Nation or Department	IR#	EIS Guideline Reference	EIS reference	EIS page #	Context and Rationale	Comment (The Proponent is Required to…)
Peguis First Nation	PFN 1.1	Part 1-2.3.Engagement with Indigenous Groups.	5.0 Public and Indigenous Engagement		The proponent will make reasonable efforts to integrate indigenous knowledge into the assessment of environmental effects. This was certainly not the case with Peguis. The EIS was scripted without reasonable efforts to include Peguis First Nation. The inclusion of Peguis First Nation views on the project may have changed the temporal and spatial boundaries, VECs and analyses used in the EIS.	Fully consult with Peguis and where it is necessary change the boundaries, VECs and analyses used in the EIS.
			Project Description			
Peguis First Nation	PFN 2.1	Part 2. 3.1. Project components The EIS will describe the project, by presenting the project components (as identified in Part 1, Section 3.1), associated and ancillary works, and other characteristics that will assist in understanding the environmental effects.	Fig. 3B.4 in Appendix 3B	3.4.2.1 p 3.7	According to Fig. 3B.4 in Appendix 3B the proposed inlet control on the LMOC will have a sill set at 246 m asl. The invert of the channel directly downstream of the sill will 242 m above sea level (m asl). This is roughly the average elevation of the bottom of the lake. Peguis is concerned with the vagueness of the design as no further details on the design of the inlet concept, elevations and materials are provided in the EIS. Peguis considers the lack of details on the design of the inlet concerning at this stage in the EIS, as it could be altered later to allow for year-round operation.	Provide more design details, drawings and specifications on the design of the inlet structure for the LMOC. And meaningfully consult with First Nations on the design of the inlet.
Peguis First Nation	PFN 2.2	Part 2. 3.1. Project components The EIS will describe the project, by presenting the project components (as identified in Part 1, Section 3.1), associated and ancillary works, and other characteristics that will assist in understanding the environmental effects.	Appendix 6J	3.4.2.1 p. 3.7	The proposed LMOC will have a bottom elevation 242 m above sea level (m asl) downstream of the inlet structure. The design of the inlet to the LMOC is not presented in the EIS. If the inlet allows for year round operation, Peguis is concerned that the proponent may change the Operating Rules (Appendix 6J) to year-round operation once the project is approved. The Operating Rules was developed by MI without consultation with First Nations	Determine whether the inlet structure allows for the Project to be used when floods are not happening. And meaningfully engage with all potentially impacted First Nations on the Operating Rules for the use of the Diversion Channels .
			Project Justification			
Peguis First Nation		Part 2-2.2. Alternative means of carrying out the project	2.4.1- Alternative Flood Protection Infrastructure Considered	p 2.14	" The Assiniboine River and Lake Manitoba Basins Flood Mitigation Study (the Study) (KGS Group 2016a)" was commissioned to identify and evaluate a wide variety of potential flood protection measures. Our concern is that the study of alternatives to the Project was not a fair assessment as the benefit cost analysis only considered the cost saved by flood mitigation options for each project. It did not consider the benefits arising from alternative projects that store water on the prairies. Accounting for these benefits would have changed the analysis.	Complete a thorough analysis of the alternative projects by including in the analysis the benefits that would accrue from use of water stored by the alternative projects for agriculture, recreational use and environment.
Peguis First Nation		Part 2-2.2. Alternative means of carrying out the project	2.4.1- Alternative Flood Protection Infrastructure Considered	p2.15	Options that were considered ranged from the construction of various Lake Manitoba and Lake St. Martin channels in various lengths, locations, and sizes, to dams on the Assiniboine River and increasing the capacity of the Assiniboine River channel, to a diversion from the Assiniboine River to the La Salle River. The alternatives did not consider the possibility of using the alternative projects in tandem and at smaller scales.	Re-evaluate the alternative projects when they are used in tandem or combination and at smaller scales. Also include in the analysis the benefits that would accrue from storage of water for agriculture, water supply and environment.

Peguis First Nation	Part 2-2.2. Alternative means of carrying out the project	2.4.1- Alternative Flood Protection Infrastructure Considered	p2.15	"A structure on Lake Winnipegosis that could hold back adequate water to reduce the peak water level in Lake Manitoba in a 2011 magnitude of flood could be constructed for a capital cost of approximately $58 million"(KGS 2016). "However, alternative options also included controls to outflows from Lake Winnipegosis, which contributes a large portion of the total inflows to Lake Manitoba (KGS 2016b). Many of the options for controlling outflows from Lake Winnipegosis would have been feasible, and effective, but would come at significant financial and environmental cost and were therefore dismissed (KGS 2016)." On what evidence was this statement based?	Provide the evidence that these statements were based on.
Peguis First Nation	Part 2-2.2. Alternative means of carrying out the project	2.4.1- Alternative Flood Protection Infrastructure Considered	p2.15	"Of the options evaluated, the construction of an additional Lake St Martin Channel and full use of the FRWCS was considered to be the most timely, effective, and economical option for lowering Lake Manitoba and Lake St. Martin at that time."	Complete a thorough analysis of "alternatives means to carry out the project", that includes comprehensive analyses of the environmental and social benefits and impacts of all viable options for flood mitigation including combining the projects at smaller scales.
		Assessment of effects on the Physical Environment and Biophysical Effects Assessment			
Peguis First Nation	Part 2-7.2.2. changes to water quality and quantity and sediment quality and quantity during all phases of the Project associated with project-related: excavation, blasting, and stock-piling of materials and waste rock;	3.4.2.1 and 6.4.4.3	p.6.157 and 6.160	"The LMOC will be excavated in the till overlaying the carbonate aquifer that is under high artesian pressure. The piezometric head can be up to 5 m above ground level. As till is under pressure, there is a risk that the water pressure will break through the till – termed "blowout". "The construction of the LSMOC will intersect with the carbonate aquifer in the region close to Lake Winnipeg (Appendix 6B, Figure 6.4B-6)."	Estimate how much groundwater will be intercepted by the excavation of both the LMOC and LSMOC channels during construction and during operation. Also estimate the amount of groundwater that will be discharged by the pressure release wells. Provide amounts in terms cubic metres per day and annually. Also determine what these amounts will be in 10, 20 50 and 100 years in the future.
	Part 2-7.2.2. 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;		p. 7.64	"Although potential effects on Buffalo Creek and the Big Buffalo Lake bog complex are uncertain, at most, reductions in groundwater inputs to Buffalo Creek and Creek C may have a small effect on the ability of these habitats to overwinter juvenile and forage fish. Such an effect is considered negative, long-term, low in magnitude, and restricted to the LAA."p.7.64. "Overall the potential effects to fish habitat as a result of the Project affecting groundwater will be adverse and occur through operation over the long term. The magnitude of the effect will be low during construction and diminish further during operation, but will occur during highly sensitive periods, be continuous, irreversible and could extend into the LAA. The habitats affected are currently undisturbed. "p.7.64. These statements are based on subjective judgements.	Estimate the extents and amounts of drawdown of the water table expected along LMOC and LSMOC during construction and operation. Use maps of the channels to show the expected extents and amounts. Investigate and quantify the effect of the drawdown on the bog and lake complexes found along the LMOC and LSMOC. As groundwater levels take time to adjust to added withdrawals from the aquifer, calculate what the effect on these levels will 10, 50 and 100 years after construction in the LAA and RAA.

Peguis First Nation	Part 2-7.2.2. 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;	6.4.4.1 and 6.4.4.2 Groundwater and Surface Water	p.6.149 to 6.167	Mi has provided information on the channels and surrounding wells and provided schematics that illustrate drawdown from pressure release wells based on transmissivities and other parameters in the carbonate aquifer below the project. The LMOC and LSMOC will intercept groundwater from the aquifer as well as the wells used to depressurize the aquifer during construction and operation. The amount of groundwater anticipated to be intercepted by the channels and wells is missing from the assessment. The annual water balance for the carbonate aquifer that underlies the project area needs to be understood to assess the changes that the channels may have on the dynamics of the aquifer over the near- and long-terms. However, modelling of the water balance of the carbonate aquifer, pre-project and post-project is missing from the assessment. The annual amounts of recharge, groundwater outflow, change in storage, sustainable yield are required to assess effects of the project. The amounts and effects of the withdrawals of water from the aquifer caused by the diversion channels on the water balance of the aquifer require modelling before an accurate assessment of effects of the channels on this valuable resource can be made.	Develop an annual water balance model of the carbonate aquifer that estimates the amount of recharge, amount of groundwater outflow, change in storage and sustainable yield for the pre-project condition. The LMOC and LSMOC will intercept groundwater from the aquifer and so will the wells used to depressurize the aquifer during construction and operation. Determine the amounts and effects of these withdrawals on the annual water balance of the aquifer. Because aquifers take a long time to react to changes in withdrawals, develop the annual water balance model so that it can simulate the present condition of the aquifer and its condition immediately post-project and 10, 50, and 100 years into the future. Also, separate project effects from climate change effects for the 10, 20, 50, and 100 year water balance scenarios.
Peguis First Nation	Part 2-7.2.2. 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;	6.4.4.1 and 6.4.4.2 Groundwater and Surface Water	p.6.149 to 6.167	Peguis is concerned that the impact of the dewatering of the aquifer could affect water levels in surrounding lakes and wetlands which will have an impact on fishing, hunting, trapping, medicinal plants and First Nation rights.	Estimate the annual amount of water that will be dewatered from the aquifer by the Project Provide the effect of the dewatering on water levels and flow patterns in the water bodies and courses within the RAA. Provide this assessment by using an annual water balance model for pre-project and predicted post-project conditions 10 ,50 and 100 years into the future.
Peguis First Nation	Part 2-7.2.2. 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;	6.4.5.2 Surface Water Overview	p.6.168	EIS is missing a description of how currents presently move flood waters from the Assiniboine River by the Portage Diversion through Lake Manitoba and Lake St. Martin and into Lake Winnipeg and how these currents will change post-Project. No models are applied in the assessment to provide insight into how these currents move through the system.	Use a 3-dimensional model to show how the currents move through Lake Manitoba, Lake St. Martin and Lake Winnipeg before the Project and after the Project.
Peguis First Nation	Part 2-7.2.2. 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;	6.4.5.2 Surface Water Overview	p.6.169	There is a difference in the water quality between the North and South basins of Lake Manitoba. When the Portage Diversion is not in operation, the mix of waters entering the Fairford River is predominantly water from the North Basin of the Lake Manitoba. However, the operation of the Portage Diversion will alter the mix of water arriving from the North and South Basins of Lake Manitoba. The determination of this difference in the mix is important to understand the effects of the Project on future sediment flux and water quality in Lake St. Martin and Lake Winnipeg. The ranges in water quality levels presented in Table6.4-9 do not adequately reflect this change in the mix of these different streams.	Modify Table 6.4-9 to differentiate between water quality conditions entering Lake St. Martin and Lake Winnipeg between times when the Portage Diversion is in operation and those when it is not.
Peguis First Nation	Part 2-7.2.2. 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;	6.4.5.2 Surface Water Overview	p.6.169	Table 6.4-9 provides an overview of existing conditions for surface water quality in the RAA waterways. In the water quality section of the EIS, mass loading is not discussed . Concentrations do not tell the complete story, especially where flood waters are involved. Mass loadings are another way of looking at effects of nutrient delivery to the lakes in the system.	Calculate the mass loadings for parameters in Table 6.4-9 for the flood waters entering Lake St. Martin and Lake Winnipeg currently and loadings expected after the project is in place.

Peguis First Nation	Part 2-7.2.2. 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;	6..4.5.2 Surface Water Overview	p. 6.170	Appendix 6D provides a general description of the existing conditions for surface water hydrology and surface water quality for the watercourses and waterbodies that may be affected in the RAA, including information on hydraulic and sediment transport studies and ice processes. Table 6.4-9 provides an overview of existing conditions for surface water quality in the RAA waterways.	Use trend analysis to portray current water quality trends for the parameters and water bodies and courses listed in Table 6.4-9.
Peguis First Nation	Part 2-7.2.2. 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;	6.4.4.1 and 6.4.5.2. Groundwater and Surface Water	EIS p.6.177 and Appendix 6K	"Manitoba Infrastructure's Hydrologic Operations group uses water balance models to evaluate the impact of water control structure operations on the Lake Manitoba to Lake Winnipeg drainage system. Water balance models use inflow, precipitation, evaporation data, and stage storage curves to calculate changes in lake level, and rating curves to determine lake outflow". EIS p.177. The annual water balance statistics and averages for the above parameters are not given in the EIS. These statistics are crucial to the understanding of project effects on Lake St. Martin.	Provide schematics and tables that clearly show the parameters in the water balance model averaged over each year of record and over the decadal periods pre-project. These are all the parameters that went into derivation of the water balance model, including inflow, outflow, precipitation, evaporation, groundwater flux, for the pre-project timeframe.
Peguis First Nation	Part 2-7.2.2. 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;	6.4.4.1 and 6.4.5.2. and 6.4.6.Project interactions with surface water	EIS p.6.177 and Appendix 6K	Manitoba Infrastructure's Hydrologic Operations group uses water balance models to evaluate the impact of water control structure operations on the Lake Manitoba to Lake Winnipeg drainage system. Water balance models use inflow, precipitation, evaporation data, and stage storage curves to calculate changes in lake level, and rating curves to determine lake outflow...EIS p.177. The water balance was used to model the effects of the project on the past. It predicted the effects of the project on flows and water levels in Lake St. Martin if the project had been in operation from 1915 to the 2018. Unfortunately ,the water balance model has not been used to model the operation of the project	Expand on the analysis to develop an annual water balance model for Lake Manitoba and Lake St. Martin that can be used to determine future changes to annual average inflow, outflow, evaporation and groundwater flux caused by the operation of the channels. The model must use climate change predictions for the prairies to assess near- and far-future effects of the channels on Lake Manitoba and Lake St. Martin.
Peguis First Nation	Part 2-7.2.2. 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;	6.4.7.3 Changes in Regional Fluvial Geomorphology. 6.4.10.2 Surface Water. Appendix 6D.2	p. 6.191 p.6.208. p.6.215. p.6D.8 p7.32.	"Discharge into Lake St. Martin near Birch Bay from the LMOC and discharge into Sturgeon Bay near Willow Point from the LSMOC may alter the lake bed in these outlet areas during periods when outflows are high enough to cause scouring and movement of lake bed sediments or other substrates (e.g., sand, gravel, rock). "EIS p. 6.191. E.g. "Operation of the EOC between 2011 and 2015 introduced large volumes of suspended sediment into Sturgeon Bay. While repeated sampling between 2011 and 2015 showed that the distribution of major substrate classes over most of Sturgeon Bay did not substantially change, particle size analyses indicated that the silt component increased throughout the bay due to operation of the EOC (NSC 2016b). In particular, substrate composition near the Dauphin River outlet underwent the largest changes since operation of the EOC in 2011 (NSC 2016b). Between 2011 and 2013, fine clay and silt were deposited over much of the coarser substrate that occurred north of the river mouth. However, gravel, cobble, and boulders persisted northeast of the river mouth, albeit with a higher proportion of gravel. Substrate conditions near the river mouth have remained relatively consistent since 2013 (NSC 2016b)." p.7.32. The prediction on changes in geomorphology and shorelines, sediment transport, debris and water quality are dependent upon understanding the changes in flows patterns occurring in the receiving environment. This understanding is usually gained from modelling the discharge plumes and their effect on the receiving environment. Therefore, for the proponent to state that "Confidence in the change in flows and levels is high and, therefore, the confidence in direction of the effects on fluvial geomorphology and shoreline geomorphology, sediment transport,	Augment the analysis by modelling the LSMOC outflow to sufficiently demonstrate the potential hydrodynamics, sediment transport and morphological evolution of the bed sediments in Sturgeon Bay and Lake Winnipeg. The proponent is advised to use "state of the art" modelling software, e.g. MIKE 3 FM, to model the discharge effects on the bed of the lake. The proponent is required to provide figures and tables that show the currents, extents of erosion, transport and deposition of sediments that will occur in Sturgeon Bay and Lake Winnipeg after the project is in operation and compare the changes to pre-project condition. Also provide estimates on the effect on erosion, transport, sedimentation and water quality after a series of flood events, e.g. 5 flood events, 10 floods, 20 floods, 50 flood events have occurred. And follow-up this analysis by applying it to the assessment of the richness of the benthos, fish, their distribution and habitats and effects on the fishery.

Peguis First Nation	Part 2-7.2.2. 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;	6.4.7.3 Changes in Regional Fluvial Geomorphology. 6.4.10.2 Surface Water. Appendix 6D.2	p. 6.191 p.6.208. p.6.215. p.6D.8 p7.32.	"Discharges into Lake St. Martin near Birch Bay from the LMOC and discharge into Sturgeon Bay near Willow Point are high enough to cause scouring and movement of lake bed sediments or other substrates (e.g., sand, gravel, rock)." EIS p. 6.191. The prediction on changes in fluvial geomorphology and shoreline geomorphology, sediment transport, debris and water quality are dependent upon understanding the changes in flows patterns occurring in the receiving environment. This understanding is usually gained from modelling the discharge plume and its effect on the receiving environment. Therefore, for the proponent to state that "Confidence in the change in flows and levels is high and, therefore, the confidence in direction of the effects on fluvial geomorphology and shoreline geomorphology, sediment transport, debris and water quality is high. " EIS p 6.215 without the aid of modelling results is questionable as we find little evidence presented in the EIS to support this statement. There is no modelling of the outflow plumes from LMOC and the Fairford River into Lake St. Martin to substantiate this claim. These plumes may scour and mobilize large amounts of rich sediments that have been building on the bottom over the centuries or mantle the area with fine sediments that will blanket the benthos and change the make-up of the bed of the bay irreparably. This could have impacts on the richness of the benthos and fishery. The interaction of the plumes may also contribute to additional scour and mobilization of sediment or mantling of the bed of the lake by deposition of fine sediments. The dynamics of the outflows and plumes have not been sufficiently characterized by modelling in the EIS to understand their effects on the receiving environment.	Augment the analysis by modelling the LMOC outflow to sufficiently demonstrate the potential hydrodynamics, sediment transport and morphological evolution of the bed sediments in Watchorn Bay and Lake St Martin.. The proponent is advised to use "state of the art" modelling software, e.g. MIKE 3 FM, to model the discharge effects on the bed and lake. The proponent is required to provide figures and tables that show the currents, extents of erosion, transport and deposition of sediments that will occur in Lake St Martin after the project is in operation and compare to pre-project condition. Also provide estimates on the effect on erosion, transport and sedimentation after a series of flood events, e.g. 5 flood events, 10 floods, 20 floods, 50 flood events have occurred. And follow-up this analysis by applying it to the assessment of the richness of the benthos, fish, their distribution and habitats and effects on the fishery.
Peguis First Nation	Part 2-7.2.2. 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;	Table 7.2-7 Measures to Avoid or Mitigate Potential Change in Fish Passage		This concern was raised through the engagement process; specifically, how changes in Dauphin River flows would affect lake whitefish movements and spawning. Substantial migrations of lake whitefish from Lake Winnipeg are known to move upstream through Dauphin River in fall to spawn in Lake St. Martin. Therefore, because the downstream-most drop structure (closest to Lake Winnipeg) in the LSMOC will not allow upstream movement of fish, lake whitefish may become attracted to flowing water that they will not be able to ascend. This could delay or prevent these fish from spawning if they do not move out of the LSMOC outflow to find and ascend the Dauphin River. Similar effects could happen to spring spawning species such as walleye, suckers, and northern pike, all species known to migrate up the Dauphin River in spring. Peguis commercial fishers observed that plumes from the EOC affected the commercial fishery in Lake Winnipeg.	Assess the effects of the plumes from the LMOC and LSMOC on the movement of fish and commercial fishery in Lake St. Martin and Lake Winnipeg. Will the outflows from the channels become a major attraction to fish and will they disrupt the traditional movement of fish during the commercial seasons.
Peguis First Nation	Part 2-7.2.2. 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;	6.4.7.7 Changes in Regional and/or Local Surface Water Quality	p.6.208	"The changes in regional flows due to the operation of the Project will alter the timing of how water is passed through the existing system by diverting high flows from the Fairford and Dauphin rivers to the LMOC and LSMOC. The addition of the outlet channels alters the route for the passage of high flows from Lake Manitoba to Sturgeon Bay but does not change the overall composition or volume of water entering or leaving the system. That is, all flows from the Lake Manitoba basin will enter Sturgeon Bay, with or without the Project"(EIS p.6.208). This change in timing will effect residence time in the system. Residence time will effect settlement rates for sediments and biochemical reaction times which in turn affect sediment transport and water quality.	Determine the difference in hydrology, sediment and water quality conditions in Sturgeon Bay pre-project and post project that will result from the change in timing. That is the effect of changes in residence time on the sediment and water quality of water entering Sturgeon Bay.

Peguis First Nation	Part 2-7.2.2. 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;	6.4.7.3. Changes in Regional and/or Local Fluvial Geomorphology and Shoreline	p.6.191	"A reduction in lake levels in Lake Manitoba and Lake St. Martin due to the operation of the outlet channels will reduce the amount of shoreline area inundated during high flows, which may alter the amount of exposed shoreline in the area. This change could alter existing wind, wave and ice action in some localized shoreline areas, but is not expected to change shoreline geomorphology."p.6.191. Shorelines, beaches are usually composed of a succession of different sizes of sediment depending on the energy of the near shore area and beach. These sediments usually get finer as distance from the shore increases. What effect will the drop in the range of water levels experienced in the lake have on erosion and transport of beach sediments. The overall drop in water levels caused by the project could expose finer sediments to beach erosion, and transport forces that may increase the turbidity along the shoreline and into the lake. This dynamic is not discussed or assessed in the EIS.	The proponent is required to assess the effect a drop in the range of water levels that will be experienced in Lake St. Martin post-project will have on the shoreline and littoral zone in Lake St. Martin.
		Cumulative effects			
Peguis First Nation	Part 2-7.2.2. 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;		p.11.24	"The Project is not expected to affect regional groundwater flows, levels and quality and surface water." p.11.24. Because this conclusion was made without the aid of carbonate aquifer water balance model and relies on conjecture based on piezometric heads and water quality data inferred from pre project wells, it is impossible to assess the accuracy of this conclusion.	Compare annual water balances for the carbonate aquifer for the pre-Project and post-Project, near and far future conditions, to substantiate this statement.
Peguis First Nation	Part 2-7.2.2. 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;	11.4.2.1 Identification of Projects Likely to Interact Cumulatively on Surface Water	p. 4.16 and p.11.27	"The temporal boundaries for the assessment are based on the timing and duration of Project activities and the nature of the interactions with each VC. The purpose of a temporal boundary is to identify when an environmental effect may occur in relation to specific Project phases and activities. Temporal boundaries for the Project include the construction phase (estimated as five years) and the operations and maintenance phase, which has no duration to it as the Project is expected to operate in perpetuity and is not expected to be decommissioned." The effects of multiple floods over the next 10, 20, 50, 100 and 200 years on erosion, bed sediments, shorelines, water quality in Lake St. Martin, Lake Winnipeg have not been assessed in the EIS or CEA. The emphasis has been on the effect of a single flood event and not multiple effects over the life of the project. This leaves a gap in the completeness of the EIS and cumulative effects assessment.	Assess the effects of multiple flood events over the next 100 years on the fluvial geomorphology and water quality on Lake St. Martin and Lake Winnipeg.

Peguis First Nation	7.6.3 identify the sources of potential cumulative effects. Specify other projects or activities that have been or that are likely to be carried out 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. Water management systems and natural and/or controlled flood events, including flooding that occurred in the Interlake's Region in 2011, should be considered as projects or activities that are sources of potential cumulative effects. This assessment may consider the results of any	The other projects or physical activities identified for consideration in the cumulative environmental effects assessment for this EIA are listed in Table 11.1-1, referred to as a Project Inclusion List (PIL). Future projects and physical activities were identified from publicly available information and are "certain, planned, or reasonably foreseeable" as per CEAA guidelines. All reasonably foreseeable flood mitigation and water management projects and hydroelectric projects have also been identified in Table 11.1-1 and identified in Figure 11.1-1.	p.11.5	11.1.2.2 Project Inclusion List. In Sections 11.2 through 11.12, each VC includes a table entitled "Interactions with the Potential to Contribute to Cumulative Effects". This table identifies which past, present and future projects effects may interact with the same effects (for the same VC) for the Project. e.g. The cumulative effects assessment for Surface Water is limited to local activities listed in Table 11.4.3. The CEA ignores the effects of the Portage Diversion Project and Lake Winnipeg Regulation. These large projects and their effects must be assessed with the effects of the diversion project. The lack of connection between the projects suggests that the incremental, cumulative effects of development will be missed.	Incorporate into the cumulative affects analysis the effects of the Portage Diversion and Lake Winnipeg Regulation on the Surface Water Environment, Fish and Fish Habitat, Vegetation and Wetlands and other VECs.
Peguis First Nation	7.6.3 identify the sources of potential cumulative effects. Specify other projects or activities that have been or that are likely to be carried out 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. Water management systems and natural and/or controlled flood events, including flooding that occurred in the Interlake's Region in 2011, should be considered as projects or activities that are sources of potential cumulative effects. This assessment may consider the results of any	Table 11.1-1 presents the Project and physical activities inclusion list, which identifies other projects and physical activities that might act cumulatively with the Project. Where residual surface water effects from the Project act cumulatively with those from other projects and physical activities (Table 11.4-3), a cumulative effects assessment is undertaken to determine their significance.	p.11.5	Many of the baseline assessments of past and current conditions are not carried forward with any analytical rigor to support a meaningful analysis of future cumulative effects. A critical components of a Cumulative Effects Assessment is not applied in the EIS, specifically trends analysis, to properly assess the cumulative effects of this project combined with the Portage Diversion and Lake Winnipeg Regulation.	Use trend analysis to portray the current trends in hydrology and water quality of Lake Manitoba, Lake St. Martin and Lake Winnipeg. Differentiate between conditions that existed pre-Portage Diversion and post-Portage Diversion on the hydrology and water quality in Lake Manitoba, Lake St Martin and Lake Winnipeg. Then add the Project in and determine trends in hydrology and water quality for the Project and Portage Diversion in the near and far future.

Peguis First Nation	3.2. Factors to be considered			The Access Road was excluded from the EIS. The access road used to be a fire break that was converted to an access trail for the EOC. During the last couple of years the trail has been built into a major roadway. We are not in agreement with the road being excluded from the EIS. It seems that the exclusion was based on number of kilometres was done on number of kilometres to be This road has now in the last couple of years opened up traditional land entitlement and use area to easy access by hunters and other recreational users changing the nature of the land and animals found here. We are appalled that we were not consulted on the access road and now even more concerned that the access road is excluded from the EIS. A decision made without consultation. We would like to see the scope of the EIS change so that it includes the roadway.	Include the assessment of the Access Road in the EIS.
		Human Health			
Peguis First Nation	7.1.12. Human environment - Health and socio-economic conditions, including the functioning and health of the socio-economic environment, encompassing a broad range of matters that affect communities in the study area in a way that recognizes interrelationships, system functions and vulnerabilities;	Table 9.5-1 Potential Effects, Effect Pathways and Measurable Parameters for Human Health		Human health must consider the presence of blue-green algae in Lake St. Martin and Lake Winnipeg. It is apparent that phosphorus concentrations are increasing in Lake Manitoba. Phosphate attaches to small clay particles in the wash load of the Assiniboine River during floods. Once the Portage Diversion is in use this phosphorus rich flood water can be expected to wash through Lake Manitoba, Lake St. Martin via the channels and on to Lake Winnipeg. This supply of phosphorus encourages the growth of algae. Blue-green algae which can fix nitrogen from the air is also on the increase in Lake Winnipeg and many of these blue-green algae release toxins. This pathway needs to be thoroughly assessed by the Human Health component of the EIS.	Fully assess nutrient loading and supply from Lake Manitoba to Lake Winnipeg. This analysis must include the effects of nutrients on algae, especially blue-green algae and their toxins and their effects on Human and animal Health.
Peguis First Nation	7.6.2 Effects of the environment on the Project	15.5.2 Effects Analysis and Mitigation	p.7.22 p.15.12	The environmental impact assessment, hydrologic engineering analysis, planning, design and operation of hydraulic structures accounts for possible future effects of climatic variability and change. P. 15.12. • The EIS does not account for the effects of climate change on the Project or Project effects on the environment. Manitoba Hydro (2020) in their Climate Change Report predict that the amount of precipitation falling as rain will increase over the next 30 years and the amount falling as snow will decrease. Therefore, will nutrient supply to Lake Winnipeg increase as runoff increases because more precipitation will fall as rain than snow? How will this affect algae in the lake? These type of questions require answers in the EIS.	Under predicted Climate Change scenarios, assess whether nutrient supply to Lake Winnipeg will change in the next 30 years and the effect of the Project on this dynamic.