Grand Council Treaty #3
Territorial Planning Unit
237 Airport Rd
Kenora, ON P9N 0A1

International Joint Commission
234 Laurier Ave W
Ottawa, ON K1P 6K6

September 1, 2017

RE: Comments on draft changes to the Rainy and Namakan Lakes Rule Curves.

Background:

The recommendations below are the comments put forth by the Territorial Planning Unit (TPU) of Grand Council Treaty #3 (GCT3). The comments are regarding the draft changes to the Rainy and Namakan rule curves proposed by the International Joint Commission's (IJC) response to the International Rainy and Namakan Lakes Rule Curve Study Board Final Report.

The Rainy and Namakan Lakes Rule Curves are the primary regulatory tool for managing water levels and flows for the two lakes. They provide a target range, known as the band, for the level of the lake for every day of the year. The IJC has used rule curves for managing levels of these two lakes since 1949. The most recent versions were adopted in 2000 and, as a result, are known as the 2000 Rule Curves. After 15 years of use, it was recommended to review the 2000 rule curves. The TPU has been involved in the Rainy and Namakan Lake Study board process since the onset, working with the study board in the public advisory group as well as attending the draft decision workshops throughout the study.

Recommendations:

In light of the IJC's recommended use of Alternative C rule curve, the TPU is in support of these rule curve changes. The TPU supports the ideology that environmental protection outweighs that of economic prosperity. The use of Alternative C showed that ecological enhancements could be made in the rule curve management process through reducing water level drawdown over the winter. These benefits include: over-winter survival of benthic invertebrates, spawning success for fall-spawning fish, and improved winter survival for Muskrat, that will then reduce the spread of invasive hybrid cattail. Throughout the Study Board process, it was important to see these key ecological benefits

acknowledged and implemented in the use of Alternative C. The TPU supports this recommendation from the IJC and Study Board.

Throughout the Study Board and IJC hearing process there were many viewpoints, recommendations and ideas heard from scientists, organizations and other individuals throughout the Rainy and Namakan Lake basin. One of these recommendations has been to increase freshet and ice monitoring in the basin to better manage water levels. Increased freshet and ice monitoring would increase efficiency in modelling and flood predictors leading to better water management decisions in the spring. This would aid in reducing the ecological and economic impacts of flood years. The TPU recommends investigation into increased freshet and ice monitoring in the Rainy and Namakan Lakes basin.

The Water Levels Committee (WLC) of the International Rainy Lake of the Woods Watershed Board (IRLWWB) is charged with ensuring that IJC orders for the operation of the dams on the Rainy River and outlets of Namakan Lake are followed. Through the Study Board and IJC process it has been recommended that the WLC be empowered to actively target specific areas of the rule curve band to benefit various interests as the opportunity arises. The TPU conditionally supports the empowerment of the WLC on the condition of increased involvement from the Anishinaabe Nation of Treaty #3. The TPU recommends a permanent position be made on the IRLWWB and WLC for GCT3. This will ensure that Aboriginal and Treaty rights are at the forefront of targeting specific areas of the rule curve band and that the Anishinaabe Nation of Treaty #3 are partners in the water management of the Rainy and Namakan Lakes basin.

The IJC has recommended that the WLC of the IRLWWB be provided with a Terms of Reference, develop a communications strategy, the WLC have formal pre-spring engagement, and collaboration with indigenous communities is increased in the Rainy and Namakan Lakes basin. The TPU supports these recommendations and additionally recommends working in partnership with GCT3 to achieve desired results of this strategy. As rightsholders in the basin, the Anishinaabe Nation of Treaty #3 should be formally involved in the water management process. GCT3 can provide the necessary support, knowledge and community partnerships to help guide the IJC in continuing to partner with the Anishinaabe Nation of Treaty #3. The TPU recommends that GCT3 be involved in aiding to develop the Terms of Reference for the WLC and communications strategy for the basin. For the increased collaboration with indigenous communities the IJC should work with GCT3 to develop a Treaty #3 communications strategy to get important information on water levels, wild rice and fish spawning as well as communicate the activities of the IJC to Treaty #3 communities. Additionally, the IJC should partner with GCT3 to guide a pre-spring engagement for the Anishinaabe Nation of Treaty #3.

In summary, the TPU recommends:

1) The use of Alternative C as the rule curve change.
2) An increase in freshet and ice monitoring in the Rainy and Namakan Lake Basin.
3) The empowerment of the WLC on the condition that GCT3 is granted a permanent position on the IRLWWB and WLC.
4) The IJC partner with GCT3 in the following strategies: WLC terms of reference, communications strategy, pre-spring engagement and increased collaboration of indigenous communications.

The TPU acknowledges the hard work and effort put in by the IJC and Study Board throughout the Rule Curve Review process and looks forward to a continuing partnership with the IJC to better water level management in the future for the Rainy and Namakan Lakes basin.

Lucas King
Water Resource Specialist
Territorial Planning Unit
Grand Council Treaty #3 Kenora, ON
Phone: 1-807-548-4214 ext. 218
Email: water@treaty3.ca

Name: Bruce Hamilton

Date of Submission: August 31, 2017

Location: Fort Frances, Ontario

Comment:

I would like to thank the IJC for hosting the open house in Fort Frances On. which I attended. I grew up on a farm on the Rainy River some 25 kms. west of Fort Frances Most of my adult life, I have live on Rainy Lake.

I agree with most of the recommendations except 4 and 9. I agree with the IJC's position on 4. My concern with 9 is that the intent is to remove these restrictions for the release of more water during high water conditions on Rainy Lake. I fear this does not take into consideration the effects on the water shed below the dam at Fort Frances. The town of Rainy River suffered from flood conditions in 2002 and yet I attended a meeting were residents on the South shore of Rainy Lake were criticizing the WLC for not dumping more water at this time.

I would like to sum up my comments with a personal statement. As a resident who chooses to live on the lake, I feel that I have a responsibility to others and the environment to take into consideration when I am building any structure. I live on a water body whose levels fluctuate. If I choose to be able to step from my deck to my dock, I will likely be able to sit on my deck and dangle me feet in the lake at some time!

Name: Darrell Wesenberg

Date of Submission: September 1, 2017

Location: Kabetogama, Minnesota

Comment:

To: International Joint Commission

I appreciate the opportunity to comment on the 2017 Recommendations for Changes to the Rule Curves for the Rainy-Namakan lakes system. We have been property owners on Lake Kabetogama for more than 25 years. My late wife and I have resided on said property from five to six months each year since our retirement in 2001. I have vacationed annually at the same location on Lake Kabetogama since 1952, primarily in June, but also in the fall. I attended the public hearing in International Falls on August 17, 2017. I have attended a number of previous hearings, mostly at International Falls, but also at Kabetogama. At least twice I have spoken briefly at these hearing in years prior to 2017.

My past comments and my present view are as follows: Some years the water is too high from my point of view, and some years it is too low, but overall the lake levels are satisfactory and vastly improved compared to many years prior to the establishment of the current rule curves and I am well satisfied with the current management of the water resource.

Although the above "comment", which is essentially a verbatim version of my earlier public comments, is perhaps an adequate written comment, I feel compelled to add additional "observations". First – good luck in your attempts to do what is essentially impossible, i.e., make everyone happy with the necessity of accurately and without fail predicting precipitation events. I believe most of the people directly involved or knowledgeable about Lake Kabetogama and the Namakan basin would largely concur with my views expressed above. (Incidentally, everyone I know uses the term Lake Kabetogama and not Kabetogama Lake.) I am concerned that the accelerated drawdown in October may mean that I, and others with relatively shallow frontage, will have access issues late in the season. Additionally, many if not most of the navigation aides are removed relatively early in the fall which coupled with an earlier drawdown may result in inexperienced or careless Kabetogama visitors encountering unexpected rock hazards more frequently. It is not clear to me, but a seemingly "new" consideration is that the earlier drawdown may be favorable to the establishment and maintenance of a muskrat population that would help control the Kabetogama cattail population. I believe it is being optimistic to expect the muskrat population to readily adapt to the modest change in timing of the drawdown while also coping with a healthy otter and mink population that might welcome a supplement to their normal diet of crayfish and fish.

The dissatisfaction with the current management seems to involve primarily Rainy Lake residents. I note in the four-page summary provided at the 2017 hearing that the 11 Recommendations include five direct references to Rainy Lake and none to the Namakan basin and/or Lake Kabetogama. One person at the August 17 hearings essentially (my recollection is in fact very directly) said that everything was fine until the Kabetogama people caused problems. In my view if you have property that is regularly impacted by high water, by definition you have built on a flood plain. If so, this would suggest a zoning issue rather than a water

management issue. Perhaps some of the current dissatisfaction stems from the high water and associated damage in 2014, which I believe was largely unavoidable. (I recently heard a state meteorologist state that June 2014 was the wettest month on record for the state of Minnesota.) As I recall a major issue involving Rainy Lake is the natural restriction in the volume of water that flows from the Rainy Lake outlet. It should also be noted that Lake Kabetogama property was also severely damaged in 2014 and in my circumstance, despite concerted efforts to maintain our dock, the structure required extensive, and from my point of view, expensive repairs. This was not a one-time event, e.g., I noted in a cabin log that in early June 2001 our dock was essentially all under water.

In conclusion, I favor maintenance of the present rule curves, but if that is not feasible, I would suggest a reduction in the drawdown rate in October involving the Namakan basin. Again, thank you for the opportunity to comment on the 2017 Recommendations for Changes to the Rule Curves for the Rainy-Namakan lakes system.

Name: Jeffrey Kantor

Date of Submission: August 18, 2017

Organization: University of Notre Dame

Location: Notre Dame, Indiana

Comment:

See comments attached.

IJC Public Hearings on the Rainy and Namakan Lakes Rule Curves

Jeffrey Kantor

Support for Rule Curve Option C

Delivered at IJC Public Hearings in Fort Frances, August 16, 2017

My name is Jeffrey Kantor. I am here both as a representative of the Rainy Lake Property Owners Association and as an academic with research interests in the control of natural watersheds. To provide perspective on my comments regarding the recommendations of the Study Board, I'd like to take a moment to introduce myself.

I am currently in my 37th year as Professor of Chemical Engineering at the University of Notre Dame. My research interests have always been in the control of complex processes for which I have received a number of grants and recognitions including the National Science Foundation Presidential Young Investigator Award, the Dreyfus Foundation Teacher-Scholar Award, and I have directed over 25 PhD students. In my career at Notre Dame I've served as Department Chair, University Vice President, Vice President for Research, and Dean of the Graduate School.

I was born and raised in International Falls. Since 2009 my wife and I have been summer residents on Rainy Lake. In 2014 when, like many other property owners on the Lake, we suffered significant flood damage to our property. As an engineer, a natural question for me was whether that flooding had to occur given the control dams located within the watershed. Was the flooding inevitable or was it a result of poor policy?

That question has consumed a significant portion of my time over the past three years. Since 2014 I have been come to know professional staff at Environment Canada and the US Geological Services tasked with the Rule Curve Review. My contributions have been in the form of presentations and papers at the annual scientific conferences held in-basin, and recently in peer reviewed papers and conferences.

Based on that work, in my view the 11 recommendations of Study Board are sound, incorporate the best available science and engineering, and are in the best interests of both property owners and the watershed.

In particular, Rule Curve Option C provides two key benefits:

a. Since 2000, high water events have occurred more frequently and with greater intensity. The high water events are attributable to several factors, the dominant one being a shift in summer precipitation to earlier months. Late ice out combined with more early rain has become a recipe for flooding events. With Rule Curve Option C, if in a given year there is substantial evidence predicting a flooding event, the local water levels committee would be empowered to act more quickly and effectively in response to actual events.
b. The second feature addresses the issue of maintaining a healthy fishery, a healthy ecosystem, and control of invasive species, particularly hybrid cattails which are impacting the riparian rights of property owners both on Rainy Lake and the Namakan Basin. Decreasing winter drawdowns will improve the survival of sentinel species essential to a healthy ecosystem, and provide the interannual variability needed to check the growth of invasive cattails.

In my view, the effects of climate change in the basin make these changes essential. Since 1970 ice out dates are now one week earlier, winters are warmer, precipitation has shifted to more intense storms occurring earlier in the summer. Collectively, these changes have put more stress on existing control structures

and ecosystem. Continuing business as usual would lead to even more frequent flooding events, and even more adverse ecological outcomes. As recommended by the Study Board, adopting the principles of Adaptive Management is the best means of addressing these changes.

For these reasons, I urge you to accept the recommendations of the Study Board regarding adoption of Adaptive Management and Rule Curve Option C.

Thank you.

Comments Regarding Adaptive Management

Delivered at IJC Public Hearings in International Falls, August 16, 2017

Previously I had the privilege of speaking to you about the benefits of adopting Rule Curve Option C. This evening I'd like to speak in support of the recommendation to create an Adaptive Management plan for the watershed.

First, why Adaptive Management?

There should be no question climate and environmental change has impacted this watershed. Winters are warmer, summer precipitation occurs in fewer but earlier and more intense storms. Recent ice out dates are, on average, a week earlier but now occur anywhere from early April to late May. Less obvious is that average wind speeds have fallen by 25%.

A consequence of these changes has been a disconnect of annual weather events from the fixed calendar of the traditional rule curves. In the flood year of 2014, for example, the rule curves held back water just before a late ice out. That set the stage for early, intense storms to cause a near record flooding event.

While the evidence of climate change is clear and present in this watershed, the consequences are not completely known. The abundance of freshwater masks an underlying fragility in the quality of water and the complex ecology of this region.

What would Adaptive Management look like in this basin?

In my view, Adaptive Management consists of three coordinated activities that take place on distinctive time-scales.

- What I call this the 'real-time' element of Adaptive Management are the daily decisions of the dam operators. Dam operations are adjusted in line with the rule curve order and the directives of the local water level committee. These actions account for current water levels and inflows, downstream conditions, and take previously agreed-upon actions in emergency high- and low-water conditions.

- At the next level are the within-year decisions that would be the primary responsibility of the local water levels committee under the Study Board recommendations. These responsibilities include the annual decision to implement the flood mitigation protocol of Rule Curve Option C. I call this the 'predictive' element of Adaptive Management because it uses current data to make near term predictions and propose compensating actions. This 'predictive' element would be a valuable new management feature in this watershed.

- Finally there is the 'assessment' element consisting of the multi-year oversight and review necessary for Adaptive Management. Unfortunately, this feature was not fully defined by the Study Board.

What needs to be done?

In my view there are two things that need to be done to implement Adaptive Management in this watershed.

The first is to establish an independent means of conducting routine and periodic assessment of the watershed. The peer reviewed literature has examined implementations of Adaptive Management in watersheds around the world since the approach the 1970's. Successful implementation of Adaptive Management requires assessment that is truly independent of the within year decision making process. I believe this issue would be the primary subject of the Spring 2018 workshop proposed by the commission, and I strongly endorse this action.

The second action is to invest in additional sensors and data collection. This is particularly needed the 'predictive' element of the Adaptive Management. Examples include a station to measure ice conditions for estimating the annual freshet and ice-out, and sensors to measure water content of soils in the basin.

I hope these comments are useful. Thank you.

Name: John McMahon

Date of Submission: August 22, 2017

Location: Kabetogama, Minnesota

Comment:

As a resident of Kabetogama, I would choose rule curve Alternative C. I believe the benefits accomplished by the 2000 rule would be enhanced and continued. Thank you.

Organization: Minnesota Department of Natural Resources

Date of Submission: September 1, 2017

Location: Grand Rapids, Minnesota

Comment:

Good Afternoon,

Please find the attached letter from Acting Regional Director, Patty Thielen. The original letter will follow via U.S. mail.

Best regards,

Angela Nordman
Executive Asst. to Regional Director | Operations Services Division
Minnesota Department of Natural Resources
1201 East Hwy 2
Grand Rapids, MN 55744
Phone: 218-328-8784
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mndnr.gov

Minnesota Department of Natural Resources
NE Region 2 – NE Regional Director
1201 East Highway 2, Grand Rapids, MN 55744

September 1, 2017 **Correspondence # ERDB**

International Joint Commission
ATTN: Rainy – Namakan Rule Curves Draft Changes Public Comment
1717H Street NW, Suite 801, Washington, DC 20006
American Study co-chair: Scott Jutila, (651) 290-5631
Send to: ParticipateIJC@ottawa.ijc.org (external Link)

RE: *July 2017 – September 2017,* Draft Changes to the Rainy and Namakan Lakes Rule Curves for Public Comment by the International Joint Commission.

Dear Commission Members,

The Minnesota Department of Natural Resources (MN DNR) has conducted a review of the *July 2017 – September 2017,* Draft Changes to the Rainy and Namakan Lakes Rule Curves for Public Comment by the International Joint Commission. We thank you for the coordination with our area and regional staff during the development process; for the continued outreach to the agencies, tribes, and public; and for the opportunity to review this document.

The following comments pertain directly to the document. We thank you for helping us to address our questions and concerns.

Specific to Document

General

We feel it is imperative that there be outflow criteria set for the Rainy River. This will help ensure that considerations of downstream occupants and ecological integrity are maintained. Ramping considerations also need to ensure protection to downstream resources. While water quantity (outflow) has been discussed, there are also thermal considerations that should be made to ensure that large and unnatural temperature fluctuations are not created.

In regards to 'examining practical operational approaches to benefitting Rainy River interests while meeting the Rule Curve Requirements', the comments within the draft and associated with this recommendation; minimize the downstream concerns. While the communication strategy proposed is an important item, we ask that for recognition of downstream impacts to not just property, but also to aquatic habitat and biological integrity of the resource. While it was suggested that there are other tributaries contributing to flows within the Rainy River, the other sources are more natural in their flashiness and are generally not the driver of the erratic flows that are observed at times. Furthermore, outflows from the dam in International Falls have significant influences on downstream temperatures which potentially impact biological processes and downstream businesses.

The recommendation to investigate the feasibility of modifying the outlet of Rainy Lake has many potential consequences. The potential impacts to the resources and increased ability to leave areas dry is a serious concern of this consideration. This modification would require a much larger understanding of Rainy River ecological flow and thermal criteria.

Line Items

Page 2, Theme 1, Paragraph 2 - The proposed modification to reduce flooding on Rainy Lake could impact fish spawning (i.e. lower water levels during the spring spawning season) if used too often. We suggest 1) flood prevention efforts be balanced against the costs to the aquatic/riparian ecosystem, 2) educational outreach on the natural functions of watersheds and fluctuation in water levels to natural resources, and 3) providing information and incentives for minimizing construction in the flood zone, using flood/habitat friendly structures.

Page 2, Theme 1, Paragraph 3 – We support the proposed reduction in over-winter drawdown to provide ecological benefits to the aquatic/riparian ecosystem.

Page 2, Recommendation 1 Paragraph 1 - Conditional support for adoption of Rule Curve alternative C; see comment above related to flood prevention. The potential impacts to downstream resources remain an issue. These impacts would arrive through both high and low water events. We are concerned of downstream impacts: how changes in outflow from Rainy Lake could impact habitat and aquatic/riparian biota in the Rainy River and its tributaries. In regards to high water events, there would be an observed increase for a longer duration of high outflows to the Rainy River. This would affect both quantity and thermal regimes in the River. From a low water perspective, concerns of inaccurate flood forecasts and the consequences that happen after drawing the reservoir down, and the continued need for power generation. This has potential for having detrimental impacts to downstream flows in the Rainy River. We ask that special consideration be given to examining and establishing critical flow criteria to ensure that downstream habitat is not degraded and that adequate and more natural flows are maintained.

Page 3, Theme 2, Paragraph 1 - Consider expanding the Water Level Committee to include Resource professionals

Page 3, Theme 2 Paragraph 2 - We support the development of Operational Guidelines and request that DNR and/or other Resource agencies be given the opportunity for input on guidelines to ensure ecological consequences for the lakes and downstream impacts to the river are given equal consideration along with other benefits such as flood prevention and power generation. In all of these process we ask that all divisions in the department be engaged to ensure all potential impacts are addressed.

Page 3, Theme 2 Paragraph 3 – We support the development of the 'Terms of Reference for Water Level Committee' and request DNR/Resource agency participation to provide an ecological perspective.

Page 4, Theme 2 Paragraph 2 – Aquatic/riparian life in the river would also benefit from a reduction in frequency of large flow changes. The impacts of these changes are greatest in the upper reaches of the River which is influenced entirely by outflows from the dam and cannot be understated.

Page 4, Theme 2 Paragraph 4 - We support this general approach, however we are concerned about the potential for a single interest to dominate the process (e.g. flood control). We recommend participation be balanced between all the different users (upstream and downstream) and interests (e.g. fish spawning, shore birds, property owners, paper making and power production, etc.). In addition, we recommend using a multi-faceted approach and specific criteria to determine when to follow the flood prevention alternative (not just public input).

Page 4, Recommendation 2, Paragraph 1 - Generally support this recommendation with caveats mentioned above.

Page 5, Recommendation 3, Paragraph 1 – We support this recommendation; see comment 6.
Page 5, Recommendation 5, Paragraph 1 – We strongly support this recommendation (see above comments). Consider incorporation of ramping rates for dam operations and establishing protected flows for the river, especially during critical time periods (e.g. fish spawning seasons, nesting seasons, etc.). Large flow changes (up or down) during spawning season can have negative effects on fish spawning behavior and outcomes, and other species (such as mussels and birds). For example, a false positive flood forecast could increase outflows in early spring (to reduce lake levels as prescribed in the flood reduction option for Rainy Lake) and then lead to reduced flows later on if the expected wet conditions do not occur.
Page 6, Recommendation 7, Paragraph 2 – Please see related comments above, we suggest the process be defined in Terms of Reference and criteria for making decisions be defined in Operational Guidelines.
Page 8, Recommendation 8, Paragraph 2 – We support the use of an adaptive management process using the best possible science to evaluate the effectiveness of the Rule Curves. While the list of ongoing monitoring recognizes sampling within the reservoirs, there is no/few considerations to downstream impacts. We ask that downstream effects (e.g. Rainy River) to all aquatic/riparian species (collective impact) be included in the process; with particular attention to critical fisheries, wildlife and rare species (such as mussels and birds). We recommend that the list be expanded to include sampling in the Rainy River for gamefish objectives, biological criteria, and aquatic habitat impacts; and arriving at instream-flow criteria to ensure protection of Rainy River resources. Note this process places an expectation (burden) on the Resource agencies to do much of the monitoring and evaluation at a time when State agency budgets are flat or declining.

Specific Topics

Hydrology

Because alterations in water levels can impact upstream (Lakes) and downstream (Rainy River) including connected waters (associated wetlands, streams, groundwater interfaces); impacting ecosystems, communities, and species; we support the move to a more natural hydrograph on Namakan Reservoir and Rainy Lake. In particular our concern is that this document does not adequately address downstream impacts; including ecological integrity, diversity, health, and sustainability. Inaccurate flood forecasts, the consequences that happen after drawing the reservoir down, and the continued need for power generation, are a concern. The increased flexibility recommended (e.g. *…".allowing lower targets in spring"….*) could create a situation problematic to downstream species and ecosystems. Changes in outflows from Rainy Lake have the potential to disrupt sensitive flora and fauna such as; spawning fish (dewater eggs and fry, lake sturgeon), nesting migratory birds (shorebirds, or birds using the riparian habitat), emergent vegetation, and others.

Therefore, we ask that special consideration be given to examining and establishing critical flow criteria to ensure that downstream habitat is not degraded and that adequate and more natural flows are maintained; and recommend establishing operational guidelines and outflow criteria that consider how quickly changes in outflows are made from the dam in International Falls/Fort Frances (e.g. ramping rates) to prevent/minimize negative downstream impacts and maintain ecological integrity.

1.) *Example: Lake levels are lowered in anticipation of high runoff to reduce flood potential (which would increase flows to the River). However, if the precipitation is lower than expected; outflows might then be reduced to increase lake levels. Resulting in a sudden decrease in downstream flow. This type of approach could disrupt the behavior of flora and fauna causing negative impacts to populations downstream and upstream. To avoid and minimize these potential negative impacts to downstream, especially during the spring flowering, nesting, and spawning seasons; we would like to see more discussion about potential impacts to the River (stage and flow) and ways to mitigate those impacts.*

NIHS/Habitat/ Ecological Integrity – Assessment and Monitoring

Alterations in water levels can impact upstream (Lakes) and downstream (Rainy River) including connected waters (associated wetlands, streams, groundwater interfaces). Consequently, these changes can directly and indirectly impact the aquatic (surface and ground waters) and terrestrial/aquatic interfacing habitats. Nesting migratory birds (water, shore, and riparian habitat), mussels, fishes, invertebrates, reptiles and amphibians and other species can be greatly impacted. Therefore, we ask that both Federal and State Threatened and Endangered species be considered in the management of these waters and shore lands. We encourage the Study Board to either enter into a license agreement with the DNR for Rare Features Data so that potential impacts to known occurrences of state-listed species can be more thoroughly addressed, or to query the DNR Rare Species Guide to get a list of state-listed species found in the area and address issues more generally.

We ask that the project please work with those in the Lake of the Woods area and consider potential downstream impacts to species along the river and in Lake of the Woods. Historically, piping plovers and terns have been documented nesting on Lake of the Woods. We have not found a PIPL nest since 2013, largely because there is very little habitat that is available as Pine and Curry Island SNA has been experiencing sediment loss (aka washing away). This issue is complex and likely influenced by a number of factors. Terns have a higher risk of flooding with water changes because terns prefer areas that are more susceptible to flooding than the plovers. If water levels on Lake of the Woods will be greatly altered, especially if they are higher than in the past or have more bounce, particularly in late May to mid-August, this would be a concern for both of these species. Currently, terns continue to attempt to nest each year on Lake of the Woods, but ultimately fail because of high water levels.

We also recommend considering the impacts to rare species, species of special concern, rare communities, and other natural resources in your management plan. Not only is wildlife viewing providing important revenue and increased economic potential for our state. Many of these species/communities may serve well as indicators of ecological health/integrity and long term sustainability; and recommend they be considered for future analysis/ assessments and be incorporated into your 'Investigate Adaptive Management'. While the list of ongoing monitoring recognizes sampling within the reservoirs, there is no consideration to downstream impacts. We ask you work with our fisheries, wildlife, and ecological staff Rainy River to consider additional targets for monitoring and assessment both up and in particular downstream.

Please communicate with Lisa Joyal concerning NHIS and these species:
http://www.dnr.state.mn.us/nhnrp/nhis.html
http://files.dnr.state.mn.us/eco/nhnrp/nhis_data_request.pdf

Additionally, we would like this project to consider the impacts to enhancing the introduction, transport, and enhancement of all potential terrestrial and aquatic invasive species.

Cumulative Effects

We suggest acknowledging and addressing cumulative effects of these concerns.

Thank you for the opportunity to review the document. We look forward to receiving responses to our comments. Please contact Margi Coyle with any questions; she is the agency's Regional Environmental Assessment Ecologist (REAE) and can be reached at (218) 328-8826 or margi.coyle@state.mn.us.

Sincerely,

Patty Thielen
Acting NE Regional Director

CC:
Randall Doneen
Kate Fairman
Charlotte Cohn
Lisa Joyal
Mike Peloquin
Darrell Schindler
Theresa Olson
Kevin Peterson
Phil Talmage
Rian Reed
Margi Coyle

Organization: Ontario Ministry of Natural Resources Fort Frances District

Date of Submission: September 1, 2017

Location: Fort Frances, Ontario

Comment:

Hello,

On behalf of the Ontario Ministry of Natural Resources Fort Frances District, please accept our submission on the Draft Changes to the Rainy and Namakan Lakes Rule Curves for Public Comment, attached. Thank you,

Melissa

…….

Melissa Mosley
Management Biologist
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Ministry of Natural Resources & Forestry
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Tel: (807)274-5337
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September 1, 2017 **(via email)**

International Joint Commission - Canadian Section
234 Laurier Avenue West, 22nd Floor
Ottawa, ON K1P 6K6

Subject: **Comments on the Draft Changes to the Rainy and Namakan Lakes Rule Curves for Public Comment Report**

Dear Commissioners,

Please accept this submission from the Fort Frances District Office of the Ontario Ministry of Natural Resources and Forestry as our formal comment on the *Draft Changes to the Rainy and Namakan Lakes Rule Curves for Public Comment Report (July 25th, 2017).* We have carefully reviewed the report and findings, and submit a number of comments for your consideration.

Recommendation 1

We support the Commission's decision to update the existing Order to implement Rule Curve Alternative C, which provides an alternative Rule Curve for high flood risk years for Rainy Lake. We look forward to clarification from the Study Board regarding conditions under which the flood risk for Rainy Lake is deemed to be high, when this Rule Curve would be implemented, and how the different curves will transition from one another on Rainy Lake.

We ask the Commission to consider and support the monitoring required to evaluate whether the new curves result in the intended ecological and social effects. There are numerous metrics that should be monitored, as outlined in our letter to the Study Board, given the ecological rationale provided by the Study Board for Alternative C. Our ministry is prepared to assist in the identification of these metrics. Monitoring efforts must specifically include the spread of hybrid cattail and muskrat population growth, and assess whether the frequency of applying early spring drawdowns on Rainy Lake under this curve are resulting in overall adverse impacts to fisheries. We encourage the Commission to consider implementation of a fully funded monitoring program.

As an agency we expressed our concerns to the Study Board over the minimal consideration given to downstream impacts to the Rainy River, given the limited number of Performance Indicators (PI's) that were included in the IERM and SVM analyses. After the review of the 1970 IJC Order, it was apparent that further work was needed to assess the downstream ecological, economic, and social impacts of the 2000 Rule Curves. It was our

understanding the Rainy River would be examined in greater detail during this review; however, in our view, the consideration for downstream impacts was limited. Moving forward, we hope the Commission supports work on the Rainy River in preparation for the next review. The proposed Rule Curve for Rainy Lake raises a new suite of questions for the Rainy River, particularly uncertainty associated with the flood curve and the considerably lower winter flows generally.

Recommendation 2
We support the Commission's findings on Recommendation 2, to work with the WLC to finalize the draft Operational Guidelines, and request that any updates to the Operational Guidelines are discussed with the resource agencies. As outlined in our letter to the Study Board, we request that the Operational Guidelines address the need for balanced outflows from the Kettle and Squirrel Falls dams, and that significant, frequent, or prolonged deviations are discussed with resource agencies and others to advise on any adverse effects. It is also important that downstream effects in the upper Rainy River stretch immediately below the dam be given consideration in the Operational Guidelines.

Recommendation 3
We support the Commission's position with respect to providing the WLC with a Terms of Reference. We believe the Terms of Reference should include provision for a balance of interests, including federal, provincial, and state agency representation on the Committee. The Terms of Reference should also include direction on managing upstream and downstream interests and needs, as well as balancing ecological, social, and economic benefits.

Recommendation 4
We accept the Commission's position on Recommendation 4.

Recommendation 5
We support the Commission's position on Recommendation 5. We request that the WLC work with resource agencies in identifying best practices for limiting large flow changes from Rainy Lake.

Recommendation 6
We support the Commission's position on asking the WLC to review data monitoring sources and come back to the IJC with recommendations.

Recommendation 7
We support the Commission's position on directing the WLC to hold pre-spring engagement with the public, agencies, First Nations, Metis, and Tribes. We ask the Commission to consider a formal commitment in the new Terms of Reference directing the WLC to consult with resource agencies at this time, to discuss any adverse biological or environmental impacts observed as a result of previous application of conditional spring flood reduction targets. As well, we request the Commission consider language that clearly states the purpose of these engagement sessions is to convey whether or not the alternative Rule Curve for high flood risk years for Rainy Lake has been applied, and that

the responsibility for triggering the conditional Rule Curve is a science-based decision made by the WLC.

Recommendation 8
We support the Commission's position on using a formal adaptive management approach for the long-term evaluation of the effectiveness of the new Rule Curves. We support the review of the new Rule Curves being mandated to take place within the next 15 years from implementation of the new order.

We support the proposal for the IRLWWB to hold a workshop to identify priority areas for continued monitoring and to develop an approach by the spring of 2018. We look forward to participating in the workshop and contributing to the development of a monitoring plan. We request the Commission consider the inclusion of firm commitment to fund the monitoring of impacts of the changes proposed with the new Rule Curves. It is imperative that a monitoring program be funded and implemented to assess the anticipated impacts on muskrat, cattails, and wild rice, among others, and this monitoring program should include representation of the entire system. We reiterate that resource agencies have a limited capacity to undertake additional monitoring programs, especially in the absence of external funding. We hope that at the conclusion of the Rule Curve monitoring needs workshop, the IJC will request the appropriate funding from their respective governments to enable this crucial work to move forward. We support the creation of a new Rule Curves Monitoring Committee to guide the planning and delivery of this monitoring.

Recommendation 9
We accept the Commission's position on Recommendation 9. In the absence of a discussion and understanding of the Study Board's proposal, we have reservations and concerns about modification to the outlet to Rainy Lake and the effects on the upstream and downstream environment. We have serious concerns that physical alteration of the natural outlet of Rainy Lake at Ranier Rapids and Seven Oaks (Point Park) would have significant social, economic, and environmental impacts.

Recommendation 10
We support the Commission's position to continue to work on developing and sustaining improved relationships and communications with First Nations, Metis, and Tribes on water issues.

Recommendation 11
We support the Commission's position to continue to investigate opportunities to partner with Indigenous communities to develop studies that leverage Aboriginal Traditional Knowledge.

We commend the IJC for its extensive consultation efforts within the watershed, and its commitment to water levels management on Rainy and Namakan Lakes. We appreciate the effort the Commission and the Study Board has taken to involve the public and resource management agencies in the process, and appreciate the opportunity to comment on the draft changes to the Rule Curves.

Sincerely,

(Ralph Horn, Fort Frances Resource Management Supervisor)

for Greg Chapman
District Manager
Fort Frances District
Ontario Ministry of Natural Resources and Forestry

Organization: Rainy Lake Property Owners Association

Date of Submission: August 31, 2017

Location: Ranier, Minnesota

Comment:

The Rainy Lake Property Owners Association has collaborated closely with the Study Board, sponsored independent research on key issues, engaged professional engineering services and testified at in basin hearings this past August.

The RLPOA endorses all 11 recommendations in the final report. In particular, the RLPOA strongly endorses Recommendation 1 {Rule Curve Option C} that provides a means to reduce the likelihood of summer flooding on Rainy Lake.

given the history of high water events and flooding since the 2000 Rule Curve order on Rainy Lake, Continuing with the status quo (Rule Curve Option A) is unacceptable to the RLPOA.

We strongly support for the enhanced roll of the Water Levels Committee. Early March is an ideal time for an in-basin public session for the assessment of current conditions, the likelihood of summer flooding, and wheather or not to employ the flood mitigation protocol that is part of Option C.

The Ecological Aspects of Option C are equally important. Invasive cattails are a growing threat to the riparian rights of property owners in both the Rainy and Lake Kabetogama. The evidence supporting Option C as a means of mitigating invasive cattails and improving ecological outcomes is promising. Baseline monitoring needs to start now in order to properly assess whether option C does in fact produce the desired out comes .

Please see attached Technical Memorandum prepared by Barr Engineering for the Rainy Lake Property Owners Association

Respectful submitted
Rainy Lake Property Owners Association

resourceful. naturally.
engineering and environmental consultants

BARR

Technical Memorandum

To: Tom Dougherty, President RLPOA
From: Dean Skallman
Subject: Review of the Draft Report Managing Water Levels and Flows in the Rainy River Basin
Date: May 30, 2017
Project: Rainy Lake Property Owners Association

The draft report from the, International Rainy and Namakan Lakes Rule Curves Study Board, *Managing Water Levels and Flows in the Rainy River Basin*, has been released for public consultation. This memo is a summary of Barr Engineering Co.'s (Barr) comments on the Draft Recommendations.

Overall, the report did a good job of analyzing the various rule curves and the impacts in the watershed that will result. We feel that a couple points need emphasis.

We feel strongly that the adaptive management proposed is critical to the flood mitigation of the watershed as a whole and Rainy Lake in particular. The large number of lakes in the watershed with uncontrolled outlets, in tandem with the natural flow restrictions on Rainy Lake outlet, make anticipation of flood conditions essential so that timely adjustments can be made to the gated controls to minimize the adverse effects of the impending flood conditions.

The isolated and undeveloped nature of much if the watershed has resulted in limited monitoring stations for precipitation and lake levels. Remote sensing within the basin has the potential to add a lot of value. Modern remote sensing capabilities have greatly improved in recent years. The use and reliability of remote sensing techniques as well as adequate funding support for the implementation of the appropriate remote sensing capabilities will determine overall success of the adaptive management.

Draft Recommendation 1:

Adopt Rule Curve Alternative C

The Study Board recommends that the 2000 Rule Curves be replaced with Rule Curve **Alternative C**, providing conditional spring flood reduction targets for Rainy Lake in years with high spring flood risk and reducing over-winter drawdown for broad ecological benefits in both lakes.

Should the IJC determine that the changes to winter water level targets in Rule Curve **Alternative C** are not acceptable, the Study Board recommends that the conditional spring flood reduction component for Rainy Lake be implemented (Rule Curve **Alternative B**).

Barr Response: Concur. The recommendations are a good balance between flood mitigation and ecological benefits. The flood mitigation benefits will be derived from the conditional flood reduction of Alternative B. Alternative C water level changes will have a minimal impact on flood levels and are primarily directed to ecological benefits.

Draft Recommendation 2:

Promote flexible operation to improve outcomes

The Water Levels Committee should be empowered and encouraged to actively target specific areas of the Rule Curve band to benefit various interests as the opportunity arises, in full consideration of trade-offs that would result. To support this approach, the Study Board recommends the development and regular updating of a set of Operational Guidelines that summarize water level management best practices that can benefit specific interests on both lakes and the Rainy River.

Barr Response: Flexible operations can be beneficial to several stakeholders if hydrologic conditions outside the normal occur. To support this, guidelines need to be prepared that clarify what changes would be a net benefit to all parties in the watershed.

Draft Recommendation 3:

Provide the Water Levels Committee with Terms of Reference

Terms of Reference should be developed that detail the Water Levels Committee's operational procedures and responsibilities.

Barr Response: No Comments.

Draft Recommendation 4:

Empower the Water Levels Committee to direct targets outside of the Rule Curve range

The IJC should consider empowering the Water Levels Committee to direct targets outside of the Rule Curve range under certain conditions, such as responding to imminent emergency, or to allow for more flexible spring refill of the lakes in timing with the freshet.

Barr Response: This recommendation is dependent on the ability to implement Draft Recommendation 6. Substantial benefits in the form of mitigation of extreme events could be gained if flood and drought forecasting methods are developed.

Draft Recommendation 5:

Examine practical operational approaches to benefitting Rainy River interests while meeting Rule Curve requirements

As part of Operational Guidelines (Draft Recommendation 2), the Water Levels Committee should identify best practices for limiting large flow changes from Rainy Lake while still respecting lake level requirements and operational requirements of the dam operators.

The IJC should consider developing an approach for notifying interested individuals along the Rainy River of planned changes in Rainy Lake outflow and associated changes in water levels, as well as the importance of the flow changes on the river level relative to other natural flows.

Barr Response: Concur.

Draft Recommendation 6:

Review data monitoring sources to support inflow forecasting by the Water Levels Committee

The IJC should direct a review of the available monitoring data to identify areas where additional monitoring would improve inflow forecasting. Specific areas of investigation should include snow-pack measurements, remotely-sensed snow-water content, precipitation monitoring stations, and streamflow monitoring stations.

Barr Response: The watershed has large areas of undeveloped land. This will result in sparse data in significant portions of the watershed. Consideration should be given to maximizing the use of remote sensing options. Rainfall measured with radar and water levels estimated from satellite photography are two possibilities examples.

Use of anecdotal evidence from people in the wilderness on a daily basis should be considered. These would be individuals like resort owners and loggers. While difficult to quantify, the information these people have could be valuable, especially if it can be correlated with remote sensing information.

Draft Recommendation 7:

Formalize pre-spring engagement by the Water Levels Committee

A formal process should be developed to engage the Water Levels Committee with key groups in the watershed affected by water level regulation ahead of the spring freshet. This recommendation is of particular importance should **Alternative B** or **Alternative C** Rule Curves be adopted, as a conditional decision on spring water level targets would need to be made each winter ahead of freshet.

Barr Response: Concur. This is a very important means of communication between the stakeholders around the lakes and the Water Levels Committee. There are many people in the watershed with valuable information that should be gathered and used in setting the regulatory targets for water levels.

Draft Recommendation 8:

Investigate adaptive management

The IJC should explore the use of a formal adaptive management process for the long-term evaluation of the effectiveness of the Rule Curves.

Barr Response: No comment.

Draft Recommendation 9:

Recommend that the Governments investigate the feasibility of modifying the outlet of Rainy Lake

The IJC should consider recommending that the US and Canadian governments undertake a feasibility study into the engineering requirements and potential impacts of modifying the outlet of Rainy Lake to increase maximum outflow capacity.

Barr Response: Implementation of this recommendation has high potential for mitigating the magnitude and duration of flooding on Rainy Lake. The removal or reduction of restrictions between the Dam and the Lake have the potential of allowing much greater control of lake levels during periods of high flow, and more importantly in periods when high flows are anticipated.

Draft Recommendation 10:

Examine approaches for developing and sustaining improved relationships and communications with First Nations, Métis, and Tribes on water issues

The IJC should examine options for making meaningful improvements in relationships with Indigenous communities in the watershed. Ongoing communication is key to addressing the concerns of these communities and to improving the ability of the International Rainy-Lake of the Woods Watershed Board and its Water Levels Committee to inform its work with the benefit of both Aboriginal Traditional Knowledge and Western science.

Barr Response: No Comment.

Draft Recommendation 11:

Consider sponsoring research projects to improve understanding of relationship between water levels and areas of Aboriginal Traditional Knowledge

The IJC should consider sponsoring International Watersheds Initiative projects in communities that would help develop the understanding of the connection between water level management and key Aboriginal Traditional Knowledge subjects, such as medicinal plants and pictographs. This understanding could help inform the work of the Water Levels Committee, adaptive management efforts and future reviews of the Rule Curves.

Barr Response: No Comment.

Name: Scott W Handy

Date of Submission: August 20, 2017

Location: Fargo, North Dakota

Comment:

I am writing in support of Alternative B for the next Rule Curve for the Namakan/Rainy Lake watershed. I attended the hearing at the Kabetogama Town Hall on August 17 and have carefully considered the comments and discussion provided at the hearing. I found the testimony offered by the speakers in support of Alternative B to be well reasoned and compelling, and it appeared to provide new information to the commissioners. Alternative B appears to be the best option as well for enhanced walleye production, which is critically important to our area. In summary, I would remind commissioners that as you drove to the Kabetogama Town Hall, it wasn't a statue of a muskrat you passed, but rather a 60 year old iconic statue honoring the economic driver of the region - the walleye. Thank you for your consideration, and for your difficult and appreciated work to balance the many factors that go into managing water levels in our area.

Name: Shane Bekesi

Date of Submission: August 16, 2017

Organization: GPZ Racing

Location: Fort Frances, Ontario

Comment:

the flood risk rule curve is madness , any person with a cabin on rainy lake wont have access to it until july, every boat on the lake will be finding rocks , are you getting a kickback from the marine shops ?
early spring reduced levels will affect walleye spawning ,they spawn in shallow water , this really isn't news.
even if I could show up , my voice wont change gov legislation.
not impressed

Name: Steve Wieber

Date of Submission: August 17, 2017

Location: Orr, Minnesota

Comment:

My name is Steve Wieber and I have owned Ash Trail Lodge on the Ash River for the past 17 years.

I attended your public hearing this afternoon at Kabetogama regarding possible rule curve changes.
It was very informative. Thank you!

My attendance was to learn more about the alternatives and I did not have an opinion before the meeting. But now I do and would like to join those supporting "Alternative B" for the following reasons:

We have experienced one very high water year and one very low water year but the existing rule curve has resulted in very acceptable water levels for 15 of the 17 years we have been on the Ash River. I believe any significant change to the existing rule curve is unnecessary and possibly risky based on the past success of the current rule curve.

I believe the existing rule curve provides the "flexibility" for the IJC to make decisions based on a variety of factors outside the control of the any of us and you are the best people to make those decisions that impact the entire watershed. The "Alternative C"
proposed rule curve seems to
reduce flexibility the IJC has in the January-March period and I would like the IJC to have more latitude to make decisions as opposed to less.

The "rapid drawdown" in the fall seems to be based on concern for the muskrat population and whatever questionable impact muskrats might have on cattails However, this change could present a risk for conditions that help the walleye spawn in the spring. The walleye population is much more important to resort owners, resort employees and the vast majority of people visiting our waters than muskrats and cattails so I would advocate eliminating that change to the rule curve also.

A significant percentage of my customers also enjoy visiting Rainy Lake (via portage at Kettle Falls). Rather than add "another dotted line" to the rule curve for potential flood years I suggest that the IJC use the data available to them and the existing rule curve to manage water levels when conditions appear to warrant their attention.

If the spring and fall curve changes in Alternative C are not required or necessary than leaving the curve unchanged in Alternative B is the best decision in my opinion.

Thank you again for taking all the time to evaluate the alternatives and listen to feedback from those of us that are most likely to deal with the impact of any changes.