



# Minnesota Center for Environmental Advocacy

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December 4, 2013

**BY ELECTRONIC MAIL**

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**Re: Sunrise River Watershed TMDL for Nutrients, Bacteria, Biota, and Turbidity  
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 TMDL for the Sunrise River Watershed.

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 concerned about impairment of Minnesota's waters from point and nonpoint source discharges for a number of years, has made impaired waters a significant component of its work, and has participated in a number of related policy and legal matters.

The draft Sunrise River TMDL addresses four lake impairments for nutrients, two E. coli impairments, and one reach impaired for biota and turbidity. MCEA is concerned that the draft Sunrise River Watershed TMDL lacks adequate nutrient source assessment and over-relies on internal load reductions to meet water quality standards for nutrients. In addition, the monitoring plan is insufficient and it lacks reasonable assurance of nonpoint source reductions.

***Insufficient Nutrient Pollutant Source Assessment***

The draft TMDL provides inadequate detail regarding the nonpoint pollutant sources in the watershed that load phosphorus into the impaired lakes, preventing targeted implementation actions to achieve pollution reductions. Rather than define pollutant sources and locations, the TMDL identified the watersheds as the source of pollution. At each lake, the lake's drainage areas and tributaries were "lumped as a single tributary input" for the individual lake phosphorus model.<sup>1</sup> The loading was not further re-allocated to pollutant sources.

Ignoring the relative contributions from pollutant sources is inconsistent with EPA guidance, which states that "[t]he source assessment is needed to evaluate the type, magnitude, timing, and location of loading to an impaired waterbody."<sup>2</sup> As a part of the assessment, "each activity should be evaluated to determine its individual pollutant generating mechanisms, processes, and

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<sup>1</sup> Draft TMDL at 52.

<sup>2</sup> *Protocol for Developing Nutrient TMDLs*, U.S. EPA, Nov. 1999, at 5-2.

potential magnitude.”<sup>3</sup> EPA protocol provides additional guidance, stating that “the TMDL submittal should include an identification of the point and nonpoint sources of the pollutant of concern, including location of the source(s) and the quantity of the loading, e.g., lbs/per day.”<sup>4</sup> Without an accurate source assessment, it is impossible to determine the accuracy of the wasteload and load allocations.<sup>5</sup>

The TMDL needs additional delineation of specific nonpoint sources, locations, timing, relative magnitude, and type of land use practices—both to demonstrate the accuracy of the load allocation and to guide judicious use of public funds for implementation activities. This appears to be possible at least in part, because the support document for the model used in the TMDL identified relative contributions from sources. For example, it states that “Agricultural land occupies only 21% of the Sunrise River watershed but delivers...55% of the phosphorus nonpoint-source loads.”<sup>6</sup> This information could be used to identify relative loading, locations, and timing of the majority of phosphorus loading. These findings do not appear in the draft TMDL. Adding this information would significantly aid identification of BMP opportunities at specific locations in each impaired lake watershed and would facilitate targeted prioritization to achieve load reductions.

Where the draft TMDL identifies general types of nonpoint sources of nutrients, it does not locate these sources in the watershed or allocate the watershed pollution load among the categories of watershed sources.<sup>7</sup> Loading to the four impaired lakes from septic systems and internal loading is quantified, but inaccurate.

The septic system loads are based on estimates dating back to 2004.<sup>8</sup> These estimates should be updated to reflect the most recent county reports, which show that Chisago and Anoka Counties have zero imminent threats to public health or safety and lower failure rates than assumed in the TMDL.<sup>9</sup> Washington County estimates that only three percent of its systems are imminent threats and three percent are failing, which are also below the TMDL estimates.<sup>10</sup>

The internal load estimates include a portion of septic system contributions.<sup>11</sup> Corrections to the estimated SSTS load described above could change the internal load estimate and the margin of safety. In addition, the modeling for the lakes required adjustment because the loading under observed conditions “was much greater than the internal load estimated from sediment P

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<sup>3</sup> *Id.*

<sup>4</sup> “Guidelines for Reviewing TMDLs Under Existing Regulations Issued in 1992,” U.S. EPA, 2002, available at <http://water.epa.gov/lawsregs/lawguidance/cwa/tmdl/final52002.cfm>.

<sup>5</sup> *Id.*

<sup>6</sup> Almendinger, James E., & Jason Ulrich, *Applying a SWAT model of the Sunrise River watershed, eastern Minnesota, to predict water-quality impacts from land-use changes*, for the “Sunrise River Watershed SWAT Modeling Phase 5,” June 2012, at 22.

<sup>7</sup> See Draft TMDL at 30.

<sup>8</sup> Draft TMDL at 34.

<sup>9</sup> 2012 County SSTS Reports. MCEA obtained the 2012 report data in summary format from MPCA.

<sup>10</sup> *Id.*

<sup>11</sup> Draft TMDL at 53.

concentrations.”<sup>12</sup> Thus, a significant load came from unknown sources and it was assigned to septic systems and internal loading, despite low rates of SSTS failure and sediment measurements that did not justify such large internal loads. In contrast, the watershed source estimates were based on literature values, not measured tributary inputs. Given these discrepancies, the internal load estimates should be reevaluated.

MCEA urges MPCA to amend the final TMDL to address the pollutant sources as recommended in EPA guidance to replace the lump sum watershed loading. Barring that, the TMDL at a minimum should include the steps to target the specific sources during the implementation planning process and before expending public resources to address them.

### ***Overreliance on Internal Load Reductions to Achieve Nutrient TMDLs***

The TMDL must be calculated to achieve water quality standards, with accurate assignment of the load allocations and the margin of safety. If the reductions are not assigned to achieve the target load, then water quality standards will not be met. Internal nutrient loading in lakes results from phosphorus in sediment that is re-suspended and is available for algae.<sup>13</sup> It is essentially the sum of past watershed (external) loading to the lake.

The draft TMDL calls for internal loading reductions in three of the four impaired lakes, with the largest in Vibo Lake.<sup>14</sup> The TMDL calls for a 98 percent reduction to the internal load to Vibo Lake, which has averaged 516 µg/l total phosphorus – more than eight times the phosphorus criterion.<sup>15</sup> The TMDL does not describe how the 98 percent internal loading reduction could be achieved. MCEA is not aware of any in-lake treatment that could achieve such large reductions. Even if it were possible, relying on this extreme reduction in internal loading is inappropriate because the lake has an average residence time of 13 to 19 days.<sup>16</sup> If the phosphorus in the water column and sediment is removed, phosphorus from watershed sources will quickly eliminate the impact of any internal load management and the reduction will not be maintained. Relying on this degree of internal load reduction is improper because it leads to smaller required reductions from the watershed sources. The TMDL fails to assign loads that will meet water quality standards and fails to demonstrate that the load allocation for the external watershed contribution is accurate.

MCEA requests that the MPCA review the assignment of internal load reductions and the resulting pollution load allocations, and adjust these as necessary based on demonstrated science before adopting the TMDL and seeking EPA approval.

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<sup>12</sup> Draft TMDL at 53.

<sup>13</sup> *Protocol for Developing Nutrient TMDLs*, U.S. EPA, Nov. 1999, at 2-2.

<sup>14</sup> Draft TMDL at 63-66.

<sup>15</sup> Draft TMDL at 27.

<sup>16</sup> Draft TMDL Appendix C at 133-134.

### ***Insufficient Monitoring Plan***

EPA and MPCA provide guidance for monitoring plans, describing three elements for a lake TMDL monitoring plan as resource monitoring for impairment, implementation adoption, and implementation effectiveness.<sup>17</sup> While the TMDL states that ambient water quality monitoring will occur on rivers and streams in the watershed, it does not detail when or where the monitoring will take place.<sup>18</sup> The TMDL explicitly states that there is no monitoring plan for White Stone or Vibo Lakes.<sup>19</sup> It does not describe the location or duration of water quality monitoring for the other lakes.

The TMDL does not provide a method to evaluate progress toward achieving the water quality goals. Counting the total BMPs completed gives no measurement of progress toward achieving the necessary pollutant load reductions. Without more complete monitoring information, it will be impossible to determine whether implementation resources are being used effectively. Without evaluation of BMP effectiveness, the TMDL provides no assurance of correction if the responsible parties do not take implementation actions or if actions fail to achieve the target load.

The final TMDL should contain a monitoring plan that includes ambient water quality monitoring, implementation monitoring and implementation effectiveness evaluation. The ambient water quality monitoring should include monitoring tributary inflows to the impaired lakes.

### ***Lack of Reasonable Assurance of Nonpoint Source Reductions***

MPCA guidance for nutrient TMDLs “requires a description of reasonable assurances for nonpoint only TMDLs.”<sup>20</sup> These assurances should include regulatory and nonregulatory efforts to reduce nonpoint source pollution, as well as potential funding sources.<sup>21</sup>

The TMDL does not provide such assurances. The existence of local plans and BMPs does not mean that landowners will adopt them at the scale needed to achieve the water quality goals. The TMDL does not identify regulatory programs or oversight actions that will ensure achievement of nonpoint source reductions and lacks a schedule for nonpoint source reductions.

MCEA recommends that the TMDL include additional detail of necessary steps and assurances of reductions from nonpoint sources to ensure that the reductions necessary to meet water quality standards will be achieved.

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<sup>17</sup> *Protocol for Developing Sediment TMDLs*, U.S. EPA at 7-7 (1999); *Lake Nutrient TMDL Protocols and Submittal Requirements*, MPCA, Mar. 2007, at 49.

<sup>18</sup> See Draft TMDL at 81-82.

<sup>19</sup> Draft TMDL at 81.

<sup>20</sup> *Lake Nutrient TMDL Protocols and Submittal Requirements*, MPCA, March 2007, at 46.

<sup>21</sup> *Id.*

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***Conclusion***

MCEA urges the MPCA to carefully review the issues above and make any necessary additions and changes to the draft TMDLs before adopting and submitting them to the EPA for final approval. Please feel free to contact us should you have any questions with respect to MCEA's comments. Thank you for the opportunity to comment.

Sincerely,



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cc:           Gaylen Reetz, MPCA  
              Dave Werbach, USEPA Region 5