

# Lake Manitoba and Lake St. Martin Outlet Channels Project

Review of the Environmental Impact Statement (March 2020)

First Round Comments and Information Requests submitted by  
Pimicikamak Okimawin to the Impact Assessment Agency of Canada  
June 2020

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PLEASE NOTE THAT THESE ARE CONSIDERED TO BE PRELIMINARY COMMENTS AND QUESTIONS ON THE SUBMITTED EIS PENDING FURTHER ENGAGEMENT WITH MANITOBA INFRASTRUCTURE AND CROWN CONSULTATION PROCESSES

Manitoba did not adequately consult with Pimicikamak during the development of the EIS or the revised EIS following the conformity review as required by the EIS Guidelines. There has been no formal sect.35 consultation process with Pimicikamak.

The global Covid-19 pandemic has made it impossible to conduct in-person discussions about this environmental assessment process over the last few months in Pimicikamak communities. This limits our ability to discuss the details of the EIS with many community members, including Elders and other resource users. Although there have been phone meetings with technical advisors, it is not a sufficient process to fully review this EIS and provide comprehensive additional information.

We expect that the timelines for the EA process will be adjusted to allow for proper engagement and consultation about this major project.

Please note that Pimicikamak has collaborated with Norway House Cree Nation in this review of the EIS. Several comments and questions referring to specific sections of the EIS in the table below reflect shared interests and therefore a number of questions are repeated or are similar. Certain topics are addressed in more than one section due to the structure of the EIS and the importance of the issues. Some questions have also been revised following the TAG meeting in early June 2020. The IR number sequence is maintained for easy comparison between Pimicikamak and NHCN submissions.

Please let us know if you require further clarification around these questions.

We look forward to the written responses.

## General comments on the EIS

1. One objective of an environmental assessment is to achieve an in depth understanding of a proposed project and the effects it may have on existing values and rights, and whether it can avoid compromising future exercise of rights. To this end, a meaningful level of engagement, consultation, and accommodation is required according to the EIS Guidelines and the Canadian *Constitution Act*. This has clearly not been accomplished for this environmental assessment process to date. This significant deficiency has been acknowledged in the EIS. However, there is still no clear plan to rectify this. We hope that IAAC will insist that this process meets the intent of the federal environmental assessment legislation to ensure a comprehensive review of this major project with full and meaningful engagement of all affected people.
2. Pimicikamak understands that the Lake Manitoba and Lake St. Martin Outlet Channels project is an addition to the existing flood control system which is designed to reduce damage to agricultural, urban and industrial land use in southern Manitoba.

The Manitoba Government has decided that this project is necessary and is the best solution to flooding problems within the current context of watershed manipulation, land use and property

rights, and the economy of Manitoba. The LMLSM Channels project is explained by Manitoba Infrastructure as a solution to the problem of flooding and water level fluctuations especially at Lake St. Martin. This situation has created serious consequences for Indigenous people in that area and must be addressed. All other alternatives for mitigating the consequences of the Fairford Water Control Structure, the Portage Diversion and regional land use practices coupled with natural conditions that contribute to extreme flooding events have been ruled out.

However, it is also clear that the most directly affected First Nations have many concerns about the project as proposed, and that there has been insufficient consultation with all Indigenous people in the region. Pimicikamak would like to support the interests of all of the First Nations in the Interlakes area in insisting on an EIS that clearly explains the context of this project and how the costs and benefits have been weighed.

We believe that the scope of the assessment and the material presented is too narrow for a reader to adequately understand the context of flood control systems in southern Manitoba and the place of the proposed LMLSM outlet channels in that system.

The EIS must provide information that is transparent and comprehensive to explain and acknowledge the context of this project proposal and the relative costs and benefits to different groups of people and elements of the natural environment. Our review of the material provided to date has concluded that the EIS does not provide a full explanation of the project justification. The EIS fails to clearly explain the relationship between the excessive flooding and water level fluctuations and the flood control system designed to alleviate flooding upstream. It is also deficient in data and information to predict and assess many environmental effects, effectiveness of mitigation measures and residual effects.

3. The existing flood control and hydroelectric systems have created extensive, long-term changes to the Nelson River watershed and Pimicikamak traditional territory. Even if the proposed project creates relatively small additional changes to the downstream effects, these effects must be thoroughly investigated and understood.
4. The EIS Guidelines ask that measures of significance be developed in collaboration with Indigenous people and must be expressed from the perspective of Indigenous people in an EIS. Much more work needs to be done to understand and reflect the significance of the impacts of this project proposal to Indigenous people.
5. Some of the outstanding questions Pimicikamak has regarding this project EIS include the following:
  - a. How well is it understood whether small changes in peak water flows in future may contribute to erosion problems and degraded shoreline conditions downstream on the Nelson River?

The EIS concludes that any downstream changes due to the LMLSM channels would be minor as the contribution of inflows from Lake St. Martin to Lake Winnipeg is relatively small. The conclusion of no discernable effects downstream is mainly based on modelling of potential peak water levels in Cross Lake under conditions that have been experienced in the past with the addition of the proposed channels.

The upper Nelson River is heavily influenced by the Lake Winnipeg Regulation (LWR). The outflow capacity of Lake Winnipeg and the nature of the outflow channels has been significantly altered by LWR. Changes in flows into Lake Winnipeg will influence operations of Jenpeg and the flows downstream into the Nelson River under certain conditions, especially high and low water extremes.

Pimicikamak is interested in additional modelling to better understand the potential effects of a high flood in other parts of the river system, and discussion around areas of uncertainty.

- b. How well is it understood whether the addition of new artificial flood channels will contribute to increasing nutrient loading in Lake Winnipeg and further downstream on the Nelson River?

Pimicikamak is concerned about turbidity and nutrient levels related to changes in hydrology due to flood control and hydroelectric operations that have increased erosion rates and decreased the complexity of riparian wetlands. The Coordinated Aquatic Monitoring Program (CAMP) reports suggest that turbidity and nutrient levels in the upper Nelson River are most strongly associated with Lake Winnipeg inflows. However, sampling to date is acknowledged to be insufficient to indicate trends in water quality in Playgreen Lake and Cross Lake. The sampling protocol is also not sufficient to consider trends in nutrient levels in back bays for example.

Pimicikamak members have observed increased turbidity in the Nelson River since Jenpeg was constructed and increased algae in the local waterways over time. Pimicikamak would like to engage in more discussions with Manitoba about surface water quality issues in relation to the proposed project and the water regulation infrastructure as a whole system.

- c. It would be helpful if there could be more discussion during this EA process about what has been learned from observations of other artificial channels in Manitoba, the types of habitat they provide, and the similarities and differences with what is being proposed for the LMLSM channels.
- d. There have been numerous structural changes in the water regulation system in Manitoba that have affected fish and fish habitat. Even when there are predicted serious effects on fish habitat, projects are licensed with the promise of monitoring and mitigation. Pimicikamak would like to engage in more discussion in the context of this EA process about the changes that have already occurred in fish populations, the levels of uncertainty about the causes, and the resources that would be committed to monitoring and mitigation such that “adaptive management” could actually be achieved.
- e. Pimicikamak is concerned about the cumulative effects of major infrastructure coupled with urban development and increasing human populations on wildlife over time. It is understood that declines in populations of moose for example, are probably related to a number of interacting complex factors including habitat change, disease, predation, increased access and hunting pressure. Since it is not well understood how to help moose populations rebound, any additional effects in all regions are of concern.

The EIS predicts that moose habitat will improve flooding in the study area due to decreased flooding. We like to discuss more about how the quality of riparian and wetland habitat is changed already, due to existing water regulation in the local and broader region. The channel corridors themselves, the road access, and the continued regulation of lake levels within more narrow ranges than under natural conditions can all affect the quality of moose habitat over time. We would like to consider in more detail what the residual effects of this project may be on moose and where the uncertainties lie.

- f. The EA process and this EIS requires more discussion of the measures being taken throughout the region to reduce the influence of land use practices on water drainage, flood plain retention, and water contamination. These measures are important for reducing the need for flood control infrastructure and mitigating the long-term effects of flood control.

Lake Manitoba and Lake St. Martin Outlet Channels Project - Technical Review Information Requirements March 2020

Reference IR#	Expert Dept. or group	EIS Guideline Reference	EIS Reference	Context and Rationale	The Proponent is Required to ...
<b>Engagement and Consultation with Indigenous Peoples</b>					
PIM - 01	PIM TAG reps	Part 1 Key Considerations  2. Guiding Principles Sections 2.2 and 2.3  Engagement with Indigenous groups  <i>“meaningful participation”</i>	EA Methodology	<p>The EA process is expected to help to ensure meaningful public participation. Given the complexity and extensive footprint of this large infrastructure project, the level of concern already expressed by Indigenous Treaty rights holders, and the long-term environmental consequences, Pimicikamak feels that this project should have been referred to a Review Panel.</p> <p>It is understood that measures to address the flooding problems around Lake St. Martin are overdue and that solutions must be found. It is also understood that there is a great deal of controversy around these flood control projects.</p> <p>However, attempting to rush the EA process, especially by failing to appropriately engage Indigenous people throughout the region who are affected by flood control infrastructure, and avoiding meaningful consultation, will not fulfill the purpose of a federal environmental assessment.</p>	For the record, please provide a clear, written rationale to explain why CEAA (IAAC) did not refer this project to an independent Review Panel.
PIM – 02	PIM TAG reps	Part 1 Key Considerations  Section 2.3 Engagement with Indigenous groups	EA Methodology	<p>Manitoba Infrastructure did not establish an engagement approach with Pimicikamak beyond a group information meeting.</p> <p>The EIS Guidelines require that the proponent work with potentially affected Indigenous groups to establish an engagement approach early in the EA process and integrate Indigenous knowledge into the assessment of environmental effects.</p>	<p>Please provide a written explanation as to why IAAC accepted the EIS for review when engagement with all Indigenous groups had not been adequate to inform the assessment.</p> <p>Please explain whether the engagement approach pursued by MI with Pimicikamak and other Indigenous groups has met the intent and specific requirements of CEAA 2012 and the EIS Guidelines.</p>

					Does IAAC consider this project to be an emergency?
03					
PIM - 04	PIM TAG reps	<p>Part 1 Key Considerations</p> <p>2.3 Engagement with Indigenous groups</p> <p>4. PREPARATION AND PRESENTATION OF THE ENVIRONMENTAL IMPACT STATEMENT</p> <p>4.2.2. Community knowledge and Indigenous knowledge</p>	<p>10.0 INDIGENOUS PEOPLES</p> <p>10.2.2 Existing Conditions for Traditional Land and Resource Use</p> <p>10.2.2.4 Existing Conditions by Indigenous Group</p>	<p>The EIS was prepared without integrating any indigenous knowledge or explanation of the traditional land use of Pimicikamak into the assessment or perspectives on mitigation measures and predicted residual effects.</p> <p>The EIS reports some of the preliminary questions and concerns expressed about the project by Pimicikamak but does not respond to these in a comprehensive way.</p> <p>The Guidelines state:  <i>“The proponent will incorporate into the EIS the community knowledge and Indigenous knowledge to which it has access or that is acquired through public participation and engagement with Indigenous groups, in keeping with appropriate ethical standards and obligations of confidentiality. The proponent will engage in a respectful dialogue with Indigenous groups about the collection and use of Indigenous knowledge and enter into agreements where necessary regarding the use of information during and after the EA. The proponent should collaborate with Indigenous groups to ensure, where possible, that the Indigenous knowledge is incorporated into the EIS in a way that appropriate for the Indigenous group.”</i></p> <p>For the section about Pimicikamak “in Indigenous Peoples and traditional land use”, the EIS includes only one paragraph, and the text does not clearly explain the authority, roles and relationships between Pimicikamak Okimawin and the Cross Lake Band of Indians.</p> <p>With regards to Traditional Land and Resource Use, the EIS then states:  <i>“The Indigenous engagement program to date and publicly available literature have not revealed information on TLRU for Pimicikamak Okimawin. Further engagement may provide information on</i></p>	<p>Given the acknowledged lack of engagement with Pimicikamak for this EIS, and the current situation with the global covid-19 pandemic, can the IAAC explain how we can collaborate to develop a plan to complete this EIS appropriately, followed by a full EIS review?</p> <p>Confirm that consideration for the fact that in-person community meetings cannot currently take place to discuss the engagement and consultation processes will inform a revised timeline for the EA process.</p>

				<p><i>interactions between Pimicikamak Okimawin’s TLRU and the Project, if any.</i></p> <p>The EIS acknowledges that:  <i>“While most of these communities had received some level of engagement with MI, several communities are still in the preliminary phases of engagement and the amount of information available is less than those who have been engaged for several years.”</i></p> <p>The IAAC accepted the EIS for review and is currently following the review process timelines in CEAA 2012. Pimicikamak has been told that there will be more opportunities for engagement as we move through this EA process. The suggestion is that this will make up for the lack of early engagement. The public comment period and TAG meetings are opportunities to contribute to the EA, however they are constrained by time and resources.</p> <p>The fact that we are experiencing unusual circumstances due to the pandemic presents additional constraints. During the EIS review stage, there can be no meetings in the communities to discuss this project proposal in person. This is a severe limitation on our ability to pursue good communication and adequate Indigenous engagement in this environmental assessment process.</p>	
PIM – 05	PIM TAG reps	<p>Part 1 Key Considerations</p> <p>Section 2.3 Engagement with Indigenous groups</p>	EA Methodology	<p>The Crown is expected to consult on major projects affecting Treaty lands and accommodate concerns when possible. One concern is that people be treated with respect and be engaged in transparent and collaborative dialogue.</p> <p>The Northern Flood Agreement is an important Treaty that was developed in response to serious adverse effects on the Nelson River due to hydroelectric production.</p> <p>The NFA and subsequent agreements with individual Nations set out obligations for meaningful consultation on future developments that will further affect the Nelson River.</p> <p>Even though the Northern Flood Agreement future development provisions for consultation may apply primarily to hydroelectric development, the flood control systems in southern Manitoba have an</p>	<p>The EIS explains fairly simply that the LMLSM channels project would have no direct effect on hydroelectric operations and that Manitoba Hydro has no opinion about this proposed project.</p> <p>It would be useful in the EIS to explain the context of the NFA and the relationship between major additions to the flood control infrastructure to hydroelectric operations and NFA agreements.</p>

				influence on the operations of the Lake Winnipeg Regulation structures and create high levels of concern among NFA communities.	
PIM – 06	PIM TAG reps	<p>Part 1 Key Considerations</p> <p>2.3 Engagement with Indigenous groups</p> <p>7.5. Significance of residual effects</p>	EA Methodology	<p>The Guidelines state that:</p> <p><i>“After having established the technically and economically feasible mitigation measures, the EIS will present any residual environmental effects of the project on the VCs identified in Section 6.3 above. For those VCs related to effects of changes to the environment on Aboriginal peoples, <u>the proponent must discuss the residual effects with the Indigenous groups identified in Part 2, Section 7 of these guidelines prior to submitting the EIS.</u> The residual effects, even if very small or deemed insignificant will be described.”</i></p> <p>The Guidelines further state that:</p> <p><i>“For those predicted adverse effects that relate to effects of the changes to the environment on Aboriginal peoples, the proponent will consider the views of the Indigenous groups in the determination of the definitions of the significance criteria. The EIS will document the terms used to describe the level of significance.”</i></p> <p>Pimicikamak was not involved in any discussions that reviewed the determination of significance criteria. How is it possible to evaluate whether the residual effects are significant to Indigenous people when there is inadequate consultation during the development of the EIS?</p> <p>From the perspective of Pimicikamak the magnitude, geographic extent, timing, duration, and frequency of serious adverse effects related to the Manitoba flood control system as a whole and the way in which flood waters are channeled faster into the Nelson River have a high level of significance. These effects are irreversible as long as these structures continue to operate.</p> <p>Adding new structures to the system creates high levels of stress, increased uncertainty, and frustration when the effects of the existing components continue unabated and compensation and accommodations are insufficient. The ecological and social context of this situation from the perspective of Pimicikamak and other Indigenous groups is essential</p>	<p>Please present the results of discussions with Indigenous groups including Pimicikamak regarding the predicted residual effects of the project and associated projects and Indigenous perspectives on these residual effects for each VC.</p> <p>This discussion must document perspectives on the VC’s that were not included in the assessment submitted to date such as the cumulative effects on the cultural landscape, and the psychological effects of the artificial control over the rivers and lakes.</p>

				to understand when evaluating this project proposal and ways to mitigate further cumulative adverse effects.	
<b>Environmental Assessment Methodology</b>					
PIM - 07	PIM TAG reps	1.2. Project Overview	3.0 Project Description	<p>Pimicikamak would like to better understand why the access road was excluded from the EA process under CEAA 2012. This is important since the cumulative effects of road development can be significant over a broad region over time. It is also important to understand how federal environmental assessment processes are being implemented with regards to large projects currently and in the future.</p> <p>The Guidelines state that: <i>“The EIS will describe the project, key project components and associated activities, scheduling details, the timing of each phase of the project and other key features. If the project is part of a larger sequence of projects, the EIS will outline the larger context.”</i></p> <p>It is understood that the conversion of the access road to an all-season road was excluded from the EA process under CEAA 2012 with approval from IAAC, as MI argued that this work was planned independently from the LMLSM outlet channels project and would be done regardless of whether this project went ahead. This argument appears to be inconsistent with earlier project descriptions included in baseline studies done in anticipation of an EA for this project.</p> <p>For example, in a baseline report done on heritage resources, the entire all-season access road connecting the proposed LMOC and the LSMOC is clearly described and mapped as part of the overall outlet channels project (Petch, V. 2017. Heritage Resources Characterization Study: Lake St. Martin Outlet Channels and Proposed All Season Access Road. Northern Lights Heritage Services)</p> <p>The access road is also described as part of the project in the section on cumulative effects assessment. The EIS states that:  <i>“The upgrade of the Lake St. Martin access road and the development of Project-specific quarries are proposed in order to service the Project and will be developed by Manitoba Infrastructure or in conjunction with a collaborative third party.”</i></p>	<p>Please explain the complete rationale, including economic, regulatory, and political factors for including the access road in earlier descriptions this project and excluding it from the current environmental assessment process.</p> <p>Discuss whether inclusion of the access road in the cumulative effects assessment achieves the same objectives as an evaluation of the project as a whole under CEAA 2012.</p> <p>Please explain whether there would be any difference in the way that this assessment is conducted under the new <i>Impact Assessment Act</i> with regards to the inclusion of the access road.</p>

				<p>The fact that the access road was not registered as part of the project for the assessment under CEAA 2012 does not alter the clear and direct relationship of the road to the outlet channels project.</p> <p>It is understood that if this project is considered to be an emergency, or a necessity, then excluding the road from the more comprehensive federal EA process could speed up the construction timeline. Construction on the road has now already begun well in advance of this EA process.</p> <p>The access road is included in the discussion of cumulative effects and indicates numerous adverse effects on traditional land and resource use. As with many other large projects, approving the construction of access roads and other supporting infrastructure in advance of the environmental assessment of a major project prejudices an objective assessment of the project and creates additional pressure to proceed.</p> <p>If this project is needed to mitigate adverse effects of the existing flood control infrastructure in combination with flood vulnerabilities, and the decision has been taken that it must be expedited, then this should be clearly explained in the Project Description. Not to do so fails to meet the intent of an environmental assessment process.</p> <p>If this assessment is to respect the Indigenous world view that recognizes interconnectedness across the landscape, then the regulatory processes must not work to circumvent a wholistic understanding of this suite of projects which are clearly related. Even if a situation is politically controversial, attempting to obfuscate the decisions being made is not going to improve relationships going forward.</p> <p>Decision-making around large public infrastructure projects must be transparent and respect Treaty rights.</p>	
PIM - 08	PIM TAG reps	<p>Scope of the Environmental Assessment</p> <p>Section 3.2 Factors to be considered</p>	<p>4.0 ENVIRONMENTAL ASSESSMENT APPROACH</p> <p>4.5.1.3 Mitigation of Environmental Effects</p>	<p>Subsection 19(1) of CEAA 2012 specifies the factors to be considered in the EA including mitigation measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the project.</p> <p>In many cases throughout the EIS, mitigation measures are only vaguely described. There is not enough information to determine whether the measures would be technically and economically feasible, how effective</p>	<p>Please provide comprehensive descriptions of proposed mitigation and monitoring programs sufficient to enable an assessment of whether they are technically and economically feasible.</p> <p>Explain limitations and uncertainties in more detail.</p>

				<p>they may be, what the residual effects might be, and the level of uncertainty associated with the predictions and suggested mitigation measures.</p> <p>It is important that the proposed mitigation measures be thoroughly reviewed in collaboration with affected Indigenous groups to understand whether they will be sufficient.</p>	[Specific topic areas will be addressed in more detail in the IR's that follow].
PIM – 09	PIM TAG reps	<p>Scope of the Environmental Assessment</p> <p>Section 3.2.2 Valued Components to be examined</p>	<p>4.0 ENVIRONMENTAL ASSESSMENT APPROACH</p> <p>4.4.1 Step 1: Selection of Valued Components</p>	<p>The Guidelines require that:</p> <p><i>“The list of VCs presented in the EIS will be completed according to the evolution and design of the project and reflect the knowledge acquired through public consultation and engagement with Indigenous groups.”</i></p> <p>Pimicikamak was not involved in scoping the valued components. If they had been, there may have been more attention paid to the ecological integrity of the watershed more broadly and the Regional Assessment Area would have been larger. Pimicikamak is not only interested in the potential direct effects on its traditional territory, but also the effects on adjacent regions since the long-term health of boreal ecosystems</p> <p>It is understood that it was not initially thought that Pimicikamak would be affected by this project. However, as of the summer of 2018, MI was directed to consider the potential effects on Pimicikamak and engage them in the EA process.</p> <p>For example, given the effects that water regulation has already had on aquatic mammal habitat throughout the region, beaver and muskrat would have been proposed as valued components. Although some people view beaver as pests due to conflict with some land uses, this species is an important part of natural boreal ecosystems, and direct or indirect exclusion of this species has long-term effects on the landscape.</p> <p>The comments by many other Indigenous people in the study areas suggest that there are concerns about direct effects on aquatic mammals as well.</p>	Please explain in more detail the process used to determine the “valued components” for this assessment.

				Although the assessment process has to prioritize, and not everything can be studied in detail, we would like to better understand how the selection of valued components was done, and to what extent it was based on collaboration with Indigenous people.	
PIM - 10	PIM TAG reps	Scope of the Environmental Assessment  Section 3.2.3 Spatial and temporal boundaries	4.0 ENVIRONMENTAL ASSESSMENT APPROACH  4.4 STEPS 1 TO 4: SCOPING THE ASSESSMENT  4.4.3.1 Spatial Boundaries	<p><i>The proponent is encouraged to consult with the Agency, federal and provincial government departments and agencies, local government and Indigenous groups, and take into account public comments when defining the spatial and temporal boundaries used in the EIS.</i></p> <p>The proponent was asked to document the main issues and comments raised during the engagement activities by each group and the proponent's responses.</p> <p>The operation of the Portage Diversion, for example, was raised numerous times by several groups including Pimicikamak as an issue of concern in relation to the proposed project. The EIS does not provide a comprehensive discussion of the relationship between this diversion and future operations with the new outlet channels. It provides a weak explanation for excluding it from consideration in this assessment.</p> <p>The effect of the channels and the operation of the flood control system as a whole on downstream water courses including the Nelson River was expressed as a concern. The EIS presents an analysis which suggests that the effect on the Nelson River would be minimal but not zero. The EIS then provides no further discussion on downstream effects.</p> <p>If the spatial boundaries had been scoped more thoroughly with downstream Indigenous groups, more attention would have been paid in the EIS to investigating the potential direct and cumulative effects of further changes to the southern Manitoba flood control system.</p>	<p>Explain why the Portage Diversion and its operation is not included within the spatial and temporal boundaries of the EIS given the level of concern expressed about this by the public and Indigenous groups, and the potential for the operation of the LMLSM channels to influence the operation of the Portage Diversion.</p> <p>Address downstream concerns in more detail in the context of further engagement and consultation processes with Pimicikamak and other downstream Indigenous Nations.</p>
<b>Project Overview, Project Purpose and Justification</b>					
PIM - 11	PIM TAG reps	Part 2 Content Section 1.2 Project Overview  Section 2 Project Justification	Section 2.2 Purpose of the Project  3.0 Project Description	It is important that the EIS Summary, additional EIS volumes, and public presentations detailing the project description and purpose provide a complete project description and justification including the broader context of flood control strategies in the province.	<p>Explain the broader context of the current flood protection strategy being pursued by Manitoba Infrastructure.</p> <p>a. Is it following the recommendations outlined in the 2016 KGS Report? In what ways does the</p>

			<p>3.1 Introduction Summary 3.1 PROJECT JUSTIFICATION</p> <p>The EIS Summary and Vol. 1 describe the larger context to some extent, but do not provide the reader with a complete understanding of the flood control strategy for the region as a whole.</p> <p>In describing the project, the EIS Guidelines require that:</p> <p><i>“The EIS will describe the project, key project components and associated activities, scheduling details, the timing of each phase of the project and other key features. <u>If the project is part of a larger sequence of projects, the EIS will outline the larger context.</u>”</i></p> <p>The Guidelines further specify:</p> <p><i>“The EIS will describe the purpose of the project by providing the rationale for the project, explaining the background, the problems or opportunities that the project is intended to satisfy and the stated objectives from the perspective of the proponent. If the objectives of the project are related to broader private or public sector policies, plans or programs, this information will also be included. The water regulation and flood management context of the Project will be described such that the need for and justification of the Project as proposed is explained. The interaction of the project with Manitoba’s integrated water control and flood mitigation network will be described.”</i></p> <p>For example, the Sections in the EIS on Project Overview and Project Justification do not directly mention the Portage Diversion or explain the broader context of the flood protection strategy in southern Manitoba. Although the Portage Diversion is addressed to some extent in the EIS in other sections in terms of its past influence on flood conditions on Lake Manitoba and Lake St. Martin, the relationship between the proposed outlet channels and continued operation of the Portage Diversion and potential upgrades is not clearly explained.</p> <p>The EIS states: <i>“Although the proposed Project will work collaboratively with existing flood protection infrastructure throughout the Assiniboine River and Lake Manitoba drainage basins, its objective relies on independent operation to relieve flooding in areas that remain vulnerable. As such, the Project is not considered to be an extension or expansion of other flood control measures constructed in Manitoba.”</i></p>	<p>current strategy deviate from the proposed strategy and recommendations?</p> <ul style="list-style-type: none"> <li>b. How does the proposed LMLSM outlet channels project fit into the current flood protection strategy? Discuss the extent to which the existence of the LMLSM channels will facilitate the construction and operation of other upstream flood control works in the future.</li> <li>c. Discuss the extent to which the purpose of the outlet channels is essentially to mitigate the effects of past and future flood control works on the Assiniboine River and the Fairford River.</li> <li>d. Explain the status of upgrades to the Portage Diversion and plans for the future.</li> <li>e. Provide a detailed explanation from an engineering perspective about whether increased capacity of the Portage Diversion described in the 2016 KGS report would be possible without the LMLSM channels to avoid exacerbating flooding in Lake Manitoba and Lake St. Martin.</li> <li>f. The 2016 KGS study suggests that only the LMLSM outlet channels project would require a federal environmental assessment, and not the upgrades to the Portage Diversion or the works recommended to increase flood capacity of the Assiniboine River. Discuss the reasons for this and whether this is accurate at this time.</li> <li>g. Explain how the operation of the outlet channels could influence the operation of the Portage Diversion in future under different flood scenarios.</li> </ul> <p>The influence of the outlet channels is modelled in information presented to the public during open house sessions in a slide entitled: “Annual Portage</p>
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				<p>The future operation of the LMLSM channels may be considered to be physically independent, however it will not be independent of the management of other flood control infrastructure upstream and downstream as this will influence to some extent whether the channels need to be used or not and for how long during high water periods.</p> <p>The EIS states:  <i>“The Portage Diversion was completed in 1970 and, when in use, diverts flow from the Assiniboine River into Lake Manitoba. From 1970 to 2003, the Portage Diversion contributed an average annual volume of 304,400,000 m3 from the Assiniboine River to Lake Manitoba (LMRRAC 2003).”</i></p> <p>The diversion is operated only periodically, however was put into use 44 times between 1970 and 2019, for periods of between 3 and 126 days, altering the inflow to Lake Manitoba.</p> <p>We have several questions related to the overall flood control strategy in southern Manitoba from a policy standpoint. Public transparency around how each component will rely on other components under various river flow scenarios is essential.</p> <p>Past reports including the 2016 KGS Group study explain the proposed LMLSM outlet channels as one component in a recommended three-part strategy which emphasized the necessity of a combined approach to address flood vulnerabilities on the Assiniboine River. Other components identified as essential to this overall flood mitigation strategy included improvements to lower Assiniboine River dikes to increase the river’s capacity to withstand floods and achieve improved flood protection; and upgrades to increase the capacity of the Portage Diversion.</p> <p>To understand the justification for this project and implications for the broader region, a more comprehensive explanation of the regional flood protection context and the strategy Manitoba is implementing is necessary.</p>	<p>Diversion Peak Discharge with and Without New Outlet Channels”.  <a href="https://www.gov.mb.ca/mit/wms/lmblsmoutlets/consultations/pdf/openhouse/portage_diversion_june_2018.pdf">https://www.gov.mb.ca/mit/wms/lmblsmoutlets/consultations/pdf/openhouse/portage_diversion_june_2018.pdf</a></p> <p>The results suggest that little difference in operations of the Portage Diversion is expected in future with the LMLSM outlet channels in place. However there seems to be some significant discrepancy in the data provided for <b>peak annual diversion flows</b> (cfs) in that package of material compared to the data set included on the MI website entitled “Portage Diversion in Operation”. Please provide some explanation for why the peak diversion flows are different for many of the years of operation reported, and some years of operation appear to be missing.</p> <p>h. The 2016 KGS Report recommended a multi-year wetland restoration pilot project for flood attenuation. Has this been implemented or are there plans to pursue this measure?</p> <p>i. The KGS Report recommended that designated flood areas be mapped on Lakes Manitoba, St. Martin and Dauphin, and on the Assiniboine River and that development be restricted in those areas to reduce infrastructure vulnerable to flooding. What is the status of that effort?</p> <p>j. The KGS report recommended purchasing lands on certain parts of the Assiniboine River floodplain instead of trying to protect them. Has this recommendation been pursued to any extent?</p> <p>k. Provide an update on interprovincial drainage issues that influence Manitoba’s flood protection strategy on the Assiniboine River.</p>
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PIM – 12	PIM TAG reps	Part 2 Content Section 1.2 Project Overview  Section 2 Project Justification	Section 2.2 Purpose of the Project  Summary 3.1 PROJECT JUSTIFICATION	<p>Neither the main body of the EIS, nor the Summary appear to provide a full explanation of the relationship between the Fairford River Water Control Structure and the changes in water levels on Lake Manitoba and Lake St. Martin from the natural pre-regulation condition. This is an important part of the LMLSM outlet channels project justification since it seems to be in part a measure to help mitigate the effects of the FRWCS.</p> <p>This is explained in the 2016 KGS Group report (p. 659) but is not made sufficiently clear in the EIS.</p> <p>The information is important for an understanding of the project justification as well as for the consideration of cumulative effects.</p>	<p>Please provide a more comprehensive description of the effect of the FRWCS compared to natural conditions on water levels and environmental conditions in Lake Manitoba, Lake St. Martin, Fairford River and Dauphin River.</p> <p>This information should also be included in summary information and in all public presentations and discussions.</p>
PIM – 13	PIM TAG reps	7. Effects Assessment  Other changes Section 7.1.11	Physical Environment  Watershed Context  Effect of the Environment on the Project  Operations	<p>The Guidelines state:</p> <p><i>“Should there be the potential for a change to the environment arising as a result of a federal decision(s), or changes to the environment on federal lands, lands in another province or lands outside Canada, the EIS will include baseline information on the environmental component likely to be affected (if this information is not already covered in other subsections of these guidelines).”</i></p> <p>This may seem like a very broad scope for an assessment, however any changes in the watershed that could cause a significant alteration of flow patterns could have an indirect effect on the operations of the flood control structures influencing Lake Manitoba and Lake St. Martin.</p> <p>The Fargo-Moorhead Diversion Project in North Dakota for example could have an indirect effect on the operation of the LMLSM project.</p> <p>See:  <a href="https://fmdiversion.gov/">https://fmdiversion.gov/</a>  <a href="https://www.youtube.com/watch?v=OiznYh_0gQM">https://www.youtube.com/watch?v=OiznYh_0gQM</a></p> <p>Artificial drainage of agricultural lands in North Dakota and Minnesota is continuing at a rapid pace. This in turn influences the vulnerability of downstream urban centers to flood damage.</p>	<p>Can MI briefly discuss the potential for proposed new flood protection works on the Red River in North Dakota and Minnesota to influence the flood control system in Manitoba by incrementally reducing floodplain storage in the watershed, and increasing the speed of flood water drainage towards Manitoba.</p>

				<p>If the speed of flood run-off along the Red River is further increased, would it increase the use of the floodway through Winnipeg or would there be a noticeable difference? During a large regional flood could it decrease the desirability of directing Assiniboine River flood water towards Winnipeg and increase the need for operation of the Portage Diversion?</p> <p>It would be helpful to briefly discuss the potential for these proposed new flood protection works on the Red River in North Dakota and Minnesota to influence the flood control system in Manitoba.</p>	
<b>Groundwater and Surface Water</b>					
PIM – 14	PIM TAG reps	7.2.2. Changes to groundwater, surface water, and fluvial morphology		<p>The Guidelines ask the proponent to “<i>carry out modelling as required to present and substantiate anticipated changes to groundwater and surface water quality and quantity in all project phases and in all operational scenarios.</i>”</p> <p>It is acknowledged that this task is extremely complex. The risk of flooding must be understood in the context of natural systems as well as with the flood control structures and land use practices in place now.</p> <p>The watershed has a history of extended wet and dry periods. There is evidence of frequent high floods occurring in the Assiniboine River long prior to water level monitoring, and of the potential for spring and fall flooding occurring in the Lake St. Martin area. Climate change may be affecting flood patterns however the data are insufficient to determine trends. The period of record for hydrometric parameters is still relatively short in the grand scheme of things.</p> <p>There is therefore a high level of uncertainty in developing flood risk estimates, especially if some of the highest floods on record have occurred recently.</p> <p>The flood control measures being developed are based on estimated flood occurrence rates using the hydrological data for the entire period of record. This has been the subject of some debate given that there have been several high-water years recently over a relatively short period.</p>	<p>Given the uncertainty of climate change and the potential influence on extreme weather events, discuss further what is the understanding of minimum flood protection for a 1:200 year flood prediction based on the historical record of recent decades compared to the 1:200 year flood estimated for the LMLSM basins <u>based on the full period of record</u>.</p> <p>Explain what was learned from the “sensitivity analysis” conducted by KGS.</p> <p>How would the simulation of Portage Diversion operations differ if the hydrometric data from 1970-on were used instead of the entire period of record?</p> <p>Discuss the uncertainty associated with the use of the Portage Diversion in future under the 2015 operations guidelines and the operation of the LMOC and the LSMOC given the tendency of the prairie climate to go through sustained wet and dry periods.</p>

PIM – 15	PIM TAG reps	7.2.2. Changes to groundwater, surface water, and fluvial morphology	Volume 1 Section 2.2 Purpose of the Project	<p>For Pimicikamak, one of the concerns is whether these flood channels could likely have an effect on downstream water bodies in the north basin of Lake Winnipeg, Playgreen Lake and seasonal water level and flow patterns on the Nelson River.</p> <p>Modelling conducted by Manitoba Hydro indicated some small increases in peak floods and duration of high-water levels during high water years and some variability in average daily water levels at other times.</p> <p>The conclusion presented in the EIS based on the modelling done by Manitoba Hydro is that the changes in water levels downstream would not be “discernable in the context of existing variable water levels”. Therefore, potential downstream effects were not explored any further in the EIS.</p> <p>There are numerous problems already created by the existing patterns of river regulation for flood control and hydroelectric generation within Pimicikamak traditional territory. Road access to Norway House during high water and low water periods at the ferry crossing over the east channel of the Nelson River is a concern. The health of aquatic and riparian ecosystems is already compromised. Navigation in open water seasons and in winter is negatively affected. People must travel further to gather plants, hunt and fish.</p> <p>Could the proposed outlet channels project further exacerbate these problems even with small incremental changes in the Lake Winnipeg outflows?</p>	<ol style="list-style-type: none"> <li>1. Water levels on Playgreen Lake are affected by the operation of Jenpeg which responds to Lake Winnipeg water levels. Please provide results of modelling to estimate the effect on Playgreen Lake water levels with and without the LMLSM outlet channels.</li> <li>2. Provide modelling to estimate the changes in the operations of Jenpeg with and without the LMLSM outlet channels.</li> <li>3. Please provide hydrographs with and without the project for Sipiwesk Lake showing Total Inflow, Water Level and Total Outflow between 1976 and 2018.</li> <li>4. Discuss whether the effect of the LMLSM channels routing floodwaters more quickly into Lake Winnipeg could exacerbate erosion, unstable ice conditions, periods of high and low water in the narrower river channels downstream even with small increases in peak levels and duration of high water conditions.</li> <li>5. Further discuss areas of uncertainty with these models and the source of uncertainty in model inputs.</li> <li>6. In the water balance modeling results presented, were the Red River inflows into Lake Winnipeg adjusted for the change in flows through the Portage Diversion, Lake Manitoba and Lake St. Martin?</li> </ol>

					<p>7. The operating rules for Lake Manitoba and Lake St. Martin are presented and there is no indication that Manitoba Hydro will have influence on regulation of that water way. Please confirm that regulation of the Portage Diversion, Lake Manitoba and Lake St. Martin releases will be for the purposes of flood control, competent ice formation and limiting fluctuations on the lakes and that Manitoba Hydro will not have influence on flows through this system with the interest of hydroelectric power production.</p> <p>8. The maximum peak water level occurred on Lake Winnipeg in 2011 and the simulation indicates that Lake Winnipeg would have been 0.07 m higher with the project in place. What is the effect of this additional peak on the erodibility of the shorelines of the lakes and conveyance channels downstream of Lake Winnipeg including, Playgreen Lake, Little Playgreen Lake, Cross Lake, and Sipiwesk Lake?</p> <p>9. Please have Manitoba Hydro comment on the third key assumption inherent to the water balance model: “No change to Manitoba Hydro’s operation of Lake Winnipeg Regulation when Lake Winnipeg water levels are within the power production range established in the LWR Interim WPA license.” Is it possible to provide simulations for MH operating decisions that would have resulted from the changed inflows due to the project?</p> <p>10. Given that this project affects the resulting peak discharges and water levels downstream of Lake Winnipeg, will there be a requirement to revisit severance lines along reserve boundaries and what effect will there be on erodible shorelines?</p> <p>11. Discuss whether it is entirely accurate to conclude that there will be “no discernable effects</p>
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					downstream” when the modelling does indicate at least small increases in peak water levels and duration of high water during a period of record high water levels.
PIM – 16	PIM TAG reps	7.2.2. Changes to groundwater, surface water, and fluvial morphology	Appendix 6I IMPACTS OF LAKE MANITOBA AND LAKE ST. MARTIN OUTLET CHANNELS PROJECT ON DOWNSTREAM WATER LEVELS (MANITOBA HYDRO 2019)	Manitoba Hydro conducted modelling to estimate the changes in Lake Winnipeg and some downstream water bodies that could be caused by the operation of the LMLSM outlet channels during high water years.  The changes with the LMLSM channels are based on data provided by MI.	Do these data reflect any potential changes that could occur in future in the inflows to Lake Manitoba from the Portage Diversion if capacity is increased?
PIM – 17	PIM TAG reps	7.2.2. Changes to groundwater, surface water, and fluvial morphology	Appendix 6K Lake Manitoba And Lake St. Martin Outlet Channels Impacts on Lake Manitoba And Lake St. Martin (Manitoba Infrastructure 2019b)	The description of the hydrologic analysis and modelling conducted by MI to evaluate the impact of the proposed Lake Manitoba and Lake St. Martin Outlet Channels states that:  <i>“Portage Diversion flows were estimated prior to 1970 (prior to construction) to develop consistent operating regime scenarios. The flows were estimated by applying the Portage Diversion operating guidelines in years prior to construction based on published Assiniboine River flows, City of Winnipeg river levels, and Lake Manitoba water levels.”</i>	This may have already been done perhaps in the KGS 2016 study, however is it possible to run the model excluding the Portage Diversion flows in order to gain a better understanding of the water balance without the diversion?  It would also be useful to run the model without the Fairford River Water Control Structure operations influence if the available data are adequate to estimate pre-FRWCS periods for Lake St. Martin, Fairford River and Dauphin River based on stage-discharge relationships.
<b>Water Quality</b>					
PIM – 18	PIM TAG reps	7.2.2.Changes to groundwater, surface water, and fluvial morphology	7.2.2.2 Overview of Fish and Fish Habitat Fish Habitat in the RAA Lake Manitoba	The Guidelines require that: <i>“the proponent will carry out modelling as required to present and substantiate anticipated changes to groundwater and surface water quality and quantity in all project phases and in all operational scenarios.”</i>	Please discuss the knowledge gaps referred to in the Leavitt et al. 2015 study and the current limitations in understanding processes of eutrophication in the Interlakes region, including the relative contribution of flood control measures.

				<p>The EIS assesses water quality only in relation to its effect on fish and fish habitat. Indigenous groups and others are interested in the effect that water regulation for flood control may have on water quality. Eutrophication is a serious concern in the region as it changes fish habitat and also the use and enjoyment of water bodies by people living around them.</p> <p>The EIS states:</p> <p><i>“Sediment cores from the south basin of Lake Manitoba show that Lake Manitoba has undergone substantial eutrophication since at least 1890 (Leavitt et al. 2015). This has included a rapid degradation of water quality and a two- to three-fold increase in the late summer abundance of cyanobacteria and chlorophyte algae compared to pre-1890 levels. Eutrophication was generally most rapid from 1890-1930, although the abundance of chlorophytes, cyanobacteria and total algae continued to increase throughout the 20th century in direct proportion to the growth of the human population in western Canada.</i></p> <p><u>Recent data on primary productivity in Lake Manitoba are limited.</u> However, mean chlorophyll a concentration in the north basin ranged from less than 9 µg/L to 13 µg/L and were determined to be driven by nutrient availability rather than light limitation (Page 2011).”</p>	
PIM – 19	PIM TAG reps	7.2.2.Changes to groundwater, surface water, and fluvial morphology	6D.4 REGIONAL AND LOCAL SURFACE WATER QUALITY	<p>The EIS presents data on phosphorus levels measured in different parts of Lake Manitoba during the 2011 flood. Levels were elevated for a period of time in the south basin. However, sampling was limited.</p> <p>There have been several studies done on Lake Manitoba that suggest that the Portage Diversion is responsible for contributing significant phosphorus inputs during flood conditions. It is not well understood how this shallow lake sequesters phosphorus and how the LMLSM Channels could facilitate increased export over time into Lake St. Martin and Lake Winnipeg. There appears to be limited reference to and discussion of these studies and levels of uncertainty about this issue in the EIS.</p>	<p>Please discuss in more detail what is known about the effects of the Portage Diversion on phosphorus loading in Lake Manitoba. Discuss the levels of uncertainty associated with this issue given the level of water quality monitoring undertaken in Lake Manitoba and the Assiniboine River.</p> <p>Discuss what is understood about the contribution of phosphorus to Lake Manitoba from the Portage Diversion over time, and to what extent available data may limit this understanding.</p> <p>Include consideration for potential increased use and capacity of the Portage Diversion in the future.</p>

PIM - 20	PIM TAG reps	7.2.2. Changes to groundwater, surface water, and fluvial morphology	6D.4 REGIONAL AND LOCAL SURFACE WATER QUALITY  Wetland loss and degradation	<p>The changes in wetlands that have already occurred in Lake Manitoba may have reduced wetland function in relation to nutrient cycling. This may be the case not only in the Delta marsh, but also along all riparian areas that have been affected by long-term water level regulation. A better understanding of the potential pathways of cumulative effects on water quality related to changes to wetlands, including seasonally flooded riparian wetlands would be useful for this assessment.</p> <p>It is understood that this is a complex question and probably cannot be addressed in quantitative terms due to a lack of data.</p> <p>However, the cumulative effects of wetland loss and degradation on water quality is an important issue for all elements in the system. For example, in relation to the effects of the EOC the EIS reports that:</p> <p><i>“Increased phosphorus levels have also been recorded in wetlands following reductions in tree cover due to flooding (Pinder et al. 2014) with increased levels persisting for several years.”</i></p>	<p>Please provide additional discussion of the potential effects of changes in wetlands due to the project in combination with other flood control works throughout the region on phosphorus inputs to water bodies and eutrophication processes.</p> <p>Discuss data gaps that limit such an analysis.</p>
PIM - 21	PIM TAG reps	7.2.2.Changes to groundwater, surface water, and fluvial morphology	6D.4 REGIONAL AND LOCAL SURFACE WATER QUALITY	<p>The EIS refers to evidence from a study that concluded that the Assiniboine River would have naturally overflowed into Lake Manitoba in the past under similar water levels that were experienced in 2011 in the absence of flood control infrastructure and other human development. This text suggests that water levels would have been almost as high on Lake Manitoba under similar watershed conditions without the Portage Diversion.</p> <p>This information seems to have been included in order to suggest that the Portage Diversion may make little difference to Lake Manitoba water levels during a very high flood.</p> <p>However, it is important to Pimicikamak to understand the environmental influence that the Portage Diversion, other flood control infrastructure, and other significant human land uses do have. For example, flushing river flow more quickly through an artificial channel during extreme events can also have an influence on water quality</p>	<p>Discuss the levels of uncertainty related to understanding the potential contribution of nutrients and contaminants overflowing from the Assiniboine River into Lake Manitoba under natural flood conditions in the past.</p> <p>For example, how would the existence of more intact wetlands potentially influence nutrient run-off into the waterbodies?</p> <p>Discuss the differences in flood levels in the Nelson River during a high-water year similar to 2011 in the absence of flood control infrastructure and other significant human development.</p>

				parameters compared to over-land flow through naturally vegetated lowlands.	
<b>Heritage Resources</b>					
PIM – 22	PIM TAG reps	7.1.12 Human Environment	Chapter 11.0 CUMULATIVE EFFECTS  11.7.2.1 Selection of VCs  Heritage resources	<p>The Guidelines state that:</p> <p><i>“Heritage resources to be considered will include but not be limited to, physical objects (e.g. middens, culturally-modified trees, historic buildings), sites or places (e.g. burial sites, sacred sites, <u>cultural landscapes</u>) and attributes (e.g. language, beliefs).”</i></p> <p>If Indigenous groups had the opportunity to inform the selection of VC’s, the cultural landscape <u>as a whole</u> on a broader regional level would have been understood to be an important VC. People traditionally moved around and used lands over large areas. Direct impacts on special places, conversion and degradation of the lands and waters, and fragmentation of land use access is cumulative and overlaps among Nations.</p>	Present the results of discussions with Indigenous Nations in the region that focus on cultural landscapes and how to define boundaries for the regional and cumulative effects assessment of the LMLSM channels in the context of the flood control system in the watershed.

PIM - 23	PIM TAG reps	<p>7.5 Significance of residual effects</p> <p>7.6.3. Cumulative effects assessment</p>	<p>Chapter 11.0 CUMULATIVE EFFECTS</p> <p>11.7.2.1 Selection of VCs</p> <p>Heritage Resources</p> <p>9.6.5.1 Significance of Residual Environmental Effects from the Project</p> <p>9.6.9.3 Cumulative Effects</p>	<p>There are several conclusions regarding the significance of residual effects on heritage resources have that are based on insufficient evidence and determined prior to completion of the necessary studies.</p> <p>The EIS states that <i>“cumulative effects were not assessed for heritage resources (from Chapter 9, Section 9.6). A preconstruction heritage resources impact assessment of the PDA will be conducted and submitted to the Manitoba Historic Resources Branch (HRB).</i></p> <p><i>“Approval by the HRB, of an HRIA of the PDA conducted under a valid permit will indicate that there are no residual effects and therefore no cumulative effects on heritage resources therefore it is anticipated that the Project has a low potential to remove a known or inadvertently exposed Heritage Resource and will not act cumulatively on change to heritage resources.”</i></p> <p><i>“Based on the assessment of the proposed effects of the Project on heritage resources and the proposed mitigation measures, the residual effects are considered not significant.”</i></p> <p><i>“In the absence of residual effects, there is no pathway for cumulative effects and, therefore, no cumulative effects assessment is warranted.”</i></p> <p>It is not possible to assess the adequacy of the EIS with the level of information provided for the Heritage Resources assessment. The baseline information is acknowledged to be insufficient and conclusions are presented based on work that has not yet been completed. This work must be done in advance of a decision on the adequacy of the EIS according to the Guidelines.</p>	<ul style="list-style-type: none"> <li>a. Provide the results of the Heritage Resources Impact Assessment when it is complete. It is expected that such work be done before the conclusion of an EA process under CEAA 2012.</li> <li>b. Explain the comprehensive engagement process with Indigenous groups in the region and integrated research approach taken to inform this assessment.</li> <li>c. Provide a comprehensive cumulative effects assessment of impacts on Heritage resources and the cultural landscape created by the multiple components of the flood control infrastructure in this watershed. This should include discussion of the probable loss of archaeological sites and other culturally significant sites that has already occurred along the Fairford River due to the construction of the FRWCS.</li> <li>d. Present the results of discussions of residual effects and the significance of residual effects including cumulative effects on heritage resources held with all affected Indigenous peoples.</li> </ul>
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Wetlands, Vegetation and Migratory Birds					
PIM - 24	PIM TAG reps	7. EFFECTS ASSESSMENT  7.1.7. Riparian, Wetland and Terrestrial Environments	8.2 VEGETATION  8.2.5.1 Significance of Residual Environmental Effects from the Project	<p>The EIS states that:</p> <p><i>A significant effect on vegetation is one that:</i></p> <ul style="list-style-type: none"> <li>• <i>threatens the <u>long-term persistence or viability</u> of a plant species or community <u>in the RAA</u>, including effects that are contrary to or inconsistent with the goals, objectives or activities of recovery strategies, action plans and management plans, published conservation targets, or</i></li> <li>• <i>results in uncompensated loss of wetland function, or</i></li> <li>• <i>threatens the long-term availability of traditional-use plants within the RAA.</i></li> </ul> <p><i>Based on the assessment of the proposed effects of the Project on vegetation and the proposed mitigation measures, the residual effects are considered not significant for landscape diversity, community diversity, species diversity and wetland functions”.</i></p> <p>Pimicikamak was not involved in determining how to define significant effects on vegetation or any other valued ecosystem components. The perspectives of Indigenous people do not seem to be reflected in this assessment.</p> <p>According to the EIS approach, a prediction of extirpation from a large area is required before a decline in populations of species or communities is considered to be important. Since most boreal species of plants are relatively widespread, it is less likely that any impacts would be considered to be significant.</p> <p>This approach does not capture the concerns Pimicikamak has about degradation of vegetation communities over large areas created by successive projects, especially the cumulative effects on shoreline plant communities.</p>	Explain how Indigenous engagement informed the definitions and thresholds for determining the significance of effects on plant species and communities.
PIM - 25	PIM TAG reps	7.1.8. Migratory birds and their habitat	11.12.1 Project Residual Effects Likely to Act Cumulatively	The EIS does not include the existing flood control structures and operations in the cumulative effects assessment, arguing that current conditions simply include the effects of past projects.	Explain how the EIS provides an understanding of the cumulative loss or degradation of wetlands and change in wetland function, including riparian wetlands in the large lakes due to flood control infrastructure in the Lake Manitoba and Lake St. Martin watershed.

				<p>There has been long-term concern regarding the effects of water regulation on riparian wetlands in this region. The degradation of the Delta Marsh is the subject of considerable research and management attention which is focused on the flood control infrastructure and policies to regulate Lake Manitoba within a range that is more restricted than under natural conditions.</p> <p>The EIS predicts that <i>“effects on Delta Marsh are not expected as changes in Lake Manitoba water levels are small (2.4 cm or less).”</i></p> <p>However, the hydrological changes that affect wetlands have to be investigated with consideration for seasonal patterns as well as multi-year patterns. For example, periodic high and low water levels help to rejuvenate certain species in wetlands. The EIS touches on this issue. However more discussion of this complex situation in relation to long-term lake level regulation would be helpful.</p> <p>The EIS cites studies that report a decline in waterfowl productivity in Lake St. Martin and Lake Pineimuta since operation of the FRWCS began due to the increased variability and higher water levels. This can be related to changes in riparian and aquatic vegetation communities and structure that affect feeding and cover, as well as direct effects of fluctuating water levels on nesting success.</p> <p>The EIS requires a more comprehensive approach to assessing the cumulative effects of the existing flood control infrastructure on migratory bird habitat including riparian wetlands.</p>	<p>Please explain what is understood about the cumulative effects of past projects that have affected wetlands and migratory bird habitat including the Portage Diversion and the FRWCS.</p> <p>Discuss what is known or predicted about the possible long-term effects on riparian wetland habitats of the operational policies designed to regulate Lake Manitoba within a narrower range than under natural conditions.</p> <p>Explain where data gaps exist that limit our understanding.</p>
PIM - 26	PIM TAG reps	<p>7. EFFECTS ASSESSMENT</p> <p>7.1.7. Riparian, Wetland and Terrestrial Environments</p>	12.6 VEGETATION	<p>The EIS states that:</p> <p><i>“Wetland mapping of the LMOC PDA will be evaluated to identify all potentially affected wetlands. Wetland compensation may include wetland creation, and wetland enhancement or restoration. Effectiveness of wetland compensation will be conducted as part of post-construction revegetation monitoring.”</i></p>	<p>Discuss specifically what can and will be done to compensate wetland loss.</p> <p>What is possible in terms of the quality and characteristics of engineered or restored wetlands in this area?</p> <p>Provide relevant examples of wetland creation, enhancement or restoration in Manitoba. Explain how effective these have been in terms of creating functional and diverse habitats that meet the requirements of wetland compensation.</p>

					Explain the challenges involved in compensation for loss of wetlands of the magnitude predicted for the LMLSM project.
PIM - 27	PIM TAG reps	7. EFFECTS ASSESSMENT  7.1.7. Riparian, Wetland and Terrestrial Environments	8.2 VEGETATION  8.2.5.1 Significance of Residual Environmental Effects from the Project	The EIS states:  <i>"Loss of SOCC and species of interest to Indigenous groups should not occur with further pre-construction surveys and Indigenous engagement. Wetland compensation should off-set affects [sic] to wetlands."</i>  The conclusions presented in the EIS appear to be premature given the number of data gaps identified in the EIS and the field work and Indigenous engagement still to be done.	Provide a detailed work plan for the remaining work to be done to understand potential effects on vegetation communities, SOCC and species of interest to Indigenous groups.  Discuss how it is possible to assess residual effects with the level of information that currently exists.
PIM - 28	PIM TAG reps	7. EFFECTS ASSESSMENT  7.1.7. Riparian, Wetland and Terrestrial Environments	12.6 VEGETATION	The Guidelines require that the proponent: <i>"develop a follow-up program to verify the accuracy of the assessment or to dispel the uncertainty concerning the effectiveness of mitigation measures for certain cumulative effects."</i>  The EIS briefly discusses the intention to design a follow-up and monitoring program for effects on vegetation. There is only vague information about monitoring and follow-up, as is the case with most other VC's addressed in the EIS.  For example, revegetation of channels to prevent erosion and reestablish some functional habitat characteristics is mentioned, however there is not enough detail on how this would be done to determine whether the residual effects assessment is reasonable. The EIS acknowledges that plans for channel revegetation have not been finalized, including desired plant species and relative species cover.	Provide the revegetation plan for the channels if it has been developed.  What has been learned from revegetation patterns along artificial flood channels in other parts of Manitoba?  Are there other channels in Manitoba that are comparable in terms of design, operations and ecosystem context that we can learn from? If so, what types of vegetation communities have developed in those areas?  What challenges exist with weed control and invasive species and what measures are being used to address these along other artificial channels?

Invasive Species					
PIM - 29	PIM TAG reps	7. EFFECTS ASSESSMENT  7.1.6 Aquatic Invasive Species	CHAPTER 7 BIOPHYSICAL EFFECTS ASSESSMENT ON AQUATIC ENVIRONMENT  Aquatic Invasive Species	<p>The EIS concludes that the project is unlikely to increase the risk of the spread of aquatic invasive species into Lake St. Martin and Lake Manitoba.</p> <p>The increased outlet capacity of Lake Winnipeg and the operation of the LWR which responds to changes in the inflows to Lake Winnipeg may have an influence on the spread of invasive aquatics. Pimicikamak is concerned about any additional capacity in the flood control system that allows flood waters to be flushed more quickly north into the Nelson River.</p> <p>Zebra mussels are already present in Lake Winnipeg, Playgreen Lake and moving into the Nelson River.</p>	Discuss what is understood about the potential for increases in the rate of passage of flood waters into Playgreen Lake and the Nelson River to influence the spread of invasive species and our ability to control that.
Wildlife and Species at Risk					
PIM - 30	PIM TAG reps	4. PREPARATION AND PRESENTATION OF THE ENVIRONMENTAL IMPACT STATEMENT  4.2.2. Community knowledge and Indigenous knowledge	Determination of significance criteria and assessing significance of residual effects	<p>The EIS Guidelines state that:</p> <p><i>“The proponent will integrate Indigenous knowledge into all aspects of its assessment including both methodology (e.g. establishing spatial and temporal boundaries, defining significance criteria) and analysis (e.g. baseline characterization, effects prediction, development of mitigation measures) and will clearly describe this integration.”</i></p> <p>The criteria for determining the significance of residual effects were not established with any input from Pimicikamak.</p> <p>The EIS state that: <i>“A significant residual effect on wildlife is defined as one that, following the application of mitigation measures, threatens the long-term persistence or viability of a wildlife species in the RAA.”</i></p> <p>This suggests that anything short of extirpation from the RAA would be determined to be not significant.</p>	Discuss the importance of degradation of wildlife habitat in the RAA over time and the uncertainty associated with assessing the significance of cumulative effects of decreasing wildlife populations on traditional use of lands by Indigenous people.

PIM - 31	PIM TAG reps	7.1.7.Riparian, Wetland and Terrestrial Environments  Species at Risk	11.13 WILDLIFE  11.13.2.3 Residual Cumulative Effects on Change in Habitat	The EIS reads:  <i>"Past and present activities and developments have resulted in the loss of native grassland, wetland, and forest habitats which has reduced habitat availability for some species at risk (SAR) and SOCC in the RAA, such as eastern whip-poor-will, red-headed woodpecker, and bobolink. Overall, agriculture, residential development, resource use, and transportation corridors have altered and fragmented the current regional landscape and contributed to an existing cumulative effect on wildlife in the RAA."</i>  As with the assessment of other VC's, the effects of other flood control infrastructure are not mentioned in this description.	Please provide discussion of what is known of the cumulative effects of flood control infrastructure on wildlife habitat in the RAA including the existing FRWCS.
PIM - 32	PIM TAG reps	7.1.7. Riparian, Wetland and Terrestrial Environments	Table 11.6-2 Change in Land Cover Types in the RAA	One conclusion is that "wetland abundance will be reduced by 0.8% in the RAA".  The level of understanding of the types of wetlands lost, for example the % loss of relatively diverse marsh habitat is recognized in the EIS as weak on some levels. Due to the limited survey data for several areas, broader land cover classes were mapped for example to roughly categorize wetland types. The EIS states that ground truthing was not done for many areas. This is one reason for prediction confidence to be rated as moderate.  It is also indicated in the EIS that additional field surveys are required to gain a better understanding of the presence of SOCC in many areas, and ground truth some of the land cover classification.	Provide a description of the planned additional field programs to support the assessment of changes in land cover and habitat diversity and SOCC.
PIM - 33	PIM TAG reps	7.1.7. Riparian, Wetland and Terrestrial Environments	11.13 WILDLIFE  11.13.2.3 Residual Cumulative Effects on Change in Habitat	The assessment focuses on changes in habitat types as a measure of effects on most wildlife. Wetlands are mapped and categorized at a scale that does not necessarily reflect complex habitats such as those created and occupied by beaver and muskrat. The EIS does mention that there are numerous beaver dams in the Buffalo Creek area and indicates the importance of such wetlands for other species such as waterfowl.  Some discussion of the effects of the EOC on beaver influenced wetlands is included in the EIS.	Discuss what is known about beaver colony density in the PDA and LAA and the influence on wetland habitat diversity.  Discuss generally what is known about the effects of combined flood control and hydroelectric infrastructure on aquatic mammals in the Lake Winnipeg/Nelson River watershed.  Please describe data gaps that limit such assessment.

				<p>It would be useful to have more discussion of the potential effect of the project on beaver colonies in the PDA and LAA.</p> <p>It would also be useful for the reader to have some understanding of the effects of the combined systems of flood control and hydroelectric operations that together affect aquatic mammal habitat in the Lake Winnipeg/Nelson River watershed.</p> <p>These systems are interconnected and the habitat degradation is incremental. Pimicikamak and members of other Indigenous Nations travel the region widely and incremental degradation of habitat throughout these waterways is important.</p>	
<b>Fish and Fish Habitat</b>					
PIM - 34	PIM TAG reps	7. Effects Assessment 7.1.5 Fish and Fish Habitat	7.2 FISH AND FISH HABITAT 7.2.7 Prediction Confidence	<p>The EIS outlines briefly the numerous data gaps for fish and fish habitat and states that:</p> <p><i>“Despite the gaps, data were available from most waterbodies in the LAA and are considered adequate for describing the existing aquatic environment, identifying potential interactions and identifying the avoidance and mitigation measures that would be necessary to limit potential effects on fish and fish habitat. However, <u>additional data will be required, prior to construction, to address potential changes to the Project coming out of detailed design and to ensure that the baseline is adequate for an effective aquatic effects monitoring program.</u>”</i></p>	<p>Please provide details of the additional data collection program planned for fish and fish habitat prior to construction.</p> <p>In what ways will the data likely remain limited and compromise the analysis of future monitoring data?</p>
PIM - 35	PIM TAG reps	7. Effects Assessment 7.1.5 Fish and Fish Habitat	7.2.9.1 Permanent Alteration or Destruction of Fish Habitat	<p>The EIS states that:</p> <p><i>“Over time, aquatic vegetation may become established along the margins of the channel.”</i></p> <p>More information about the potential for aquatic vegetation to establish under the predicted physical conditions would be useful.</p>	<p>Discuss what has been learned about the establishment of aquatic vegetation in other artificial flood channels in Manitoba if there are any that can be used as reference.</p> <p>What is known about the quality of aquatic vegetation communities in artificial flood channels as habitat for fish?</p> <p>Explain the similarities and differences between the LMLSM channels and any potential reference channels.</p>
PIM - 36	PIM TAG reps	7. Effects Assessment 7.1.5 Fish and Fish Habitat	7.2.4.2 Permanent Alteration or Destruction of Fish Habitat	<p>The EIS states that:</p> <p><i>“Pool depths upstream of the drop structures will be sufficient to maintain a wetted channel upstream to the next drop</i></p>	<p>Discuss whether there is any risk of there being inadequate base flows during dry years and very low flow periods to maintain adequate fish habitat in both the outlet channels and the Dauphin and Fairford Rivers.</p>

			Mitigation	<p><i>structure. Together with the channel geometry and drop structures, baseflows in the LSMOC will limit variations in water levels in the LSMOC when not in use and allow a stationary, lake-type ice cover to form on the channel without freezing to the bottom. Groundwater seepage is also expected to augment these baseflows along the channel length.”</i></p> <p>One concern is the quality of fish habitat that the channels can provide, and another is what will be the effect on the Fairford and Dauphin Rivers of ensuring adequate base flows in the channels during low flow periods.</p> <p>The EIS states that modelling has not been done to estimate the effect on the river outlets of providing base flows. There are of course many uncertainties associated with this including ground water inflows into the channels.</p> <p>Table 6.4-18 “Changes in Dauphin River Flows” provides the results of modelling changes in flows in the Dauphin River with and without the LMLSM outlet channels under low, medium and high flow scenarios.</p> <p>The EIS reports estimated average outlet channel flows in Table 6E-2 Average Monthly Lake Water Levels and OC channel Flows.</p>	<p>Discuss further the extent to which the provision of base flows to the channels will ensure fish habitat of a quality and function that will offset the permanent alteration or destruction of fish habitat.</p> <p>Include discussion of the uncertainties associated with these predictions.</p>
PIM - 37	PIM TAG reps	<p>7. Effects Assessment</p> <p>7.1.5 Fish and Fish Habitat</p> <p>7.6.3 Cumulative Effects Assessment</p>	<p>11.11 FISH AND FISH HABITAT</p> <p>11.11.1 Project Residual Effects Likely to Act Cumulatively</p>	<p>The Guidelines state that:  <i>“Water management systems and natural and/or controlled flood events, including flooding that occurred in the Interlakes Region in 2011, should be considered as projects or activities that are sources of potential cumulative effects.”</i></p> <p>The Fairford River Water Control Structure is not included in the list of projects that may have cumulative effects along with the LMLSM channels.</p> <p>The EIS explains that:  <i>“Residual effects of past and present projects have <u>already been included</u> in the existing conditions for fish and fish habitat and have been assessed for their potential to interact with the Project in the fish and fish habitat effects assessment (Chapter 7). <u>Therefore, potential residual effects of the</u></i></p>	<p>Discuss what is understood about the past and current effects of the FRWCS on fish and fish habitat.</p> <p>Where uncertainty exists, discuss probably pathways of effect. Explain data gaps more clearly.</p> <p>Discuss what can be understood about the cumulative effects on fish and fish habitat of the FRWCS along with the LMLSM project.</p> <p>Discuss uncertainties associated with the decline in walleye spawning in the Dauphin River and potential linkages with the operation of the FRWCS.</p>

				<p><u>Project are only assessed for their potential to interact cumulatively with future projects.”</u></p> <p>However, there is insufficient information and analysis in the EIS to understand the range of effects on fish and fish habitat already created by the Fairford River Water Control Structure which has been in operation since 1961.</p> <p>Some discussion of studies of fish use and movement in the Fairford River is included in the EIS in the section <i>Fairford River and Inlet Area</i>. However, the section provides limited discussion of the effects of the FRWCS.</p> <p>Some mention is made of possible pathways of effect on fish due to the FRWCS:</p> <p><i>“The fish affected are already disturbed by passage over the FRWCS.”</i></p> <p><i>“According to Katapodis et al. (1991), commercial fishers on Lake Manitoba expressed concerns as early as 1963 that walleye were leaving Lake Manitoba through the Fairford River and were unable to return because of inadequate fish passage. However, evidence to support this assertion is not strong as commercial catches of walleye in Lake Manitoba had been declining since 1950, 10 years prior to construction of the FRWCS.”</i></p>	
TRADITIONAL LAND AND RESOURCE USE					
PIM - 38	PIM TAG reps	7.6.3 Cumulative Effects Assessment	11.18 TRADITIONAL LAND AND RESOURCE USE  11.18.1 Project Residual Effects	<p>The EIS states that:</p> <p><i>“The Project is anticipated to cause residual effects to traditional land and resource use (TLRU), including to availability of traditional lands and resources for current use, by changes in access to lands and traditional resources for current use, by changes to cultural and spiritual sites or areas, and by changes to the cultural value or importance associated with current use. “</i></p>	Provide a comprehensive discussion of what is understood about the effects of the FRWCS on traditional land and resource use. Refer to all relevant available studies and traditional knowledge.

			Likely to Act Cumulatively	<p>As with other VC's, the EIS does not include the FRWCS in the list of projects that would interact with the LMLSM project in contribution to cumulative effects on traditional land and resource use because as with other VC's it argues that past projects are already taken into account in the documentation of baseline information.</p> <p>This argument is insufficient for several reasons:</p> <ol style="list-style-type: none"> <li>The cumulative effects assessment is intended to increase understanding of changes in the environmental caused by multiple projects. To this end, more comprehensive analysis and discussion of the FRWCS within the context of cumulative effects is required.</li> <li>The operation of the FRWCS is variable over time and will change with the LMLSM channels project.</li> <li>Other past projects are included on the list of other projects or physical activities identified for consideration in the cumulative environmental effects assessment for this EIA - Table 11.1-1.</li> <li>The reference point for cumulative effects of water control infrastructure for Indigenous Peoples is the pre-FRWCS period.</li> </ol> <p>Despite the fact that there was no formal environmental assessment done prior to these earlier projects, the specific influence of the FRWCS and other projects on the natural environment needs to be considered and acknowledged. There is a body of Indigenous knowledge based on observations of the changes that have occurred. This is touched on in the EIS, however is not explained adequately to give the reader an understanding of the impacts.</p>	
<b>Cumulative Effects Assessment</b>					
PIM - 39	PIM TAG reps	7.6.3. Cumulative effects assessment  Scope and RAA	Chapter 11.0 CUMULATIVE EFFECTS	The Guidelines ask the proponent to <i>“identify and provide a rationale for the VCs that will constitute the focus of the cumulative effects assessment, focusing the cumulative effects assessment on the <u>VCs most likely to be affected by the project</u> and other projects and activities.”</i>	Conduct a cumulative effects assessment that includes the upstream and downstream flood control infrastructure that both necessitates and makes allowable the construction of the LSMLM outlet channels.

			<p><i>“These cumulative effects boundaries will also generally be larger than the boundaries for the corresponding project effects. <u>At a minimum, cumulative effects for each applicable VC should be considered for Lake Manitoba, Lake St. Martin, and Lake Winnipeg respectively.</u>”</i></p> <p><i>“Specify other projects or activities that have been or that are likely to be carried out <u>that could cause effects on each selected VC within the boundaries defined, and whose effects would act in combination with the residual effects of the project. <u>Water management systems and natural and/or controlled flood events, including flooding that occurred in the Interlakes Region in 2011, should be considered as projects or activities that are sources of potential cumulative effects.</u>”</u></i></p> <p>The influence of the diversions from the Assiniboine River during high water years on flooding in the Interlake region, on water quality, fish and fish habitat, wetland and riparian habitats, debris transport, and land use are major concerns which should have been addressed in this EIS.</p> <p>Government Policy and management decisions on flood control over time have had a significant influence on environmental conditions in the LMLSM region, and the broader watershed as a whole. They influence the extent to which additional major flood control infrastructure is found to be necessary in various parts of the system.</p> <p>The influence of land use decisions in upstream regions of the watershed such as continued drainage of agricultural fields; degradation of wetlands; exclusion of beavers; development of infrastructure on flood plains necessitating flood protection; and application of phosphate fertilizers, etc. all have the potential to influence the magnitude of floods, the resulting operation of flood control infrastructure and the quality of water moving through the system. These are classic examples of cumulative effects that can alter downstream environmental conditions.</p> <p>For example, the strategy to increase the capacity of the Portage Diversion to provide additional flood protection to the Assiniboine River may not be possible without the proposed LMLSM outlet channels, otherwise the flooding in these lakes will be further exacerbated. The Lake Winnipeg Regulation (LWR) infrastructure in turn allows flood waters to be channeled more quickly into the lake from all southern</p>	<p>Include discussion of the operation of the Portage Diversion, Assiniboine River water control works, and LWR with sufficient detail for the reader to understand how the flood control infrastructure works together under various scenarios, and what is understood about the effects on identified VC’s as well as VC’s further identified through engagement with Pimicikamak and others.</p> <p>Identify the areas of uncertainty that make such an assessment challenging.</p>
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PIM - 40	PIM TAG reps	7.6.3. Cumulative effects assessment	Chapter 11.0 CUMULATIVE EFFECTS	<p>In the Guidelines, cumulative effects are defined as changes to the environment due to the project combined with the existence of other past, present, and <u>reasonably foreseeable</u> physical activities.</p> <p>Upgrades to the Portage Diversion as described in the 2016 KGS report appeared to be reasonably foreseeable. Recent maintenance and repair work and minor upgrades are described on the MI website. MI has stated at a recent TAG meeting that there are no plans for further upgrades.</p>	<p>Please explain the current status of planning regarding upgrades to the Portage Diversion.</p> <p>Is there any possibility that future upgrades may be done that could have an effect on the operation of the LMLSM outlet channels either in the context of direct or cumulative effects assessment?</p> <p>If formal plans are not yet on the table, explain what upgrades are desirable to create the most efficient flood control system according to the 2016 KGS studies.</p>
PIM - 41	PIM TAG reps	7.6.3. Cumulative effects assessment	Chapter 11.0 CUMULATIVE EFFECTS	<p>The Guidelines require that “<i>Effects of past activities (activities that have been carried out) will be used to contextualize the current state of the VC.</i>”</p> <p>The existing flood control infrastructure and land use decisions in the watershed have had acknowledged effects on water quality, wetlands and riparian habitats, wildlife, migratory birds, traditional land use.</p> <p>There is insufficient information and analysis provided in the EIS to understand this influence.</p>	<p>Discuss what is understood regarding the past and continued effects of all flood control works and land use practices affecting run-off in the broader watershed on the Interlake region.</p> <p>Clearly identify areas of uncertainty that may influence our understanding of the current state of each VC.</p>

PIM - 42	PIM TAG reps	7.6.3. Cumulative effects assessment	Chapter 11.0 CUMULATIVE EFFECTS	<p>The Guidelines ask that <i>“In assessing the cumulative effects on current use of lands and resources for traditional purposes, the assessment will focus on the cumulative effects on the relevant activity (e.g. hunting, fishing, trapping, plant harvesting).”</i></p> <p>There was no engagement process that allowed Pimicikamak to examine the proposed project, investigate and explain the extent to which hunting, fishing, trapping and plant harvesting in the region has been affected by major flood and hydroelectric infrastructure in this watershed and may or may not be further affected by the LMLSM channels. This information is therefore not included in the EIS.</p> <p>The context is that hunting, fishing, trapping, and plant harvesting have been degraded throughout the region due to the cumulative effects of industrial and urban development and increased human populations. Artificial manipulation of the waterways in addition to the terrestrial footprint of multiple flood control and hydroelectric works has had an extensive and significant influence on the current use of lands and resources for traditional purposes by all Indigenous groups in the region.</p>	<p>In order to meet the requirements of CEAA 2012, there must be a comprehensive research process developed with all of the Indigenous groups that have experienced cumulative effects of the flood control infrastructure that influences and would be influenced by the LMLSM outlet channels project.</p>
PIM - 43	PIM TAG reps	7.6.3. Cumulative effects assessment	Chapter 11.0 CUMULATIVE EFFECTS	<p>The Guidelines state that:</p> <p><i>“The proponent is encouraged to consult with key stakeholders and Indigenous groups prior to finalizing the choice of VCs and the appropriate boundaries to assess cumulative effects. This engagement should address, but not be limited to, concerns raised to date regarding cumulative effects that are associated with water management in Manitoba, for flood protection, hydroelectric, and other purposes, and the current and future regulation of flows through water control structures upstream and downstream of the Project.”</i></p> <p>Pimicikamak was not engaged in a process to establish the RAA or discuss final VC’s in any comprehensive way. Some basic information was shared, and a group meeting was held that did not proceed beyond an introductory level.</p>	<p>The proponent must engage Pimicikamak and all other potentially affected Indigenous Peoples in a meaningful process to discuss VC’s, cumulative effects boundaries, and all outstanding concerns related to water management in Manitoba, for flood protection and hydroelectric production.</p> <p>There must be transparent consultation on the current and future regulation of flows through water control structures upstream and downstream of the Project.</p>

PIM - 44	PIM TAG reps	7.6.3. Cumulative effects assessment	<p>The Guidelines ask the proponent to:</p> <p><i>“describe the mitigation measures that are technically and economically feasible. The proponent shall assess the effectiveness of the measures applied to mitigate the cumulative effects. In cases where measures exist that are <u>beyond the scope of the proponent’s responsibility</u> that could be effectively applied to mitigate these effects, the proponent will identify these effects and the parties that have the authority to act. In such cases, the EIS will summarize the discussions that took place with the other parties in order to implement the necessary measures over the long term.”</i></p> <p>The 2016 KGS study discusses the importance of combined approaches to flood control including adjusting land use practices for better flood attenuation. Such landscape level measures could influence the capacity needed for new flood control infrastructure and future operations.</p>	<p>Please explain the regulatory environment with regards to new and existing artificial drainage works that reduce floodplain retention in Manitoba and Saskatchewan.</p> <p>What is understood about trends in the rates of artificial drainage works in agricultural fields?</p> <p>Discuss measures that are being implemented to increase floodplain retention in southern Manitoba and Saskatchewan.</p>