy document only provides a high-level overview of implementation strategies. Such specific projects as this one will need to be considered, designed and implemented working with a range of partners at various levels of government.	

98. Expand language regarding perennials in sect 7.2.2	39
Response: As indicated above the TMDL implementation section has been simplified. However, the Sediment Strategy recognizes the importance of this and includes several references for the expanded and increased use of perennial vegetation.	

99. Target funding for ag to outcome-based solutions	39
Response: How funds are targeted is beyond the scope of a TMDL and perhaps more in the statewide policy realm.	

100. Remove box elder trees from buffer zone; plant prairie grasses; taper banks	23
Response: This may very well be a very effective approach where appropriate. Neither the TMDL nor the Sediment Strategy is not drilling down to the level of specific buffer zone techniques for specific settings, however. This is best evaluated at the local level.	

101. Change language to expand habitat restoration opportunities (p. 5)	16
Response: We have made the suggested change.	

102. Change language regarding bluff stabilization (p. 75)	16
Response: This section has been greatly simplified given the creation of the Sediment Strategy document and, thus, specifics are no longer provided in the TMDL report.	

103. State policy issues with other state agencies should include Critical Area policy (p. 83)	16
Response: As indicated above the TMDL implementation section has been simplified. The Sediment Strategy draft does not reference this policy at this time.	

104. Should use a headwaters first approach	19
Response: While there is a theoretical basis to start work in the headwaters and work down, we feel there is much work throughout the drainage area that should be done. In particular, an emphasis on reducing the hydrologic impacts to the river system requires efforts all across the drainage area. This is addressed more fully in the Sediment Strategy document. Also, it should be acknowledged that this study is not launching the beginning of implementation; implementation has been going on for decades by a myriad of entities. This effort will hopefully bring attention to, accelerate and focus efforts.	

105. Need funds for community capacity studies and community engagement	36
Response: State funding for local projects post-TMDL is generally provided via grants from the Board of Water and Soil Resources. These activities are discussed in the Sediment Strategy and are eligible for funding as part of an implementation effort.	

106. Target conservation funding towards highest loading	13, 14
Response: This is a major emphasis in state funding.	

107. MPCA Clean Water Legacy Fund-derived budget dedicates only a small fraction towards restoration efforts	27
Response: The comment appears to assume that the MPCA is the only agency that disburses Clean Water Land and Legacy Amendment implementation funds. This is not true. The bulk of implementation funds are received and disbursed by the Board of Water and Soil Resources and the Public Facilities Authority. For further information on use and breakdown of Legacy funds see: http://www.legacy.leg.mn/	

108. Sequencing of monitoring/planning of HUC-8 watersheds should be based on relative loading, not MPCA's schedule. Timeframe for implementation (in Table 11) too protracted, especially for high-loading watersheds.	06, 14
Response: The watershed planning schedule shown in the referenced table (now renumbered as Table 10) was developed outside of this TMDL based on a range of factors. The column labeled "implementation" showing years is misleading since implementation is ongoing at the local level to varying degrees and certainly any "new" implementation initiatives can and should proceed under the umbrella of this larger effort. That column has been removed in the revised report.	

109. Set benchmarks for reductions and regularly assess progress	11
Response: This is the intent outlined in the Sediment Strategy document.	

110. What efforts will be made to incorporate or account for long established local efforts in the MPCA implementation plan?	09
Response: We generally view it going the opposite way—the Sediment Strategy should inform/influence local plans.	

111. MN R should be prioritized over other basins for implementation	29
Response: The Sediment Strategy has a major emphasis on the MN R.	

112. Restore rapids at Coon Rapids	23
Response: Neither the TMDL nor the Sediment Strategy is not drilling down to the level of detail. This is best evaluated at the local level.	

113. Lower speed limits for boats	23
Response: A brief mention of this is made in the report (in reference to internal loading).	

114. 25% reduction by 2020 extremely aggressive, especially for MS4s	05
Response: See Section A of this document regarding updates to the TMDL regarding MS4s. The Sediment Strategy document provides the overall timeline and, yes, is aggressive.	

G. General Comments

115. Statements of general support (need, goals, approach)	Various
Response: We appreciate this support and appreciate the time all commenters took to express their opinions in writing and/or attend public meetings, whether to express support or otherwise.	

116. Desire for more or better education of the public on this issue	Various
Response: This is a very worthy goal. Education can take many forms and is an important prerequisite for moving forward on much of the actual on-the-ground actions.	

117. Don't send TMDL to EPA. Don't react endlessly to their picayune legalistic comments.	22
Response: Understanding that the context of this comment was within expressed frustration over the difficulty with addressing nonpoint sources, we can only say that we in no way view EPA as a roadblock in terms of completion or approval of this TMDL. Nor do we feel the content of the TMDL will be compromised due to their review.	

118. Reconcile or explain use of different model scenarios in MN R and SMM TMDLs	18
Response: The HSPF model predicted that Minnesota River Scenario 4 would result in Minnesota River TSS load reductions near Jordan in the range of 40 to 60 percent, depending on the year and the season, which is what is needed for the South Metro Mississippi River TSS TMDL. So the modeling predicted that reaching South Metro Mississippi River targets would involve the changes in Scenario 4 while to meet Minnesota River targets, the changes needed are closer to scenario 5 levels.	

119. More government employees than other participants at some meetings	21
Response: It can be a challenge to get local citizens to meetings and other public events. Some creative ideas have been offered and/or attempted. Some of those cost money (offering food) and are generally deemed an unallowable expense when suggested/requested.	

120. Mis-use of Legacy Funds by agencies; shouldn't go to government agencies and their employees	21
Response: We disagree with your characterization of this issue. The legislature apportions funds between implementation actions and for staff and activities that inform and support implementation.	

121. Is purpose of the report to propose a draft TMDL to set a performance standard or provide a basis for an implementation plan?	06
Response: TMDLs are required by the Federal Clean Water Act as a step towards restoring impaired waters. We hope that they also highlight the importance of the resource and the need to restore it and form the basis for action, which may take various forms (plans, policies, funding).	

122. Would be helpful to provide a big picture timeline (relative, not date-specific)	06
Response: The Sediment Strategy report provides an overall timeline with respect to implementation.	

123. Would be more efficient to address multiple pollutants rather than just one (TSS)	29
Response: Yes, it would. That is how we are proceeding with new watershed projects that are launched. This project was linked with the Lake Pepin phosphorus impairment at one time, but was split off in the interest of making progress while the phosphorus impairment was delayed.	

124. Clarify approval status of site-specific standard	05
Response: This is stated in Section 4.1.1—approved by EPA in November 2010. The MPCA can use either of two different paths for a site-specific standard, include it in our triennial update of MN Rule 701 (as we are doing with the Lake Pepin phosphorus standard) or proceed on a separate public process (as was done for this TSS site-specific standard).	

125. General concern about TMDL inconsistency	05
Response: Variability in TMDL approaches occurs for various reasons (scale, local partner input, types of sources, new information or policies, budgets and others). The more recently adopted "Watershed Approach" done primarily at the major watershed scale should serve to limit variability in approach.	

126. Recommend continued monitoring at Jordon	10
Response: It's our understanding that this long-term station will remain.	

127. Request TMDL provide more info on how TSS loads calculated for WI rivers needing 20% reduction	12
Response: The overall reduction targets by basin were evaluated by the project team as part of the scenario runs for the modeling. Much of the scenario process is professional judgment and learning as scenarios are run and refined.	