



MESERB

Minnesota Environmental Science
and Economic Review Board

Using science and economics to improve environmental regulations

March 28, 2020

VIA EMAIL ONLY

International Joint Commission
U.S. Section
1717 H Street Northwest, Suite 835
Washington, DC 20006

RE: Comments on the International Red River Board's recommended nutrient concentration objectives and load targets for the Red River of the North.

Dear Commissioners:

I am writing on behalf of the Minnesota Environmental Science and Economic Review Board ("MESERB"), a municipal joint powers organization with more than 50 member cities, sanitary districts, and public utilities commissions in Greater Minnesota that own and operate wastewater treatment facilities. MESERB's mission is to work to protect our state's water resources by ensuring that water quality regulations that impact our communities are scientifically based, cost-effective, and produce meaningful benefits to water quality. A number of our members are located within the Red River of the North's drainage basin and hold National Pollutant Discharge Elimination System ("NPDES") permits allowing them to discharge into the Basin. In addition to the members who discharge directly to the Red River, we have members across the state of Minnesota with a vested interest in the outcome of these proceedings due to the precedent these load targets and concentration objectives have the potential to set.

The International Joint Commission ("IJC") should adopt the total phosphorus load target for the Red River.

We strongly support the adoption of the total phosphorus ("TP") load target. The developed target for TP has been determined necessary to protect Lake Winnipeg, and our members want to do their part to improve conditions in the lake.¹ There is broad support among the communities along the Red River and across the state to develop and implement an innovative permitting framework that the cities and the Minnesota Pollution Control Agency ("MPCA") are working to finalize. This includes an effort for cities to work with agricultural groups and watershed districts to develop a phosphorus management plan aimed at reducing phosphorus in the Red River and protecting Lake Winnipeg. We believe this presents a unique opportunity to bring municipal wastewater, agricultural groups, and watershed districts together to address water quality issues and could serve as model for other areas of the state in the future. We see finalization of a TP load target as a critical and foundational component of this strategy.

¹ Bunting, L. P.R. Leavitt, G.L. Simpson, B. Wissel, K.R. Laird, B.F. Cumming, A. St. Amand, and D.R. Engstrom. 2016. Increased variability and sudden ecosystem change in Lake Winnipeg, Canada, caused by 20th century agriculture. *Limnology and Oceanography* 61: 2090-2107.

Concerns relating to the load target for total nitrogen and the concentration objectives for both total nitrogen and total phosphorus.

There are several concerns we have relating to the proposed load target for total nitrogen (“TN”) as well as the concentration objectives for TP and TN. Our primary concerns stem from the fundamental differences between the proposed objectives and targets and Minnesota’s River Eutrophication Standards (“RES”) and the scientific deficiencies in the technical analysis utilized to develop the concentration objectives and the load targets.

The proposed concentration objectives for TP and TN and the TN load target are not compatible with Minnesota’s regulations or key scientific findings made by the MPCA.

Our organization has worked extensively with the MPCA over the last decade on the development of Minnesota’s eutrophication water quality standards for both rivers (the RES) and lakes. Given our long-standing involvement and expertise in these matters, we are very concerned by MPCA’s support of the International Red River Board’s (“IRRB”) proposals given the fundamental differences that exist between Minnesota’s standards and the IRRB’s proposed objectives and targets, and the lack of scientific rigor utilized to develop the recommendations.

The MPCA has characterized the proposed concentration objectives and TN load target as complimentary to state law. We strongly disagree with this characterization. In a letter to a subset of our elected officials as well as in their public comments in this process, MPCA claimed that the IRRB’s proposed TP and TN concentration objectives for the Red River are “in alignment with our state adopted and USEPA approved eutrophication water quality standards” and that though the RES are based on a causal variable and response model (phosphorus and algal growth, respectively), that “that does not mean that a downstream phosphorus concentration goal, such as the one proposed for the Red River, is inappropriate or conflicts with Minnesota’s RES.”² These claims are misleading.

For example, the IRRB’s proposed total phosphorus and total nitrogen concentration objectives directly conflict with Minnesota’s RES. First, the IRRB’s proposal recommends a total nitrogen concentration and load target, whereas Minnesota’s RES do not regulate total nitrogen in the Red River.³ Second, the IRRB’s proposal applies its total phosphorus objective as a stand-alone criteria and does not tie it to the demonstration of the negative environmental impacts of eutrophication.⁴ In fact, the Red River is not even considered impaired under Minnesota’s RES.⁵ The MPCA acknowledges these clear conflicts between the IRRB proposal and state rules in its comment

² Comments on proposed recommendations for nutrient pollution targets for the Red River, Katrina Kessler, Minnesota Pollution Control Agency (Feb. 28, 2020).

³ See Minn. R. 7050.0222.

⁴ See Comparison between the IRRB’s proposed nutrient concentration objectives and load targets with Minnesota’s River Eutrophication Standards (attached).

⁵ Minnesota Impaired Waters List, Minnesota Pollution Control Agency, (2020), available at <https://www.pca.state.mn.us/water/minnesotas-impaired-waters-list>.

letter,⁶ but nevertheless persists in its claim that the IRRB proposal does not conflict with state standards.

Going a step further, the MPCA's comments attempt to support the IRRB's proposal to include a TN water quality objective for the Red River by referring to its general understanding that nitrogen is a nutrient that contributes to eutrophication.⁷ MPCA's general recognition that TN *can* contribute to eutrophication is irrelevant in this case, absent a site-specific determination that TN reduction is necessary to address eutrophication specifically in the Red River or Lake Winnipeg—which does not exist in the record presented by the IJC.

Further, the MPCA has previously determined, based on years of scientific study, that TN reduction is *not* necessary to protect Minnesota's rivers from eutrophication—including the Red River. For example, the MPCA's Statement of Need and Reasonableness for the RES (the regulatory document that outlines the technical and legal justification for regulations) states the following with respect to the need to regulate for TN:

As for total nitrogen, the MPCA conducted various statistical test[s] to determine if Minnesota-specific data suggested the need for TN standards to protect against river eutrophication. *Such a need was not identified by MPCA and the Agency focused on TP as the stressor leading to river eutrophication since TP is the primary nutrient that limits the growth of excessive amounts of suspended algae (chlorophyll-a) in Minnesota rivers and streams.*⁸

It is of grave concern to our membership that the MPCA would support any proposed water quality objectives and load targets that not only conflict with and are more restrictive than our existing state regulations, but also directly contradict the MPCA's own scientific findings.

The RESPEC Report relied upon by the IRRB to develop the TP and TN concentration objectives failed to identify biological thresholds in contrast to U.S. EPA guidance and demonstrated MPCA practice.

The IRRB's proposed concentration objectives for TN and TP are not only fundamentally different from Minnesota standards, but the methods utilized to develop them are inconsistent with the approach taken by the MPCA and recommended by U.S. EPA.

For example, the RESPEC report relied upon by the IRRB and by extension, the MPCA, failed to identify biological thresholds at which adverse impacts to designated uses occur in the Red River

⁶ Comments on proposed recommendations for nutrient pollution targets for the Red River, Katrina Kessler, Minnesota Pollution Control Agency (Feb. 28, 2020).

⁷ See generally Comments on proposed recommendations for nutrient pollution targets for the Red River, Katrina Kessler, Minnesota Pollution Control Agency (Feb. 28, 2020).

⁸ Statement of Need and Reasonableness, Eutrophication Standards for Streams, Rivers, Lake Pepin, and Navigational Pools, Book 2, Minnesota Pollution Control Agency, 103, available at <https://www.pca.state.mn.us/sites/default/files/wq-rule4-06f.pdf> (emphasis added).

(or Lake Winnipeg, for that matter) when developing the TP and TN concentration objectives.⁹ The Consensus Report commissioned by the IRRB states that a key goal of the RESPEC analysis was to identify biological thresholds and goes on to acknowledge that the RESPEC analysis failed to do so.¹⁰

For our members, this is a critical concern: without identifying specific biological thresholds in the Red River, there is no clear scientific basis to demonstrate that the nutrient targets are necessary or sufficient to protect the River. And without a threshold analysis, we cannot be confident that any expenditures made to comply with those concentration targets will have a meaningful environmental impact.

The Red River cities' consultants from Hall & Associates, the third party-reviewer hired by the cities, Dr. Steven Chapra, and the IRRB's peer review *all* agreed that that the IRRB failed to identify biological thresholds. Dr. Chapra identified this concern as the most critical from his perspective.¹¹ In fact, the IRRB's peer reviewer specifically stated that a "[a] key goal of the RESPEC report was 'to develop a stressor-response model for the Red River and to use the model to identify biological thresholds/criteria which identify the thresholds at which biologic response variables in the Red River respond to nutrients'" and that the RESPEC analysis "did not identify specific biological thresholds . . ."¹² In other words, the IRRB's own peer reviewer specifically found that that IRRB's consultant failed to accomplish a "key goal" of its work to identify specific biological thresholds. We believe this is a critical deficiency with the IRRB's proposed concentration objectives, and as a result, the objectives should be withdrawn.

The proposed TN load target is not scientifically defensible or necessary to protect Lake Winnipeg.

The purpose of the proposed TP load target according to the IRRB is the protection of Lake Winnipeg. However, based upon our review of the background documents provided on the IJC website, we could not find and clear, site-specific analysis demonstrating that TN reductions—in addition to TP reductions—are necessary to mitigate eutrophication in the Lake. In fact, documents cited by the IRRB's report suggest that phosphorus, rather than nitrogen, is the primary nutrient driving algal growth in Lake Winnipeg and that the "priority should be placed on achieving reductions of phosphorus since the benefits to Lake Winnipeg are more clear and unequivocal."¹³

The IRRB's analysis also failed to take into consideration more recent studies of the Great Lakes and other freshwater systems which demonstrate that regulation of TN is not necessary or cost-

⁹ Walter Dodds and Helen Baulch, Consensus Report for the International Joint Commission on RESPEC 2016 Report, The Development of a Stressor-Response Model for the Red River of the North, 8 (2019) available at https://ijc.org/sites/default/files/2019-10/ConsensusReport_March8Final.pdf.

¹⁰ *Id.* at 1.

¹¹ See Letter to the Chairs of the International Joint Commission from Dr. Steven Chapra, 7 (Nov. 26, 2019) (attached).

¹² Consensus Report for the International Joint Commission on RESPEC 2016 Report, 1, 8 (2019).

¹³ See, e.g., Reducing Nutrient Loading to Lake Winnipeg and its Watershed: Our Collective Responsibility and Commitment to Action, Report to the Minister of Water Stewardship, Lake Winnipeg Stewardship Board, 37, 46 (Dec. 2006).

effective to address eutrophication.¹⁴ This apparent oversight is a significant concern given the IJC's extensive work on addressing eutrophication in the Great Lakes. Finally, based on our review of the public comments submitted in this matter, it appears that there is a broad consensus that the IJC should focus on TP and withdraw the proposed objectives and target for TN. We agree and likewise request that the IJC withdraw the recommendation to establish water quality objectives or targets for TN.

Concerns over economic impact and precedent of adopting water quality objectives and targets for TN in the Red River.

As stated above, Minnesota's municipal wastewater treatment plants ("WWTPs") are not currently regulated for TN for purposes of preventing eutrophication under either state or federal law.¹⁵ We are concerned that if the IRRB's proposed water quality objectives and load targets for TN are approved, the MPCA will seek to enforce those requirements in the Red River and will pursue additional efforts to regulate TN in other rivers throughout the state based on similar grounds as proposed by the IRRB. This concern is valid given that the MPCA has sought to impose mandatory requirements on municipal WWTPs based on IJC recommendations in the past.¹⁶ As other commenters have noted, the economic impacts of regulating TN in addition to TP can be severe for municipal WWTPs.¹⁷ A decision to regulate TN for the purposes of eutrophication in the Red River or other rivers in Minnesota would have multi-million dollar impacts for individual WWTPs in the Red River Basin and similar impacts throughout the state. We are especially concerned that MPCA, as a member of the IRRB, would support TN water quality objectives or targets for the Red River without demanding that the IRRB perform a site-specific threshold analysis indicating that a TN objective or target is necessary to protect designated uses in the Red River or Lake Winnipeg.

Conclusion

Given the significant concerns identified by Minnesota cities and municipal groups and the potential economic consequences for municipal WWTPs, we believe that it is unreasonable for the IJC to accept the IRRB's proposed concentration objectives for phosphorus and nitrogen and the

¹⁴ See e.g., David W. Schindler, The Dilemma of Controlling Cultural Eutrophication of Lakes, 279 Proceedings of the Royal Society B 4322 (2012), available at <https://royalsocietypublishing.org/doi/pdf/10.1098/rspb.2012.1032>; Alice Dove and Steven Chapra, Long-term trends of nutrients and trophic response variables for the Great Lakes, Limnology and Oceanography, 717 (2015), available at <https://aslopubs.onlinelibrary.wiley.com/doi/epdf/10.1002/lno.10055>; D.W. Schindler et al., Reducing Phosphorus to Curb Lake Eutrophication is a Success, 50 Env'tl. Sci. and Tech. 8923, (Aug. 6, 2016), available at <https://pubs.acs.org/doi/pdf/10.1021/acs.est.6b02204>.

¹⁵ See Minn. R. 7050.0222; 40 C.F.R. 131.4 (delegating the establishment of water quality standards to the states); 40 C.F.R. subp. D.

¹⁶ Memorandum to Lisa Thorvig, Shannon Lotthammer, Wendy Turri, and Katrina Kessler from Steve Weiss and Denise Oakes, The 1909 Boundary Waters Treaty and MPCA Staff Recommendations for Total Phosphorus Effluent Limits for NPDES/SDS Dischargers in the Red River Basin (Dec. 4, 2012).

¹⁷ See Comments on the International Red River Board's recommended nutrient concentration objectives and load targets for the Red River of the North, Cities of Breckenridge, Moorhead, Roseau, and Warroad, MN, (2020); Preliminary Assessment of potential cost impact for the City of Moorhead, MN (Feb. 21, 2020).

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load target for nitrogen at this time. Instead, we urge the IJC and IRRB to focus its efforts on the development of a phosphorus load target for the Red River designed to protect Lake Winnipeg, and to work with all stakeholders to develop a strategy to meet that target.

We appreciate the opportunity to submit comments and for your consideration. If you have any questions or concerns regarding the above comments, you can contact me at jpaulson@ci.hutchinson.mn.us or (320) 234-5682 or our representative in this matter, Daniel Marx at dmmarx@flaherty-hood.com or (651) 259-1907.

Sincerely,

John Paulson
MESERB Vice President
Project/Environmental/Regulatory Manager
City of Hutchinson, Minnesota

cc. Katrina Kessler, Minnesota Pollution Control Agency
Jim Ziegler, Minnesota Pollution Control Agency