UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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AUG 30 2019

Ref: 8WD

Mike Renouf
Environment and Climate Change Canada
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1783 Hamilton Street
Regina, Saskatchewan
Canada
S4P 2B6

Colonel Karl D. Jansen
U.S. Army Corps of Engineers,
Saint Paul District
180 E 5th Street, Suite 700
St Paul, Minnesota 55101

Re: Strategic Goal 2. Water Quality: Compliance with Water Quality Objectives at International Boundary

Dear Mr. Renouf and Colonel Jansen:

The US Environmental Protection Agency (US EPA) appreciates the opportunity to review the findings of the independent peer review of the 2016 RESPEC report: "The Development of a Stressor-Response Model for the Red River of the North" (RESPEC Report) and the Water Quality Committee's updated Proposed Nutrient Concentration Objectives and Loading Targets for the Red River at the US/Canada Boundary (July 2019). Because I am unable to attend the September meeting of the International Red River Board (IRRB) and the EPA will only be represented via teleconference for the water quality session, we wish to reiterate our support for the findings of the peer review and commend the Water Quality Committee on their recent work to conduct this independent analysis. With this letter, I also want to express support for the board's approval and acceptance of the Water Quality Committee's updated summary report.

Additional detail and comments on the peer review and the Proposed Nutrient Concentration objectives is below:

- *Support for Stressor-Response Model*: Nationally, the EPA has endorsed the use of stressor-response models to derive numeric nutrient criteria.[1] The RESPEC report implements a stressor-response approach for the Red River and identifies nutrient response thresholds for total

[1] Using Stressor-response Relationships to Derive Numeric Nutrient Criteria. EPA-820-S-10_001. November 2010. https://www.epa.gov/sites/production/files/2018-10/documents/using-stressor-response-relationships-nnc.pdf.

phosphorus and total nitrogen. The EPA supports the approach, and the underlying analyses, used to establish nutrient thresholds for the Red River and agrees that the findings of the independent peer review further validate the approach. While the peer reviewers note that more stringent targets may be merited for the Red River, the EPA approved similar nitrogen and phosphorus concentrations as applicable water quality standards for Montana's plains streams, based on in-situ dosing studies that established a stressor-response gradient.[2] In 2015 the EPA approved numeric nutrient criteria for total nitrogen (concentrations ranging from 440 to 1,300 µg/L TN) and total phosphorus (concentrations ranging from 80 to 150 µg/L TP) as protective of aquatic life uses in Montana plains wadeable streams.[3] Studies done on Montana's plain streams coupled with work done on Minnesota streams/rivers are comparable to the values being proposed for the Red River.

- *Need for Numeric Nutrient Criteria for both Nitrogen and Phosphorus Criteria:* The EPA considers the adoption and implementation of both TN and TP criteria a requisite to adequately address nutrient enrichment. Within Region 8 states, Colorado, Montana and Utah have conducted studies that demonstrate that primary production (i.e., algal growth) in many streams/ rivers and lakes/reservoirs is either primarily limited by nitrogen or co-limited by both nitrogen and phosphorus. Within EPA Region 8, all states working on nutrient criteria have adopted standards for both TN and TP. Nationally, the EPA has stressed the importance of adopting numeric nutrient criteria for both nutrients. In 2015, the EPA released a fact sheet that reached the following conclusion: "Nutrient pollution is a major cause of degradation in U.S. waters. Given the dynamic nature of aquatic systems, the need to protect downstream waters, and the threat of harmful algal blooms, the weight of the scientific evidence supports the development of nutrient criteria for both N and P."[4]

- *Downstream Use protection*: Modeling work completed for Lake Winnipeg indicates that downstream uses will likely drive upstream nutrient reductions. Analyses included in the Water Quality Committee's updated Proposed Nutrient Concentration Objectives and Loading Targets for the Red River at the US/Canada Boundary (July 2019) indicate that the proposed in-lake targets would be exceeded during high flow years for total phosphorus (loading target exceeded in 4 of the 19 years) and nitrogen (loading target exceeded in 7 of the 19 years). Based on this information, and the peer reviewer's observations that the targets may not be stringent enough to protect downstream uses, the EPA supports the recommendation of continued refinement as new data emerges and the commitment to adaptive management.

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[2] Suplee, M.W., Sada, R.H., Feldman, D. and G. Bruski. 2016. Whole-stream Nitrogen and Phosphorus Addition Study to Identify Eutrophication Effects in a Wadeable Prairie Stream. Helena, MT: Montana Dept. of Environmental Quality.
[3] EPA Action on Montana's Numeric Nutrient Criteria and Variance Rules. February 26, 2015.
[4] Preventing Eutrophication: Scientific Support for Dual Nutrient Criteria. https://www.epa.gov/sites/production/files/documents/nandpfactsheet.pdf.

Any questions on these comments may be addressed to knowledgeable contacts on my staff: Tina Laidlaw (laidlaw.tina@epa.gov; 406-457-5016) and/or Kris Jensen, Water Quality Subcommittee member (jensen.kris@epa.gov; 303-312-6237) I look forward to hearing the outcome of the IRRB discussions on this topic and express my regret in being unable to attend.

Sincerely,

Johanna Miller, Chief
Clean Water Branch, US EPA
U.S. Member, International Red River Board

cc: Nicole Armstrong
Department of Sustainable Development, Manitoba CA

Jim Ziegler
Minnesota Pollution Control Agency