Summary of Public/Indigenous Concerns and Study Board Responses (prior to May 1, 2017 public comment draft)

The following is a summary table of public and Indigenous concerns about water levels and flows in the study area conveyed to the **International Rainy and Namakan Lakes Rule Curves Study Board** (Study Board) over the course of the Study, prior to the May 1-June 1, 2017 public comment period (these are provided in a separate document). For each concern, the table includes a corresponding response from the Study Board.

Comments have been organized into the following 18 themes:

1. Flexibility within the Rule Curve
2. Targeting the lower rule curve band (0-25 percent)
3. Adjustments to drawdown periods
4. Enhancement to forecasts
5. Fisheries concerns
6. Shared vision model
7. Weight of Evidence
8. Incorporating Aboriginal Traditional Knowledge (ATK)
9. Communication
10. Climate variability and change
11. Rainy River interests
12. Wild Rice
13. Minimum flow considerations
14. Navigation issues
15. Governance
16. Constrictions
17. Real-time regulation
18. Miscellaneous topics

1. Flexibility within the Rule Curve

	Comment / Suggestion	Public Perceived Benefit/Outcome	Study Board Response
1	Increase flexibility for dam operators (outside 25 – 75 percent band)	Improve response to management issues (for Rainy Lake)	Recommendation: • Study Board supports additional flexibility through operational guidelines. • The recommended flexibility will be aimed at improving adaptive lake level management for various interests at specific times of the year.
2	Allow variability in timing of refill to match actual spring freshet response instead of rigidly following Rule Curves	Improve water level management using real-time conditions rather than a specific date	Currently, Water Levels Committee (WLC) has flexibility to direct companies to operate anywhere within the Rule Curve, and the Rule Curve band is broad enough to accommodate most years. The Study Board is recommending more flexibility for WLC in spring if outside of Rule Curve; Study Board developed criteria for deviation guidelines and recommended an approval and reporting process.
3	Consider adjusting the rule curves to account for the interactivity between Rainy and Namakan Rule Curves	Coordination of dam operation at Kettle and Squirrel Falls and International Falls would reduce flooding at Rainy Lake	Coordinated management of the two lakes was explored using the Shared Vision Model (SVM). Study Board supports additional flexibility through operational guidelines. This option would produce a very minor flood reduction.

2. Targeting the lower rule curve band (0-25 percent)

	Comment / Suggestion	Public Perceived Benefit/Outcome	Study Board Response
1	Target the lower band on Rainy Lake in the spring	Reduce the likelihood of flooding on Rainy Lake	The Study Board has recommended adaptive spring rule curves instead of routine lower targets.
2	Target the lower band on Rainy Lake in the summer	Based on the water levels experienced in 2015, supports conditions for Wild Rice, recreation (access to beaches)	Study Board has recommended operational guidelines to address conditions suited for occasional lower summer levels. The Study Board considered the impact of sustained lower summer water levels on all interests.

3. Adjustments to drawdown periods

	Comment / Suggestion	Public Perceived Benefit/Outcome	Study Board Response
1	Delay the summer drawdown on Namakan Lake to July rather than June	Improved conditions for navigation on Namakan Lake; reduced amount of water flowing from Namakan Lake into Rainy Lake during higher inflow periods	This rule curve adjustment was addressed in the SVM. The WLC currently has the authority to coordinate regulation of these lake levels if within the full range of the Rule Curves. Operational guidelines may provide guidance on when it would be appropriate.
2	Allow the dam operators to defer the drawdown of the	Improved navigation in July and early August,	Flood risk is being addressed through an adaptive management approach, focused on retaining storage buffer on Rainy Lake, and

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	Namakan Chain of Lakes until August or September. The current June 1 start of the drawdown frequently restricts navigation in the upper lakes during the late summer and early fall. The early drawdown also increases the flooding potential for Rainy Lake during the rainy months of June and July.	decreased flood risk on Rainy	possibly Namakan Lake, in years with perceived higher risk. This results in a reduction in flood risk in comparison to the 2000 Rule Curves. Gradual summer drawdown was introduced in the 2000 Rule Curves to improve wave-washing of spawning substrate for the subsequent spring. The Study Board has heard only limited concerns about navigation on the Namakan Chain of Lakes as a result of this change. Consideration of changes to the Namakan drawdown profile, or permission for the dam operators to do so, was weighed against this aim. The Study Board is recommending that the summer drawdown be retained on the Namakan Chain of Lakes.
3	Allow Rainy Lake to draw down one extra foot (30.5 cm) in winter	Reduce likelihood of spring flooding on Rainy Lake	Study Board is recommending an adaptive rule curve to address flood risk.
4	Reduce steepness of the over-winter drawdown slope in El Niño years	Improved Muskrat survival, which in turn improves wetlands conditions	The Study Board developed and assessed a rule curve option that addresses Muskrat survivability.
5	Concern regarding environmental consequences of drawdown in a year that ends up being a drought year	Cumulative impact could be negative for ecosystem	The SVM will show the consequences of adaptive lowering in drought years. Operational guidelines may provide guidance on when it would be appropriate to suspend a flood risk reduction drawdown in favor of benefiting the overall ecosystem.

4. Enhancement to forecasts

	Comment / Suggestion	Public Perceived Benefit/Outcome	Study Board Response
1	Consider ways to improve knowledge of how much rain is falling where; consider how to manage better, not just focus on rule curve changes	Improve prediction to enable us to react sooner	State-of-the-art forecast products from the National Weather Service and the Meteorological Service of Canada are currently used by the WLC. Environment and Climate Change Canada has good confidence in existing precipitation estimates for the basin. Even with best-available forecasts, the lead-time on major rainfall events is too short to avoid flood conditions. Study Board is recommending that the IJC direct a review of the available monitoring data to identify areas where additional monitoring would improve inflow forecasting.
2	Consider using ice-out dates to predict flooding	Ice-out is a good predictor of flooding	There are better predictors - it is not a good indicator for timing operational decisions. Study Board members considered current research on degree days as a predictor of ice-out presented at the March 2017 Watershed Forum. Ice-out dates can be correlated to some extent with flooding. Plans such as the flood damage reduction plan shown at the Draft Decision Workshop (Plan B) change rule curves in April based on a forecast of flooding that year. Those forecasts rely on the ENSO indicator and snowfall measurements. If a flood damage forecasting plan is implemented, then ice out date prediction, coupled with a correlation between actual ice-out dates and the probability of flooding that year, could be part of the information

			considered in maintaining lower target levels or resuming normal operations.

5. Fisheries concerns

	Comment / Suggestion	Public Perceived Benefit/Outcome	Study Board Response
1	It is essential to consider the impact to fishery and tourism; data collected in long-term agency-funded research and monitoring should be used to compare fish populations before and after implementation of the 2000 Rule Curves and to assess the effects of alternative rule curves.	Any changes in the rule curves should not adversely affect the fish populations and the fishery	Data from the agency programs and other research studies were used to evaluate various rule curves. Performance indicators (PIs) have been developed for Walleye, Lake Whitefish, Lake Sturgeon and Northern Pike so that the SVM can be used to compare alternative rule curves and their impacts on fishery. For Yellow perch, the Study Board did not receive the “in preparation” study from the USGS, so no PI was developed for this species.
2	1-D and 2-D model-based PIs for Lake Whitefish spawning habitat and success should be developed; consider using the MNDNR and MNRF data in the Weight of Evidence (WOE) analysis.	Model-based approach can be used in comparisons of multiple management scenarios without the confounding influence of weather and other pertinent factors	Use of the agency data in the WOE analysis is of limited value since they either are not directly relatable to water levels or there are no comparable data from prior to the 2000 Rule Curves being implemented. Funding was obtained and an evaluation of Lake Whitefish spawning habitat was done. PIs were developed and incorporated into the SVM and IERM.

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3	Incorporate Lake Sturgeon Protocol into the SVM; the MNDNR/MNRF Lake Sturgeon population estimate should be included in the WOE analysis.	Reduced fluctuations in water levels on Rainy River during the spawning season will help protect Lake Sturgeon eggs from drying out due to water levels being dropped	The dam operators, H2O Power LP and Packaging Corporation of America (PCA), currently work with the International Rainy-Lake of the Woods Watershed Board (IRLWWB), the WLC and resource agencies on a voluntary basis during the Sturgeon spawning period to reduce the risk of egg dewatering. Recommended operational guidelines will include this protocol. The IERM calculates the Sturgeon spawning area in part of the river; results are available for many alternatives and the IERM produced estimates for final candidate plans. A Lake Sturgeon PI for Rainy River was developed as part of the IERM and is reported in the SVM for all plans. The MNDNR/MNRF Lake Sturgeon population estimates have been included in the WOE matrix - no change in Lake Sturgeon population could be attributed to the 2000 Rule Curve.
4	Mercury contamination in fish should be included in the WOE analysis; develop a model-based PI for fish mercury content	To the extent possible, control mercury contamination in fish population through water level regulation	Previous studies have identified a relationship between water level fluctuations and mercury concentrations in young of the year (YoY) Yellow Perch. However, the Study's analysis did not identify a connection that is clear enough to allow managers to reduce mercury in fish through water level management. This concern prompted the Study Board to develop a mercury-driven PI to assess the relationship between water management (rule curves) and mercury in YoY Yellow Perch. The resulting preliminary report (Guenard *et al.,* 2016, including the Study's Technical Working

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			Group member Jean Morin) suggests there is a connection between water levels and mercury concentration in Yellow Perch YoY. The Study Board also developed a second PI with these new data. The new analysis showed evidence that mercury concentrations in YoY Yellow Perch also depend on several factors besides water levels that are beyond control, such as atmospheric deposition rates. However, the Study Board is not considering rule curve alternatives that will substantially affect the year-to-year change in maximum levels. For the latter reason, and given the lack of control and the underlying uncertainty regarding the other drivers controlling mercury in fish, the Study Board did not attempt to rank water level management plans on the basis of predicted changes in fish mercury concentration. The Study Board summarized the issue (Fact Sheet 7, pending finalization for posting on the Study's website), developed findings obtained from the developed mercury PIs and proposed recommendations on the general subject of mercury in these lakes.
5	Suggest revising the Wetland Monitoring indicator to better reflect the actual indicator being used and measured	Water level fluctuations have a shaping influence on vegetation communities that, in turn, affect many other ecosystem components	The before- and after-2000 analysis of aquatic vegetation in Rainy Lake, the Namakan Chain of Lakes and Lac la Croix (Study 28) was used for the WOE comparison. Related PIs have been developed for submerged vegetation, and wetland and emergent plant composition were built into the IERM and used in the SVM to compare alternative rule curves.
6	Harvest reduction strategies have improved the health of fisheries in Rainy Lake and	This may have an impact on results used in the WOE, which will influence	The Study Board understands that because something good or bad happened after the rule curve changed does not necessarily mean it happened because the rule curve changed. The Study Board has

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	the Namakan Chain of Lakes. How will this potential conflict of data and results be mitigated?	IERM modelled	carefully considered these outside influences to determine the level of confidence that can be assigned to the impact of a rule curve change on a given interest.

6. Shared Vision Model

	Comment / Suggestion	Public Perceived Benefit/Outcome	Study Board Response
1	How does weighting work? Will the Study Board make the decision of weighting based on what they hear from the stakeholders?	One of the public's concerns is that the value for the PIs will be arbitrarily assigned. An unbiased assessment of plan rankings is needed	Weighting occurred organically in the practice decisions; there are no formulas in the SVM. The Practice Decisions were designed to make clear how the Study Board is interpreting evidence concerning the impacts of different rule curve options and how the Board made trade-offs between these impacts. The Rule Curve Public Advisory Group (RCPAG), Resources Advisory Group (RAG) and other stakeholders were involved in the Practice Decisions and were able to challenge the Study Board on its interpretations and trade-offs.
2	Even if the SVM can't incorporate all of the components, how does the Study draw in things it heard that cannot be modelled?	A more complete assessment	There are a few additional PIs based on research the Study Board conducted or assembled after the study began. Some other components were included in recommendations for operational guidelines. The Study Board will recommend further monitoring or research to

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			support modelling of factors that cannot be modelled now. Adaptive management will address this need.
3	Has the study team considered a multi-criteria analysis to evaluate trade-offs as well to plan alternatives?	Better assessments	The SVM evaluated each plan based on multiple criteria, and used a very simple multi-criteria decision model to rank plans. Decades of testing have shown that a more informal but documented process such as the Practice Decisions produces better results than sophisticated multi-criteria decision-making models.
4	The 1970 model used in this analysis suggests that dam keepers targeted the middle of the rule curve. However, at that time there was no directive and the dam keepers operated within the curve and targeted different levels at their own discretion.	This assumption made by the modeller may generate conflicts between the 1970 and 2000 models	The first objective of the Study was to determine whether the 2000 Rule Curves worked as intended and provided the change in impacts expected. The SVM compares the 2000 and 1970 Rule Curves with the same operational application so that the difference in the Rule Curves is isolated. The Weight of Evidence studies and the analyses of the 1970 and 2000 Rule Curves in both the SVM and IERM showed that the 2000 Rule Curves did perform as expected. The IJC selected the 2000 Rule Curves over the 1970 Rule Curves based on these expectations, and so the Study Board concluded that the preference was justified and there was no argument to support reversion to the 1970 Rule Curves.

7. Weight of Evidence

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1	Can additional subjects be considered? *e.g.,* • relationship between eagles/fish/mercury; • erosion of farmland; • medicinal plants; • aquatic invasive species; • water temperature; and • portages and canoe routes.	Reduced mercury impact on eagles/fish, erosion on farmland, improved medicinal plants and portage/canoe routes	The purpose of the WOE table is to identify how parameters previously identified by the Plan of Study were affected by the implementation of the 2000 Rule Curves. The Study Board did not have information on these additional subjects for pre- and post-2000 Rule Curves. The Study Board did draw on additional scientific studies as well as output from the SVM and IERM wherever possible, such as with mercury.

8. Incorporating Aboriginal Traditional Knowledge (ATK)

	Comment / Suggestion	Public Perceived Benefit/Outcome	Study Board Response
1	How is IJC planning to incorporate Anishinaabe Traditional Knowledge into the review?	ATK could provide valuable insight for adaptive rule curve management	As part of the review, the Study Board carefully assessed water level regulation scenario impacts on cattails, fish, archaeological resources, Wild Rice and Muskrat, as these were identified in 2009 as important values to assess the impact of the 2000 Rule Curves. The Study Board gained additional valuable ATK through: its meetings with First Nation communities in the study area; the

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			insight of First Nation and Tribal members on the RCPAG; the Learning Forum with the Grand Council Treaty #3 in September 2016; and at the two Practice Decision Workshops (see #2 below). Due to limited time and available information, the Study Board was not able to specifically integrate additional ATK in this study. However the Study Board has noted in its report the value of the IJC sponsoring International Watersheds Initiative projects in communities that would help develop the understanding of the connection between water level management and key ATK subjects.
2	Incorporate impacts of water level regulation on pictographs, burial sites, and medicinal plants	Ensure that the value of First Nations and Métis interests are incorporated into the Study Board's evaluation	Known pictograph elevations (data available) are outside of rule curve ranges, so no PI was developed. The SVM now includes a measure of the "mean residence time of water levels" to estimate the degree to which the regulation plan would threaten any archeological site. Although there may not be enough information at the present moment to properly address these interests, future efforts are needed to strengthen the dialogue with First Nations and Métis to better integrate ATK into water management decisions by IRLWWB and its WLC; the Study Board has emphasized this need in its report.
3	ATK could be integrated into the study criteria and the weighed criteria analysis	ATK is generally regarding the environment but there are also broader values including economic and	Rule Curve alternatives were evaluated using the SVM and a form of multi-criteria analysis which is flexible and involves open discussion with all stakeholders, including First Nations.

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		livelihood impacts of importance to Anishinaabe people	
4	"Based on literature reviews, expert knowledge and available data, the periods during which each species is most sensitive to water level variations and the type of variations that would be detrimental to these species were identified."	Again, there is an opportunity for ATK to be integrated into these decisions	This specific type of information was available to the Study Board for Muskrat, fish, archaeological sites, Wild Rice and cattails. However, other ATK values learned of later were not available to the Study Board for assessing the 2000 Rule Curve.

9. Communication

	Comment / Suggestion	Public Perceived Benefit/Outcome	Study Board Response
1	Long-term communication plan needed; consider Public Advisory Group for WLC	Ensure that discussion of trade-offs/benefits continues past the life span of this study	Study Board is recommending a formalized public advisory group to review conditions ahead of spring with the WLC before WLC makes decisions on spring targets.
2	In the presentation of any new curve, the difficulty of managing water levels during high intensity rainfall	The public does not adequately understand the difficulty of managing water levels when a high	Study Fact Sheet 3 (available on website) describes the control of outflow from Rainy Lake and details the limitations of the system in regulating during high inflow periods.

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	events should be made clearer	intensity rainfall event occurs	A series of videos is also being created by the IJC that aim to help the general public understand the complexities of regulation of Rainy Lake. Two videos are available on the Study Board website; future videos will be added when completed.
3	Has the Study Board considered using a Survey Monkey survey or even polling?	Ensure the Study Board has a more representative sample of public views	The IJC provided the Study Board with a Directive for Communication and Public Outreach Activities to ensure an open and transparent process was followed throughout the duration of the Study. The RCPAG was created to further assist the Board in carrying out its public participation activities. The Study Board did make use of a survey to gain information on Rainy River interests as this was identified as a significant knowledge gap.

10. Climate variability and change

	Comment / Suggestion	Public Perceived Benefit/Outcome	Study Board Response
1	Consider engaging a climatologist on the proposed ENSO-based forecast	Ensure sound science behind proposed forecasting tool	The Study Board engaged Environment and Climate Change Canada science experts in the areas of hydrology, atmospheric forecasting and climate change to review and comment on the proposed ENSO-based forecasting tool. The Study Board's analysis was supported.
2	Repeating this review process in another fifteen years or when the changes have been detected in the hydrological record	Adjust water level management for changes that have actually occurred within the system	While the Study Board agrees that it is important to make adjustments based on changes that have actually occurred within the system (rather than those that were expected), it feels that these adjustments will be best handled through adaptive management as described in Chapter 8 of the report. Building on the experience of previous IJC studies (*e.g.*, Lake Ontario Study), the Study Board is considering a system to continually monitor and assess ways of adjusting regulation to maximize benefits for all interests.
3	Integrate climate change into the Shared Vision Planning process	Address the concerns of future impacts	The Study Board considered various climate change scenarios within the SVM to identify vulnerable interests.

11. Rainy River interests

	Comment / Suggestion	Public Perceived Benefit/Outcome	Study Board Response
1	Could there be a designated flood stage for the Rainy River?	Ensure that potential damage to Rainy River interests are not negatively affected by Rainy Lake regulation	No clear stage-damage profile has been developed for the river. Flood mapping to establish flood stage is a provincial (in Canada) or a federal (US) responsibility. The US Federal Emergency Management Agency and MNDNR are updating floodplain mapping on Rainy River in Koochiching and Lake of the Woods Counties.
2	Is there a way to better communicate anticipated rule curve changes to Rainy River community?	Allow community to understand impacts due to change in Rainy Lake regulation	The Study Board has developed fact sheets and videos that may serve that purpose if applied to any new rule curves (see Study website). The Study Board established a Rainy River Committee to ensure better communication throughout the Study.
3	Consider the impact of low flows to Emo and Rainy River drinking water supply	Protect community drinking water supply from negative impacts of Rainy Lake regulation	Under current minimum flows, water intakes at Emo and Rainy River are not vulnerable; rule curve recommendations cannot impact these drinking water supplies.
4	Consider the impact of rapid flow changes on the river due to gate changes at the International Falls dam	Ensure river impacts are considered	The Study Board has recommended operational guidelines that would encourage the companies to avoid large flow changes when conditions allow.
5	Information needs to be transmitted quickly to downstream communities on Rainy River when there are extreme events	Allow communities to prepare for extreme changes in water levels	The Study Board is not able to address this issue within the context of the Study but will be communicating these concerns to the IJC and WLC.

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6	Consider the erosion of river banks due to high water levels (not just flooding) and water level fluctuations	Reduce the impacts of erosion such as clarity of water, fishing and loss of farmland	High water cannot be avoided; however, the recommendations for operational guidelines will aim at reducing unnecessarily large flow changes.
7	Consider the impacts of dam regulation on ice formation, break-up and ice jams on Rainy River	Reduce the erosion of banks due to ice-shove during break-up and ice jams	Recommendations for operational guidelines will look to reduce the disruption of ice after freeze-up.

12. Wild Rice

	Comment / Suggestion	Public Perceived Benefit/Outcome	Study Board Response
1	Need to consider the stage of Wild Rice growth that is critical for maintaining a certain water level. Wild Rice growth is impacted by early/late spring - can rule curve shift to accommodate Wild Rice based on the conditions?	Lowering drawdown in spring may help to increase yield; 2015 was a good year for Wild Rice in some parts of the study area	The Study Board considered the effect of the Hybrid Cattail expansions on Wild Rice and the aquatic plant community. Wild Rice PIs were developed to assess the impacts due to water levels and cattail expansion. Operational guidelines and improved communication between communities and WLC have the potential to support Wild Rice growth when conditions are favourable.

13. Minimum flow considerations

	Comment / Suggestion	Public Perceived Benefit/Outcome	Study Board Response
1	Will the Study Board be looking at prescribed minimum flows?	Current minimum flow requirements are based on historical mill effluent data. Updated values would better reflect reality	Current Namakan minimum flows were developed with goal of reflecting natural flows at low levels. Current Rainy Lake minimum flows were for assimilation of pollution, maintaining oxygen levels in low water conditions. The Study Board requested input from the RAG, but a full review with agencies requires more time and resources than available for this Rule Curve review.

14. Navigation Issues

	Comment / Suggestion	Public Perceived Benefit/Outcome	Study Board Response
1	Need to consider minimum low water levels required for installing navigation buoys	Better access to install navigation buoys prior to navigation season; boater safety	Study Board obtained data on this issue and included it in the navigation PI.
2	Consider access to docks and launch sites for sail boats on Rainy Lake	Prevent water levels that require sail boats to be pulled out early due to potential damage to hulls	A PI was added to the SVM based on input from a member of the sailing community.

15. Governance

	Comment / Suggestion	Public Perceived Benefit/Outcome	Study Board Response
1	Lake of the Woods has a control board. How was that established and why? Could we have a full-time board?	Improved governance	The Lake of the Woods Control Board is a requirement of a Canada-United States treaty (the Lake of the Woods Convention and Protocol, 1925). It was established to regulate the levels of Lake of the Woods and flows along the Winnipeg River for the benefit of all users and interests, and has a specific water level range for Lake of the Woods that is defined in the treaty. A full-time board for the Rainy-Namakan system is not being examined by the Study Board as an alternative to Rule Curve-based regulation. However, a more active role for the WLC, particularly in spring and summer, is being recommended with respect to adaptive management.

16. Constrictions

	Comment / Suggestion	Public Perceived Benefit/Outcome	Study Board Response
1	Based on available data and the studies performed by the Canadian Hydraulics Center, the modifications of the Rainy Lake outlet at Ranier Rapids have high potential of mitigating high water levels on Rainy Lake. In our view, it is	Reducing constrictions would improve outflows during high inflow periods (flooding). Need to consider the effect on Rainy River	The Study Board's report includes recommendation that the Governments investigate the feasibility of modifying the outlet of Rainy Lake. For further information on Study Board's initial response to this, see Addendum to Study Strategy, dated February 1, 2016 (available on the Study Board's website).

	essential that the Rule Curve Study recommend further study of the effects of the restrictions in the Upper Rainy River and possible solutions.		

17. Real-time regulation

	Comment / Suggestion	Public Perceived Benefit/Outcome	Study Board Response
1	A real-time regulation approach should be included within the scope of study and there should be a way to do it without a full-time staff	Lake level would be adjusted based on actual rainfall rather than waiting until the water shows up as a rise in lake level, causing a significant delay in reaction time	For further information on the Study Board's initial response to this see the Addendum to the Study Strategy, dated February 10, 2016 (available on Study website). Models and practical experience show that because inflows can be so much greater than any possible release, real time regulation cannot significantly reduce flooding. Even pre-emptory lowering of the lake in anticipation of flooding has little effect for larger floods.

18. Miscellaneous topics

	Comment / Suggestion	Public Perceived Benefit/Outcome	Study Board Response
1	It is not clear what options are being assessed and how the environment is being considered	Fisheries and environment need to be given due consideration if contemplating any change to the Rule Curve and it needs to be more clear	The Study Board was committed to undertaking the Study in a transparent and participatory manner. Alternatives to the 2000 Rule Curves were developed and shown in a series of practice decision workshops. Environmental rule curve alternatives were first presented at the November 2016 Practice Decision Workshop. Additional environmental alternatives were developed in February and March 2017 and shown in the Draft Decision Workshop in March. All alternatives included a full environmental and economic analysis based on the SVM and IERM.
2	One component of issuing permits is to assure that construction avoids sensitive flood plain areas. This has been challenging due to the fact that the most current Koochiching County Flood Hazard Boundary (FEMA) Map for Rainy Lake is dated 1977. In the last year, the county GIS maps have included 2ft LIDAR elevations as an overlay to its aerial photo inventory; it's been said that we will		Comment noted.

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	get digital mapping in a year or two and expect improvements.		
3	Concern that the proposed Study Strategy for the Rule Curves review has narrowed the Objective and Scope to the extent it may miss important opportunities to develop effective long term solutions to controlling water levels in the Rainy and Namakan watershed	Too narrow a scope of work	The IJC approved the Study Board's Study Strategy. The strategy sought to provide a comprehensive review of rule curve alternatives within its schedule and resources. The Study Board has included recommendations for other future studies on topics not addressed by this study if they have the potential for improving lake level management.
4	The IJC should take action to coordinate management of the Seine River as part of its mandate to manage the watershed on the border of the United States and Canada		For further information on the Study Board's initial response to this, see the Addendum to the Study Strategy (available on Study website)
5	While we agree the SVM ought to be based on realistic data and operational constraints, the rule curve order should		The SVM and IERM are based on test conditions that stay the same for all plans so that the plans can be compared fairly. In addition, the SVM includes many alternative water supply scenarios to test how well alternatives would perform under a changing climate. In practice, however, water level decisions will be affected

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	specify actions to correct the operational and hydrological constraints of the management system, correct inflow forecasts, coordinate operation among dam operators in the watershed and reduce the lag times for executing flow changes at the dam.		by situational information not modeled in the SVM. The Study Board has recommended, and provided an example of, Operational Guidelines that discuss how the management under Rule Curves can be improved by more active targeting within the Rule Curve range.