



Minnesota Pollution Control Agency

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October 2, 2013

Ms. Jane Reyer
1326 E. Skyline Blvd.
Duluth, MN 55805

Dear Ms. Reyer:

Thank you for your comments in reference to the Poplar River Total Maximum Daily Load (TMDL) report. We appreciate your heartfelt concern for the river's water quality and overall watershed health. Your letter indicates three areas of concern: 1) approval of the TMDL 2) reasonable assurance that target loads can be met over time and 3) correlation of report tables.

Minnesota Pollution Control Agency (MPCA) staff believes the TMDL report will meet EPA criteria for approval. Approval is contingent upon meeting the requirements outlined in the federal TMDL program, and the report provides adequate information for each of these requirements. Your reference to an approval based on Best Management Practice (BMP) scenarios agreed to by local landowners is more a function of the detailed implementation plan, which Minnesota requires as a follow-up to TMDL report completion. Such a plan is in development now. Local landowners and resource managers have been involved in this plan development.

MPCA staff also believes the reasonable assurance discussion is adequate to meet EPA criteria for this report element. In addition, recent water quality data review indicates a reduction in turbidity associated with total suspended solids. A number of best management practices have been completed recently, with several in construction this year. The earlier constructed BMPS are likely the reason for water quality improvement. Water quality should continue to improve as these BMPs mature on the landscape. Additional work is being planned via an implementation plan process, as mentioned in the previous paragraph. The local working partners continue to meet on a routine schedule and discuss further improvements at each meeting. The partners include the businesses in the targeted watershed area, including the ski resort owners of Lutsen Mountain Corporation.

Table 4.1 and Table 5.3 of the report have a connection in that they both quantify sediment loads for different purposes. Table 4.1 provides the required calculated loads as daily loads. The units must be in a daily calculated increment per TMDL rules, not a per acre volume or other unit of that type. Of the various sediment sources in the watershed, Table 5.3 is a modeled calculation under various management options, specific to the ski resort ski slopes. Modeling of one ski slope was performed to calculate the range of likely sediment yields produced under the different management options (e.g., healthy and less healthy short vegetation, healthy and less healthy tall vegetation, long unbroken slopes, shortened slopes with water bars). The model output is in tons/acre/year.

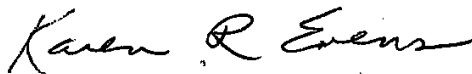
This is perhaps more detail than necessary for a TMDL report, but it helped provide context for the follow-up BMP implementation work. The model components of input data files and output scenarios have been provided to local resource managers (Cook County Soil and Water Conservation District), and the business owners and their consultants. It is anticipated these entities will move forward to make effective use of this information, targeting both vegetation improvements on ski slopes and evaluation

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ski slope overall lengths for BMP improvements. Some of this work is currently underway via University of Minnesota students engaged in a vegetation analysis, again part of the BMP implementation.

As mentioned in the earlier paragraphs, MPCA staff believes the TMDL report will meet EPA criteria for TMDL reports. There has been some additional language added to the final report as an update to the Public Participation section of the report. The next steps in this process are to forward the report on for EPA approval and complete the implementation plan.

Sincerely,



Karen R. Evens
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October 8, 2013

Ms. Kathryn Hoffman
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Mr. Michael Schmidt
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26 East Exchange Street Suite 206
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Dear Ms. Hoffman and Mr. Schmidt,

Thank you for your comments in reference to the Poplar River Total Maximum Daily Load (TMDL) report. We appreciate your concern for the river's water quality and overall watershed health.

Your letter comments on the following topics relevant to the TMDL report:

- 1) TMDL models and equations must be updated
- 2) inaccurate load assignment and inadequate detail of pollutant sources
- 3) lack of reasonable assurance regarding reduction of nonpoint sources

1. TMDL models, calculation of load and data used

The Minnesota Pollution Control Agency (MPCA) committed extensive resources to the completion of the TMDL report. The load is calculated correctly, and the data is used appropriately for approval of a TMDL.

More specifically, the methodologies and reported findings of the two project investigators, RTI and the University of Minnesota (U of MN), were not used to assign a specific load allocation across stream flow regimes. The load allocation defined in the TMDL equation is derived using the duration curve method of assigning load whereby monitoring data is used to identify the TSS surrogate for the turbidity standard and the loading capacities of the TMDL are computed by multiplying the TSS surrogate concentration by the flow duration curve values.

The RTI and U of MN reports and various techniques described in them are used to describe the likely sources of sediment and the magnitude of those sources. Each report attempted to "fit" its overall estimates to the FLUX calculated annual average load of sediment measured in the stream. FLUX is a model used to generate annual load calculations using measured water quality and flow data. It is a reliable and routinely used method for this computation. Federal guidance indicates the discussion of these sources are best estimates, may range from reasonably accurate to gross allotments (40CFR 130.2(g)), and are dependent on the availability of data and appropriate techniques for predicting the loading.

Minnesota protocol guidance indicates that, at a minimum, a single load allocation will be defined which is the case in this TMDL report. Minnesota guidance also states that a general discussion of likely

sources and magnitude of sources should be included in the TMDL report, and should be as specific as the data allows. Specific can be interpreted as sub-watershed load rates, land use activities at the more general scale, or more specific, for example a targeted row crop in agricultural land use. Sources should be defined as precisely as possible, but this is contingent on resources available. (MPCA Turbidity Protocol Guidance and Submittal Requirements). Both investigations provided greater information on land use generated sediment and some specific problem areas on the landscape, slumps and ravines for example.

As noted above, the loading capacities of the TMDL are based on the relationship between TSS and turbidity in a stream, where the TSS concentration is used as a surrogate in calculating loads for the turbidity standard. Inclusion of the more recent sampling data would not affect the calculation of the loading capacity following this approach. The calculation of current loads using recent data would indicate that there are fewer exceedances of the TMDL and smaller load reduction needs. Simply put, the stream is "less impaired" for TSS under more recent data evaluation.

2. Inaccurate load assignment, inadequate pollution source assessment

The TMDL accurately calculated loads using the load duration curve method, accurately assigned a wasteload allocation (WLA), and accurately assigned a load allocation. Pollution sources were adequately investigated and reported on.

The TMDL accurately reported the National Pollutant Discharge Elimination System (NPDES) permitted entities in the watershed. EPA defines the WLA as the portion of a receiving water's loading capacity that is allocated to one of its existing or future point sources of pollution. (40 CFR 130.2(h)). Caribou Highlands Resort is the only existing permitted point source of process wastewater in the watershed and an allocation was calculated for them. Construction stormwater for future development must also be assigned a wasteload allocation. A construction stormwater wasteload allocation was defined from the best estimates of recent development and anticipated development described in documents provided by Cook County Planning and Zoning and a review of acres disturbed by recent construction stormwater permits for Cook County projects.

The stormwater conveyance systems of businesses in the watershed do not meet the criteria required for obtaining a NPDES permit. The conveyances are not publicly owned as in the Municipal Separate Storm Sewer Systems (MS4) program, nor do they qualify as an industrial stormwater permitted site based on the definitions of the Standard Industrial Codes, which define industrial permitted sites. Lastly, they do not meet the MPCA definition of process wastewater, and therefore, are not a sector to be permitted under that program.

Pollution assessment relative to the ski slopes and snowmaking was assessed in greater detail in the U of MN reports. The first U of MN report describes specific field investigations conducted on the ski slopes pertaining to soils, operations and management. This data was factored into the subsequent modeling, which was processed at both a watershed scale and individual hillslope scale. Hillslope data was reported out in detail for one hillslope, to provide insight to the potential impacts of ski slope management decisions. The implementation section of the TMDL report includes a recommendation that further work to investigate and improve ski slope impacts is warranted.

3. Assessment of critical conditions contributions, source magnitude differences and reasonable assurance of reductions

TMDLs are not required to calculate contributions from each source at critical flows during the critical season. The TMDL adequately reported out critical conditions and during the source investigation provided additional modeling to inform reviewers on the impacts from the larger land use activities in greater detail. For example, ski slopes were investigated across the various types of management such as short or tall vegetation in poor to excellent growth conditions, shorter or longer unit lengths of ski slope runs, and expected sediment yields from varying management. Information was also provided, in a tabular format, as to how additional snowmaking would influence sediment yield, thus providing a sense of the range of impact that could occur during the critical condition period. The TMDL implementation discussion indicates further work should be completed to assess ski slope conditions and management in order to reduce potential impacts.

The TMDL reported key findings from two reports on non-point source estimates. There is reasonable agreement between reports regarding the overall sources. The U of MN report provides additional detailed insight to specific watershed sources and also reports out a reasonable discussion regarding differences between the reports.

It is correct to state the reports differ, and that the U of MN report contains additional information. The RTI report describes the first TMDL project work to define the various sources of sediment. The U of MN work was completed to provide more detailed and refined information about the sources of sediment described by the RTI report. For example, in the U of MN review, roads were defined as a unique land use element to investigate; whereas, it had been lumped into a general "development category" in the RTI report. The U of MN investigation used field derived information as inputs to the modeling, again, another refinement. The RTI process did not, and chose to use default values from the model. The U of MN second report also provides perspective on linked sediment sources. It concludes that land managers should be alert to and investigate "flow pathways", whereby concentrated areas of runoff funnel water and create erosion along a connected path of developed uplands, the ski slopes, the utility roads and trails, the forest and eventually the river channel. The differences between the reports, including the 15% difference noted in the comment letter, are discussed in the final U of MN report and are combinations of the factors mentioned above and more. Differences in the reports do not invalidate the discussion about likely sources of sediment or magnitude of sources; rather, they serve to improve the conversation about targeting future work for water quality improvement.

Reasonable assurance is discussed in several sections of the TMDL report. Existing permit programs are legitimate assurances that water quality remains a focus. The most recent renewal of the Caribou Highlands Resort wastewater permit includes language to mitigate an impact to the sensitive "megaslump" area. Cook County Planning and Zoning must review permits within the context of an ongoing mitigation plan for development in the area which recommends Low Impact Design development strategies. Construction stormwater permits include a requirement for increased BMPs for impaired waters. The county water management plan is an effective tool for defining where staff will focus limited resources. As a citizen developed plan, it allows citizens to express concerns about water management to various resource managers, and evaluate how well goals of their county plan are being met. It is required for access to various funding sources. To date, approximately \$1.5 million in private and public funds have been spent on Best Management Practices to improve the river water quality.

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The TMDL report references the implementation plan and in general discusses funding sources and the organizational structures that will continue to collaborate on improvements. The draft implementation plan defining more specific work in the watershed, with schedules and budgets is nearing completion. Estimated load reduction is included in the plan, and is typically required for any budget process, whether grants or locally derived dollars. A watershed organization of landowners, local government and resource managers from various organizations meets bimonthly. With this momentum, it is likely the water quality improvements to the river should continue.

As mentioned and in conclusion, MPCA staff believes the TMDL report will meet EPA criteria for TMDL reports. There has been some additional language added to the final report as an update to the Public Participation section of the report. The next steps in this process are to forward the report on for EPA approval and complete the implementation plan.

Sincerely,



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KRE:kmk

cc: Trevor Russell, Friends of the Mississippi River
Barry Draskowski, Minnesota Division Izaak Walton League of America
Steve Morse, Minnesota Environmental Partnership
John Lenczewski, Minnesota Trout Unlimited
LeRoger Lind, Save Lake Superior Association
Richard Staffon, Duluth Chapter of the Izaak Walton League
Brad Sagen, Northeastern Minnesotans for Wilderness