



Prairie and Northern Region Région des Prairies et du Nord
Suite 1145, 9700 Jasper Avenue Pièce 1145, 9700 rue Jasper
Edmonton, Alberta T5J 4C3 Edmonton (Alberta) T5J 4C3

Registry File #: 80094

July 14, 2016

Ms. Leanne Shewchuk
Manager, Special Projects and Environmental Services
Manitoba East Side Road Authority
200-155 Carleton Street
Winnipeg MB R3C 3H8

Dear Ms. Shewchuk:

The Canadian Environmental Assessment Agency (the Agency) and federal authorities have conducted a technical review of the Environmental Impact Statement (EIS) for Project 4 – All-season Road Connecting Berens River and Poplar River First Nation (the Project), received from Manitoba East Side Road Authority on May 9, 2016. The federal authorities participating in the review are Environment and Climate Change Canada, Fisheries and Oceans Canada, Health Canada, Indigenous and Northern Affairs Canada, and Transport Canada.

The EIS Guidelines issued on March 10, 2015, describe the information required to support the assessment of effects described in the *Canadian Environmental Assessment Act, 2012* (CEAA 2012) and section 79 of the *Species at Risk Act*, and for Canada to fulfil its Crown consultation obligations to the extent possible during the environmental assessment (EA).

While the EIS Guidelines subject areas are covered in the EIS, the Agency and federal authorities have identified gaps in the information provided. This information is necessary to determine whether the Project is likely to cause significant adverse environmental effects and to inform the Agency's preparation of the EA report under CEAA 2012.

Please find attached a table of Information Requests (IRs) with context for the requested information. Comments received from Indigenous groups were taken into account by the Agency in developing these IRs. A table of Federal Authority Advice to the Proponent is also included, for your information.

In accordance with CEAA 2012, time taken by Manitoba East Side Road Authority to provide the requested information is not included in the legal timeframe within which the Minister of the Environment must make her EA decision. Although issuance of these IRs pauses the timeline at day 113 of 365, the Agency and federal authorities will continue to work on the Project EA, with a focus on Aboriginal consultation and technical working group meetings to improve the Agency's understanding of the environmental effects of the Project.

Upon request, the Agency would be happy to arrange a meeting to discuss and answer questions regarding the IRs and to understand and resolve issues as required. If you have any questions regarding this letter, please contact the Agency.

Sincerely,
<Original signed by>

Janet Scott
Project Manager, Prairie and Northern Region

Enclosures: 1. Project 4 EIS – Information Requests /
2. Project 4 EIS – Advice to the Proponent from Federal Authorities
3. Supporting document related to Health Canada's advice to the proponent

cc: Nicole Deschenes, Environment and Climate Change Canada
Tara Schweitzer, Fisheries and Oceans Canada
Graham Irvine, Health Canada
Angela Bidinosti, Indigenous and Northern Affairs Canada
Jackie Barker, Transport Canada



Federal Environmental Assessment of Project 4 – All-Season Road Connecting Berens River to Poplar River First Nation

Information Requests – Round #1

IR Number (e.g. HC-IR-01)	Project Effects Link to CEAA 2012	Reference to EIS Guidelines	Reference to EIS	Context and Rationale	Specific Question / Request for Information
Project Description					
CEAA-01		EIS Guidelines, Part 1, Section 3.1	Chapter 4	<p>The EIS should include a consolidated summary of all changes that have been made to the Project since originally proposed, including the benefits of these changes to the environment, Aboriginal peoples, and the public. The EIS should document any additional issues and concerns raised by Indigenous groups in relation to the environmental effects assessment and the potential adverse impacts of the project on potential or established rights.</p> <p>The EIS (Chapter 4, p. 4-38) states “The APEP will continue throughout the development of the Project, and will provide updated information and opportunities for all interested parties to continue commenting on the Project. Comments and input received will be reviewed to assess whether the information alters the effects assessment and/or warrants modifications to proposed mitigation measures”. Project changes are described throughout the EIS document but a consolidated summary is absent.</p>	<p>A. Provide a consolidated summary of proponent changes to the project, including proponent’s responses to the issues identified in the proponent’s on-going engagement activities with Indigenous groups (e.g. Poplar River First Nation, Berens River First Nation, Manitoba Metis Federation) such as concerns related to project component siting, heritage and cultural sites, habitat compensation plans such as a fisheries offsetting plan, and any other issues raised in comments provided to the proponent by Indigenous groups.</p> <p>B. Update descriptions of project potential effects and proposed mitigations as a result of any changes. Re-assess residual effects to project valued components and update conclusions presented in the EIS.</p>
CEAA-02		EIS Guidelines, Part 2, Section 1.1	EIS Summary, Chapter 1. Introduction and Overview	<p>The proponent information in the EIS should identify the legal entity that would develop, manage, and operate the project as well as specify the mechanism used to ensure that corporate policies will be implemented and respected for the project. Manitoba issued a press release in May 2016 noting that ESRA is dissolved and its mandate is repatriated into Manitoba Infrastructure. The EIS references ESRA as the proponent throughout the document and in Environmental Protection Procedures describing mitigation commitments.</p>	<p>A. The Agency requests formal notification of the proponent name change for Project 4, updates to the EIS to reflect any changes to corporate policies resulting from this change and any updated contact information for the proponent.</p>
CEAA-03	19(1)(g) – alternative means and environmental effects of alternative means	EIS Guidelines, Part 2, Section 2.2	Chapter 2, Project Justification and Alternatives Considered	<p>The EIS describes alternative means for the project as a whole (EIS, Chapter 2, Project Justification and Alternatives Considered) but does not evaluate environmental effects associated with the alternative means for project components, including alternative siting and locations for potential quarry and borrow areas, and temporary construction camps and staging areas. Instead, the EIS states “potential quarry and borrow areas will be selected using a variety of factors...” (p. 2-9), and that</p>	<p>A. Potential quarry locations are noted in Appendix 3-3, Figure 3-3, where “distance to waterbody” is indicated. Describe whether any of the alternatives have been eliminated and provide the rationale for this. Characterize for each remaining potential quarry location:</p> <ul style="list-style-type: none"> i. proximity to fish-habitat; ii. proximity to wetlands; iii. terrestrial habitat loss (area) by vegetation cover type;

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			Chapter 5, Appendices, Environmental Protection Procedures	temporary camps and staging areas “...will be selected for the construction of the proposed road and crossings based on consideration of factors...” (p. 2-9).	<ul style="list-style-type: none"> iv. proximity to human health receptors, e.g. traplines, residences, camps, First Nations reserve lands; v. proximity to sites of cultural and heritage value; and vi. potential impact to rights, proposed accommodate measures, and views of groups listed Section 5 of Part 1 of the EIS guidelines on proposed accommodations. <p>B. For proposed quarries (290 ha), temporary staging areas (57 ha), and construction camps (64 ha), describe the environmental effects to be considered as factors in site selection and the ranking process to be used in selecting preferred sites. List and describe the environmental protection measures that will be applied to quarries, temporary staging area and construction camps. Describe how potential sites will be confirmed to meet these protection criteria.</p> <p>C. Appendix 5-3 describes the mitigation measures contained within the Environmental Protection Procedures for Quarry Site Selection (EP un-numbered) and for Site Selection - Temporary Works (EP21), which includes a table entitled Selection Criteria for Temporary Construction Sites.</p> <ul style="list-style-type: none"> i. Describe how the contractor will be asked to confirm endangered species habitat as outlined in the Selection Criteria for Temporary Construction Sites directive “Avoid habitat occupied by endangered species”. This commitment is also noted in the Appendix 5-4 Environmental Protection Specifications, GR130.19 Wildlife. ii. As is provided in the Selection Criteria for Temporary Construction Sites for caribou, include avoidance mitigation measures (e.g., timing of activities) for bird species at risk, aquatic species at risk, and wildlife species at risk that are listed in Appendix 9-7. iii. Describe minimum distances for the buffer zones of undisturbed vegetation from watercourses or waterbodies that will be accepted for Selection Criteria for Temporary Construction Sites given that “Construction activities shall not occur within 100 m of a watercourse (GR130.15.1.2). Where a 100 m distance is not possible, a buffer zone of undisturbed vegetation between the construction activities and the watercourse shall be established.” Provide examples of expected scenarios where approval by the Contract Administrator and ESRA would be given for construction within the 100m set-back distances.

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CEAA-04/ INAC-01	5(1)(b) – a change that may be caused to the environment that would occur on federal lands 5(2)	EIS Guidelines, Part 2, Section 6.3.5, Trans-boundary Environment EIS Guidelines, Part 2, Section 6.3.6, Other valued components that may be affected as a result of a federal decision	Chapter 3, p.3-28, EIS Summary p.10.	<p>The EIS should describe changes that may be caused to the environment that would occur on federal lands, not limited to changes to ambient air quality and changes to interprovincial wildlife.</p> <p>The EIS (Chapter 3, p.3-28) indicates that project components with undefined locations (quarries, camps, access roads) may be sited on Federal Reserve Lands. The EIS (Section 3.9, page 3-30) also describes that waste will be transported to and disposed of at the nearest approved landfill and provides as examples reserve lands (e.g. Berens River or Poplar River First Nations facilities).</p> <p>Poplar River First Nation and Berens River First Nation communities are the closest communities to the proposed road and contractors (including sub-contractors) would be expected to select locations for liquid and solid waste disposal, fuel and materials storage, and construction of any provincial highway operations or maintenance yards near the Project and in or near these communities.</p> <p>If project components are to be located on Federal Reserve Lands, permits would be required under s.58(4) of the <i>Indian Act</i> and if federal reserve lands are to be included in the Project Footprint, other valued components need to be considered with respect to environmental receptors on those federal lands (EIS Guidelines, Part 2, Section 6.3.6).</p>	<p>A. Describe all project components and activities that will be located on Federal Reserve Lands during project construction and operation phases. Consider potential contractor selection of Federal Reserve Lands. Indicate where any highway operation and maintenance yards will be established as part of this Project.</p> <p>B. For all project components that will be located on federal reserve lands, describe potential environmental effects, proposed mitigation measures, and anticipated residual effects.</p> <p>C. Explain whether disposal on reserve land of domestic solid waste generated by construction and operation activities will require approval and/or permitting by the First Nations and Indigenous and Northern Affairs Canada. If wastes will be disposed of on federal reserve lands, provide an estimate of waste generated by the project including wastes that will be generated by construction activities (8 year period) and by on-going operation and maintenance of the project over its anticipated operating lifespan (>50 years).</p> <p>D. If on-reserve components or project activities are identified:</p> <ul style="list-style-type: none"> i. Confirm with the First Nation(s) and INAC the compatibility with community land use plans, whether s.58(4) <i>Indian Act</i> permits are required, and requirements of all other applicable permits such as the <i>Canadian Environmental Protection Act, 1999</i> (CEPA 1999) (Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations), and <i>Indian Act</i> (Indian Mining Regulations, Indian Timber Harvesting Regulations and Indian Reserve Waste Disposal Regulations). Update the list of regulatory requirements and Chapter 15 tables of mitigation commitments in the EIS accordingly. ii. Describe potential environmental effects, propose mitigation measures, and assess residual adverse environmental effects associated with the on-reserve components and activities. Environmental Protection Procedures and Specifications (General Requirements 130) described in Chapter 5 for the off-reserve components, should be applied to any on-reserve components including requirements for contractors and subcontractors and commitments to monitoring. iii. Assess potential impacts to rights anticipated from on-reserve project components. Propose accommodation measures and describe views of the Indigenous group on proposed accommodations.

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CEAA-05	5(1)	EIS Guidelines, Part 1, Section 3.1; Part 2, Section 1.2	Chapter 3, Section 3.3 and 3.11	<p>The EIS includes numerous references to timing of construction and operation activities as planned mitigation measures that would result in negligible residual environmental effects (e.g. EIS section 3.2.3, page 3-3: “Right-of-way clearing will be conducted in similar segments with clearing being completed during the winter months to minimize potential adverse environmental effects”; EIS section 3.4.2., page 3-20: “To the extent possible, the timing of blasting activities will consider area-specific environmental sensitivities”; Appendix 8-1, page 50: “placement and removal of temporary crossing structures will be timed to avoid high fish migration periods”; Appendix 8-1, Table 7).</p> <p>The EIS also provides a general schedule of project activities in Table 3.9 which states that construction of the all-season road between Berens River First Nation and Poplar River First Nation is scheduled to begin in November 2016 (EIS, section 3.11, page 3-31). Section 6 of the <i>Canadian Environmental Assessment Act, 2012</i> (CEAA 2012) prohibits proponents from undertaking any act or thing in connection with the carrying out of a designated project, in whole or in part, if that act or thing may cause an environmental effect unless the Agency has determined that no environmental assessment is required or the proponent is complying with the conditions included in the decision statement issued to the proponent with respect to that project.</p>	<p>A. Confirm that construction activities will not proceed until a decision statement has been issued under CEAA 2012.</p> <p>B. Update the construction timeline to describe the project activities (Table X) by:</p> <ul style="list-style-type: none"> • time of year, • frequency, and • duration (e.g., 2 months in Year 1, 24 hours per day). <p>If there are changes to the timing of activities indicate whether there would be additional effects to the environment under section 5 of CEAA 2012 and if necessary, what mitigation measures would be implemented to address these effects.</p> <p>C. As the Project is proposed to be constructed in approximately 10 segments beginning from both Berens River First Nation and Poplar River First Nation (EIS, page 3-3), and as segments will be constructed and right of way cleared sequentially and prior to the construction of the four proposed bridges, describe the construction project activities through the seasonal round for the construction period (estimated 8 years). Review residual effects and proponent conclusions on effects levels, noting any additional residual effects presented by spatial and temporal overlaps of project activities and any resulting changes to conclusions on residual effects levels. This information should also inform a response to CEAA-22.</p> <p>D. As the Project is proposed to operate indefinitely (>50 years), update the operation timeline to describe project activities by:</p> <ul style="list-style-type: none"> • time of year, • frequency, and • duration (e.g., 2 months in Year 1, 24 hours per day). <p>If there are changes to the timing of activities indicate whether there would be additional effects to the environment under section 5 of CEAA 2012 and if necessary what mitigation measures would be implemented to address these effects.</p> <p>E. For typical operations and considering the maintenance lifecycle anticipated, describe operation phase project activities (e.g., mowing and herbicide application, winter snow clearing and traction material application, bridge cleaning, dust control measures, quarry operation and blasting) through the seasonal round for the operation period (estimated >50 years). Review residual effects and proponent conclusions on effects levels, noting any additional residual effects presented by spatial and temporal overlaps of project activities and</p>

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					<p>any resulting changes to conclusions on residual effects levels. This information should also inform a response to CEAA-22.</p> <p>F. Define and consistently apply terms (e.g. late spring, winter) when used instead of names of months or dates to describe timing avoidance mitigation measures throughout the EIS. Provide a summary table that correlates the planned timing (i.e. time of year, frequency, and duration) of construction activities listed in Table 3.4 (EIS, page 3-12) with the avoidance of seasonal periods of higher potential for effect on fish, birds, wildlife and current use activities (e.g. hunting, trapping, fishing, gathering) which are identified throughout the EIS and Environmental Protection Procedures.</p>
Effect Assessment -Methodology					
CEAA-06	5(1)	EIS Guidelines, Part 1, Section 4.2	Chapter 6, Environmental Impact Assessment Scope and Approach Chapters 7, 8, 9, 10, 11, 12, 13	Table 6.3 in Chapter 6 of the EIS includes a description of assessment criteria and levels of potential environmental effects but it does not present VC-specific definitions for the three-level ranking system used by the proponent to qualify the degree or level of residual effects. For the criteria “Magnitude”, for example, levels of effect are described by comparison of the change to a baseline reference, standards/guidelines, or established thresholds of acceptable change. These limits or thresholds are not defined for each VC in summary tables presented in Chapters 7, 8, 9, 10, and 15. A table evaluating significance of effects for all VCs assessed in the EIS is required.	<p>A. For each VC assessed in the EIS, identify the VC-specific thresholds or limits used to define levels for criteria and assign significance ratings to any predicted residual adverse effects. Ensure the definitions for levels identified for each VC are specific to the VC. Include these definitions in all summary tables rating significance.</p> <p>B. Where the VC is a composite of several species, describe how species-specific ecological context information was used to support significance determination for the VC.</p> <p>C. For ecological context criteria, define thresholds or limits used to describe levels of effect for each VC and provide a rationale for their selection.</p> <p>D. For each section 5-related species at risk, include reference to critical habitat, and landscape or population thresholds, where available in evaluating magnitude of effect, spatial extent, and ecological context criteria.</p>
Proponent Mitigation Commitments					
CEAA-07	5(1), 19(1)	EIS Guidelines, Part 2, Section 6.4 Mitigation	Chapters 5 through 15	Mitigation measures should be specific, achievable, measurable and verifiable, and described in a manner that avoids ambiguity in intent, interpretation, and implementation.”	<p>A. Review and revise all mitigation measures commitments in Chapter 5 and appendices, Chapter 15: summary of key mitigation measures commitments table, and throughout the EIS to remove ambiguity and confirm that proposed mitigation measures commitments are specific. Where mitigation measures commitments remain non-specific, describe and assess the residual effects which would result should the mitigation measures not be applied.</p>

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Fish and Fish Habitat					
CEAA-08	5(1)(a)(i) Fish and Fish Habitat	EIS Guidelines, Part 2, Sections 6.1 Project setting and baseline conditions, 6.1.5 Fish and Fish Habitat EIS Guidelines, Part 2, Sections 6.3 Predicted effects on valued components, 6.3.1 Fish and Fish Habitat	Chapter 8 and Appendix 8-1 Chapter 3, 3.4.5 and 3,4,6	<p>Within the Project Footprint and Local Assessment Area, waterbodies include wetlands, watercourses, streams and lakes. The EIS describes watercourse crossings in Chapter 3 (sections 3.4.5 and 3.4.6), potential effects to fish and fish habitat in Chapter 8, and an appended Technical Report (Appendix 8-1). Area waterbodies intersected by the project are described as either fish-bearing watercourses containing fish habitat (ten crossing locations), non-fish bearing watercourses (at 23 crossing locations), or where there are no defined channels but drainage equalization is required, i.e. wetlands (approximately 284 drainage equalization culverts).</p> <p>Field data collected in July 2014 was a small sample of the total proposed crossing locations and effects to fish habitat (fish-bearing waterbodies and waterbodies supporting habitat quality in downstream waterbodies) may be underestimated. As mitigation measures presented in Chapter 5 are to be applied to known fish bearing waters and potential fish-bearing waters (Chapter 5, Environmental Protection Procedures, EP6 to 12), the assumption of non-fish bearing status for 23 watercourses and numerous wetlands within the Project Footprint may also result in unanticipated residual effects to fish and fish habitat.</p>	<ul style="list-style-type: none"> A. Clarify what mitigation measures will be applied to each crossing type installation (i.e. in either fish bearing or non-fish bearing watercourses) and the rationale for their selection. B. Describe what mitigations will apply to equalization culverts. C. Describe where retention ponds will be constructed (Chapter 8, page 8-22: “culvert and bridge crossings will be designed to divert stormwater runoff from the road into vegetated areas or retention ponds.”). D. Describe how and when fish presence/absence will be confirmed prior to work in and around watercourses where field sampling has not been completed. E. Identify what mitigation measures will be applied to fish and fish habitat if fish are found to be present in waterbodies which had been considered non fish-bearing. F. See CEAA-07 on specific language required in mitigation measures commitments. Review and revise mitigation measures addressing Project effects to fish and fish habitat described in Section 8 the Chapter 15 Summary Table of key mitigation measures commitments.
CEAA-09	5(1)(a)(i) Fish and Fish Habitat	EIS Guidelines, Part 2, Section 6.1.5 EIS Guidelines, Part 2, Section 6.3.1		<p>Riparian vegetation is described in the EIS (p. 8-24) as consisting of “a variety of streamside grasses, forbs, shrubs and trees that contribute nutrients to lakes, rivers and creeks through leaf litter, woody debris and terrestrial insect drop. The removal of riparian vegetation to accommodate temporary crossings, culvert crossings, bridge approaches, or line of sight requirements may reduce nutrient inputs into the aquatic food web.”</p> <p>The EIS describes the permanent destruction of approximately 180 m of riparian habitat to accommodate construction of bridge and culvert crossings and the alteration of approximately 192 m of riparian habitat as part of initial right-of-way clearing activities at only five of the ten watercourses described as providing fish habitat.</p>	<ul style="list-style-type: none"> A. Revise Table 8.6 (p.8-31) to correct the quantification of residual riparian habitat loss (area) which is described in the table as an area in square metres (m²) while in the text of the report it is reported as a linear measurement (e.g. 180 m or 192 m of riparian habitat). Correct the values and update the table accordingly. B. Report riparian habitat loss associated with right of way clearing and crossing culvert installations for the five other watercourse crossings with described fish habitat (Table 8.2, “marginal habitat”, p. 8-10): Unnamed Tributary of Etomami River (Site P4-X03), Unnamed Tributary of North Etomami River (Site P4-X05), Unnamed Tributary of Pamatakowin Lake (Site P4-X24), and Unnamed Tributaries of Okeyakkoteinewin Creek (Sites P4-X29 and P4-X31). Assess potential effects, propose mitigations measures, describe residual effects and evaluate significance of these riparian habitat losses within the Project Footprint and Local Assessment Area.

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					<p>C. Specify locations where the proposed 100 m setback distance for construction activities cannot be maintained and define riparian habitat losses associated with project construction within the 100 m setback.</p>
DFO-01	5(1)(a)(i) Fish and Fish Habitat	<p>EIS Guidelines, Part 2, Section 6.1.5</p> <p>EIS Guidelines, Part 2, Section 6.3.1</p>	<p>Chapter 8, Section 8.3 Summary of Residual Effects and Conclusion</p>	<p>As noted in the EIS, there will be residual effects remaining after mitigation for fish habitat following construction. DFO understands that the proponent has noted the residual footprint of the watercourse crossing structures following construction. However, it is probable that there will also be instream footprints from temporary impacts during the construction phase of the project.</p> <p>If there is an alteration of fish habitat during construction that results in serious harm (i.e., instream cofferdams/working platforms, etc.), a DFO <i>Fisheries Act</i> Authorization may be required, as well as mandatory offsetting.</p>	<p>A. Identify the potential alteration of fish and fish habitat that may result in serious harm to fish during construction (i.e. temporary impacts to facilitate construction). Provide the rationale if no harm to habitat is expected.</p> <p>B. Add a column in Table 8.6, and update it accordingly to account for the Temporary Footprint During Construction.</p>
DFO-02	5(1)(a)(i) Fish and Fish Habitat	<p>EIS Guidelines, Part 2, Section 6.1.5</p> <p>EIS Guidelines, Part 2, Section 6.3.1</p>	<p>Chapter 8. Table 8.6</p>	<p>No estimates have been provided for temporary and permanent footprints below the high water level (HWL) for the five culvert crossings in fish bearing streams.</p>	<p>A. The proponent should include in Table 8.6 the estimated footprint below the HWL for all culvert crossings on fish bearing watercourses in order to provide an accurate summary of temporary and permanent impacts to fish habitat in these watercourses.</p>

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DFO-03	5(1)(a)(i) Fish and Fish Habitat	EIS Guidelines, Part 2, Section 6.1.5 EIS Guidelines, Part 2, Section 6.3.1	Chapter 8, Section 8.3 Appendix 8-1	<p>EIS states that residual effects remaining after mitigation for fish habitat include permanent destruction of 206.5 m² of instream habitat and 180 m of riparian zone habitat (p.8-39), as well as a temporary increase in total suspended solids as a result of construction sedimentation of streams (Appendix 8-1., Table 8).</p> <p>The final decision regarding the determination of serious harm to a commercial, recreational or aboriginal (CRA) fishery and residual effects lies with DFO once all final details regarding each watercourse crossing design and construction methodology are finalized. Offsetting measures may be required under the <i>Fisheries Act</i> in the event a <i>Fisheries Act</i> Authorization is required for the Project.</p>	<p>A. Identify what mitigation will be applied to address the permanent loss of instream and riparian zone habitat.</p> <p>B. Revise Table 8.9 to include the potential offsetting measures to address the residual effects to fish habitat.</p>
DFO-04	5(1)(a)(i) Fish and Fish Habitat 5(1)(a)(ii) Aquatic Species	EIS Guidelines, Part 2, Section 6.1.5 EIS Guidelines, Part 2, Section 6.3.1	Section 5. Appendix 5-3 ESRA's Environmental Protection Procedures (EPP).	The EIS does not currently contain Environmental Protection Procedures for Mussel Salvage.	<p>A. Given the uncertainty regarding the location of Mapleleaf Mussels, describe how the presence or absence of Mapleleaf Mussel will be verified and what environmental protection procedures will be applied including mussel salvage, if Mapleleaf Mussels are found.</p>

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ECCC-WQ-IR-01	5(1)(a)(i) Fish and Fish Habitat	EIS Guidelines, Part 2, Sections 6.1.4 Groundwater and Surface Water and 6.2.2 Changes to Groundwater and Surface Water	Chapter 8 Aquatic Environment, Section 8.1 Existing Conditions and Appendix 8-1 Aquatic Environment Report	<p>Project effects to water quality are predicted by the proponent for waterbodies including streams, rivers, lakes, and wetlands throughout the Project Footprint and Local Assessment Area (EIS Chapter 8, Chapter 5).</p> <p>Environmental Protection Procedures (Chapter 5 Appendices, GR130.15.8 Water Quality Monitoring) includes:</p> <ul style="list-style-type: none"> “1. Water quality monitoring shall be required for in-water work in fish-bearing watercourses and may be required when working near fish-bearing watercourses or tributaries to fish bearing watercourses to demonstrate that deleterious substances are not entering into the watercourse. Water quality monitoring shall also occur when working upstream and within 5 km of a water treatment plant intake.” “2. A Fish and Water Quality Protection Plan shall be prepared by the Contractor in advance of construction works and any amendments must be submitted 15 days in advance of the start of work requiring or may requiring water quality monitoring. The Plan shall include a description of the works and measures proposed to mitigate adverse changes to water quality.” <p>Post-construction monitoring of water quality as it relates to fish habitat is described in the EIS in Chapter 14 (p.14-4 to 14-5) to evaluate Project effects and the effectiveness of mitigations measures. This monitoring requires sufficient detail to characterize pre-construction baseline in the receiving waterbodies found within the Project Footprint and Local Assessment Area.</p> <p>The current baseline dataset does not meet the EIS Guidelines requirements to describe “seasonal water quality... at several representative local stream and water body monitoring stations established at the project site” and “sediment quality analysis for key sites likely to receive road effluents.”</p>	<p>A. Describe what additional baseline monitoring will be conducted with respect to water quality and sediment quality, in order to characterize the natural baseline conditions (including seasonal and interannual variation).</p> <p>B. Water quality parameters should include water temperature, turbidity, TSS, pH, dissolved oxygen profiles, nutrients, metals, nitrogen and naturally occurring contaminants, with baseline salinity also included if road salts would potentially be applied to the road in future.</p> <p>C. Evaluate the potential effects on water quality against these baseline conditions (e.g., water quality and sediment quality) at all water crossings, including culvert stream crossings.</p>
ECCC-WQ-IR-02/ CEAA-10	5(1)(a)(i) Fish and Fish Habitat – water quality	EIS Guidelines, Part 2, 6.2.2 Changes to Groundwater and Surface Water and	Chapter 5 Environmental Projection Chapter 8 Fish and Fish	As indicated in the EIS (Chapter 8, p.8-25) “Explosives used in blasting use oxidizing agents such as ammonium nitrate, calcium nitrate and sodium nitrate. Nitrates from these materials may enter the watercourse due to accidental spills, leaching from wet blastholes, or in runoff from undetonated explosives in blast rock. Increased nitrate levels can have toxic effects on aquatic organisms and cause eutrophication of surface waters. In addition, if ammonium nitrate is introduced into water, it	A. Describe the mitigation measures that will be implemented to protect water quality from the effects of ammonium explosives. If mitigation measures will be incorporated from regulatory guidance documents or “necessary approvals” (Chapter 5, Appendix 5-4, GR130, p.18), describe these requirements and regulated outcomes - in this case, describe water quality in receiving waterbodies near blasting locations and quarry sites.

IR Number (e.g. HC-IR-01)	Project Effects Link to CEAA 2012	Reference to EIS Guidelines	Reference to EIS	Context and Rationale	Specific Question / Request for Information
		6.3.1 Fish and Fish Habitat	Habitat Chapter 14 Monitoring and Follow-up	<p>dissociates to form ammonia, which can have both lethal and sublethal effects on fish.”</p> <p>Without appropriate mitigation and protective measures, ammonium explosives may degrade water quality.</p> <p>Chapter 5 appendices include GR130 Environmental Specification examples provided from Project 1, the all-season road being constructed by the proponent from PR304 to Berens River, which state: “Blasting near watercourses classified as fish habitat shall adhere to set back and weight of explosive charge guidelines as referenced in Fisheries and Oceans Canada document <i>Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters 1998</i>. Where these guidelines cannot be met, blasting plans shall be submitted to the Contract Administrator for ESRA’s application to Fisheries and Oceans Canada to obtain necessary approvals prior to commencement of blasting in areas that could affect fish habitat”.</p>	B. Update water quality/fish habitat monitoring plans to incorporate any waterbodies receiving blast residue and provide the revised plans described in Chapter 14.
CEAA-11	5(1)(a)(i) Fish and Fish Habitat – water quality		Chapter 5 Environmental Projection	The Chapter 5 Environmental Protection Procedures <i>EP17 Concrete Washout Management</i> note “Where water for concrete washout activities is taken from a watercourse or waterbody, the Department of Fisheries and Oceans <i>Freshwater Intake End-of- Pipe Fish Screen Guidelines</i> , the [Provincial] <i>Water Rights Act</i> and other appropriate legislative and mitigative measures must be followed.”	<p>A. Describe what “legislative and mitigative measures” will be applied for the protection of fish and fish habitat, including water quality and quantity in habitat for aquatic species at risk during concrete washout management, and operation of concrete batch plants or cast-in place bridge construction.</p> <p>B. Identify source waterbodies for water withdrawal required for concrete batch plant operation. Describe, assess, and propose specific mitigations for the potential effects of consumptive water use on instream flow, fish and fish habitat, aquatic species at risk.</p> <p>C. Incorporate any waterbodies used for concrete washout management, operation of concrete batch plants or cast-in place bridge construction in water quality monitoring plans described in Chapter 14.</p>
Migratory Birds					

IR Number (e.g. HC-IR-01)	Project Effects Link to CEAA 2012	Reference to EIS Guidelines	Reference to EIS	Context and Rationale	Specific Question / Request for Information
CEAA-12 / ECCC-CWS-01	5(1)(a)(ii) Migratory Birds	EIS Guidelines, Part 2, 6.2.3., 6.3.2, and 6.3.3.	Chapter 9	<p>Project effects to the Migratory Bird VC have been evaluated by considering bird species in two sub-groups - Forest birds (including <i>Species at Risk Act</i> listed land birds) and Water birds (Trumpeter Swan and Yellow Rail). The selected bird species within these two groups (species that are rare, uncommon or associated with habitat types not predominant within the Project Footprint) do not adequately represent the Migratory Birds species which may be found within the Project Footprint during construction and operation activities (Chapter 9, Appendix 9-1).</p> <p>Project effects on ducks and geese, bird species valued for current use by Indigenous Peoples within the Regional Assessment Area (Chapter 9, Appendix 9-1), have not been assessed.</p>	<ul style="list-style-type: none"> A. Identify and assess Project construction and operation effects to one or more bog inhabiting bird species, such as the Palm Warbler; forest birds such as the Lincoln Sparrow; and any bird species of importance to Indigenous groups such as ducks and geese. Provide a clear rationale for excluding any species. . B. Identify and describe species-specific mitigation measures required to address Project effects to birds inhabiting the specific habitats associated with the Project Footprint and Local Assessment Area. C. For each habitat type, describe mitigation measures that will be required to avoid the incidental taking of nests, eggs, or young or the creation of waters harmful to migratory birds. D. If mitigation measures currently presented in Chapter 5 and Appendices are considered to address these species sufficiently, provide a rationale. E. Update the EIS to reflect the analysis for the newly assessed species within the residual effects assessment and significance rating for the migratory bird VC. Reflect this within the cumulative effects assessment in Chapter 13. F. Correct all tables in Chapter 9 presenting habitat types within the Project Footprint, Local Assessment Area, and Regional Assessment Area. Column headings include an error that underrepresents values in the column “Proportion (%)”. The heading incorrectly suggests the values are percentages while they are not (i.e. Table 9.4 column suggests 0.67 % of the Project Footprint is bog and fen complex instead of the correct 67%).
Species at Risk					

IR Number (e.g. HC-IR-01)	Project Effects Link to CEAA 2012	Reference to EIS Guidelines	Reference to EIS	Context and Rationale	Specific Question / Request for Information
CEAA-13	5(1)(a) – aquatic Species at Risk, migratory bird Species at Risk			<p>The environmental assessment must include the following information to support the analysis of potential effects to species at risk: residences, seasonal movements, movement corridors, interprovincial ranges, habitat requirements, key habitat areas, identified critical habitat and/or recovery habitat (where applicable), and general life history of species at risk that may occur in the project area or be affected by the project.</p> <p>The EIS identifies 20 federally listed or assessed species at risk with likely potential to occur and use habitat in the Project Footprint/Local Assessment Area/Regional Assessment Area (Chapter 8, Table 8.4, and Appendix 9-7). The EIS does not carry forward all of these species as a VC or component species within a VC.</p> <p>Two listed bird species at risk (Short-eared Owl, Horned Grebe) are identified in Appendix 9-7 as potentially present in the Project Footprint and Local Assessment Area but are not addressed in the EIS. Another species at risk, Least Bittern, is similarly not addressed in the EIS main text but was described in the appended wildlife technical report (Appendix 9-1), as a species assessed under the Waterbirds VC. This species was also listed in Appendix 9-6: List of Bird Species in the Local Assessment Area and Their Conservation Status.</p>	<p>A. For each potentially present species listed under the <i>Species at Risk Act</i> or assessed and recommended for listing by the Committee on the Status of Endangered Wildlife in Canada that may occur in the project area or be affected by the project provide the following information:</p> <ul style="list-style-type: none"> i. Residences, seasonal movements, movement corridors, interprovincial ranges, habitat requirements, key habitat areas, identified critical habitat and/or recovery habitat (where applicable) and general life history. <p>B. For project components with locations undefined (e.g. camps, quarries), describe mitigation measures to avoid effects to species at risk that will be considered in location selection.</p> <p>C. Correct the reference in the EIS (Section 8.2.4.3.2, p.8-37) that indicates “ In the event that aquatic species at risk are found in any other watercourses in the Local Assessment Area, the mitigation measures outlined in section 8.2.2.1.2 will be applied”. This section does not exist in the EIS.</p> <p>D. Review Chapter 5 mitigation measures and describe how contractors will be asked to confirm endangered species habitat for the species at risk identified as potentially present in the Project Footprint or Local Assessment Area.</p>
CEAA-14	Species at Risk 19(a) – cumulative effects 19(b) – significance of effects	Section 6.6.3 (b), (d), (e)	Chapter 9, Chapter 13, Appendix 9-1	<p>The EIS (chapter 9, Appendix 9-1) includes a description of total habitat disturbance within the Atikaki-Berens Boreal Woodland Caribou Management Unit relative to the sustainable threshold of 65% undisturbed (35% disturbed) habitat identified by Environment Canada (2012). In cases presented from 1960 to 2025, disturbance ranged from 48.1% (due to fire disturbance) to 33.4%.</p> <p>The EIS states that “Decommissioning of the winter road is expected to provide an additional 31 ha of mixed habitat types in the Local Assessment Area and an additional 112 ha of mixed habitat types in the Regional Assessment Area” (p. 9-78) and therefore that the total percentage of cumulative habitat disturbance for the Atikaki-Berens Boreal Woodland Caribou Management Unit will realize a positive habitat gain for caribou by the year 2020 (Table 13.4).</p>	<p>A. Provide justification for describing as moderate magnitude the exceedance of a sustainability threshold, that is the 65% undisturbed (35% disturbed) habitat value identified by Environment Canada (2012) in the <i>Recovery Strategy for the Woodland Caribou Boreal Population</i>.</p> <p>B. Provide scientific evidence, analysis, and methodology used to support the assertion in the EIS that the habitat created by decommissioning the winter road will be suitable woodland caribou habitat by the year 2020.</p> <p>C. Provide an analysis of the cumulative habitat disturbance for the Atikaki-Berens management unit in which the winter road habitat is not suitable woodland caribou habitat by the year 2020. Indicate how this would impact the significance determination for project effects to caribou (Table 9.27) and the significance determination for the cumulative effect analysis (Table 13.5). Provide a worst-case scenario analysis that also takes into account the region’s natural fire disturbance cycle (e.g. 40 year fire return cycle and forest fire in 2020). Update the predicted disturbance areas in Table 13.4 (p.13-</p>

IR Number (e.g. HC-IR-01)	Project Effects Link to CEAA 2012	Reference to EIS Guidelines	Reference to EIS	Context and Rationale	Specific Question / Request for Information
					15), the proposed mitigation measures, and the significance conclusions in Table 13.5 (p. 13-17) for cumulative effects to woodland caribou as appropriate.
CEAA-15 / ECCC-CWS-02	5 - caribou 5(1)(c)(iii) – current use, caribou		Chapter 9, 9.2.5.2 Boreal Woodland Caribou	<p>Analysis of historic and current collaring data collected from 2011 to 2015 indicates that the all-season road (total length 94.53 km) will intersect 26.3 km of caribou summer core use, and 25.2 km of boreal woodland caribou winter core use (Table 9.24; Joro Consultants 2015a). More details regarding the movement patterns and habitat use of the caribou is required to evaluate proposed mitigation measures and potential residual effects.</p> <p>Residual effects from Project related mortality are assumed to be negligible given the absence of reported caribou collisions during 4 years of construction for Project 1 (p.9-81). However an evaluation of Project related mortality has not been completed considering the increased traffic volumes anticipated during operation of the Project. Indigenous groups have also identified that traffic volumes are underestimated. An updated analysis of Project related mortality is required for the increased traffic volumes.</p> <p>No residual effects are identified for predation related mortality to caribou. The proponent assumes there will be no change to wolf predation risk to caribou in the RAA and LAA as a result of the Project due to decommissioning of the temporary access routes and winter road. However, even with the future natural reclamation and revegetation of the winter road the Project will create a new linear disturbance enabling predator travel within caribou habitat resulting in a residual effect.</p> <p>Disturbance and displacement of animals as a result of quarry blasting and other construction activities is described; however, mitigation measures are not clearly detailed. Caribou interactions with project-created hazards such as retention ponds or quarries are not evaluated.</p> <p>The EIS (p.9-71), states that there is limited hunting use of boreal woodland caribou: “Boreal woodland caribou were traditionally hunted by some communities on the east side, but use of this species as a food source has declined or ceased as the communities have become aware of its status. Licenced hunting of boreal woodland caribou is not permitted in</p>	<p>A. Provide additional detail (e.g., mapping) information on the annual movements and habitat use of caribou (calving, wintering habitat) including seasonal movements across the proposed new all-season road corridor and existing linear features (e.g. winter road and power transmission line).</p> <p>B. Update the cumulative effect assessment to consider information on caribou use areas and detailed seasonal habitat use.</p> <p>C. Describe the mitigation measures to address potential barriers to caribou and wildlife movement posed by quarries.</p> <p>D. Provide additional detail regarding the mitigation measures to address construction and blasting effects during spring calving. For construction activities and blasting, how long would activities be suspended and at what distance from known calving areas would this be done? Describe potential residual effects with a clear rationale if residual effects are considered negligible.</p> <p>E. Update the residual effects assessment for project effects to caribou (e.g. Tables 9.26 and 9.27) to include mortality effects to caribou from predicted increases in traffic volumes and predators (see IR CEAA-29). Describe mitigation measures to address these effects.</p> <p>F. Describe how potential effects on caribou would affect current use (e.g. hunting), availability of country foods, and the potential impacts to rights. Identify proposed mitigation/accommodation measures and describe the view of Indigenous groups on these measures.</p>

IR Number (e.g. HC-IR-01)	Project Effects Link to CEEA 2012	Reference to EIS Guidelines	Reference to EIS	Context and Rationale	Specific Question / Request for Information
				Manitoba (MCWS 2015c).” However, Poplar River First Nation has indicated that two families within Poplar River’s traditional territory continue to harvest woodland caribou annually and there may be others who hunt caribou when there is an opportunity to do so.	
Atmospheric Effects					
ECCC-AQ-IR-03 / CEEA-16	5(1)(b) – change to the environment on federal lands, other province, outside of Canada	EIS Guidelines, Part 2, Section 6.2 Predicted Changes to the Physical Environment and 6.3.5 Trans-boundary Environment	Chapter 13, Cumulative Environmental Effects, Appendix 13-5 Greenhouse Gas Emissions Assessment, Section 4, Tables 4.3-4.8.	The Greenhouse Gas Emissions Assessment estimates have several inconsistencies and irregularities.	<p>A. The summary analysis presented in Appendix 13-5, <i>Greenhouse Gas Emissions (GHG) Assessment for East Side Road Authority All-Season Road Projects</i> relies on external documents (GHG quantification and assessment reports for Project 1) that are not publicly accessible to describe the GHG quantification methods employed for Project 4. Describe the methodology used.</p> <p>B. Present GHG emissions by individual pollutant as requested in <i>Consideration of greenhouse gas emissions in environmental assessment for the proposed Project 4 – All-season Road Connecting Berens River and Poplar River First Nation</i>, CEEA letter to ESRA, February 11, 2016).</p> <p>C. Address the inconsistencies and apparent errors present between the EIS and the GHG assessment in Appendix 13 -5.</p> <ul style="list-style-type: none"> i. Appendix 13-5, Table 4.4 does not include Project activities associated with operations and maintenance of the all-season road which are listed in the EIS as Project activities (grading, plowing, mowing, bridge maintenance, culvert cleanouts/ steaming, etc.). ii. The construction period is described in the GHG assessment as 7 years in duration vs 8 years described in the EIS. iii. Predicted operation phase effects are limited to only 10 years, despite the predicted +50 years (permanent) operation duration. iv. The wetland area considered in the GHG assessment appears to be held equal between baseline and Project scenarios despite the wetland area loss apparent in the Project Footprint. <p>D. A comparison of Tables 4.3 (baseline, winter road) and 4.4 (Project 4, all-season road) indicates a reduction in emissions associated with vehicular use, going from the ice and winter road in the baseline scenario (802 tonnes CO2e) to the all-season road (717</p>

IR Number (e.g. HC-IR-01)	Project Effects Link to CEEA 2012	Reference to EIS Guidelines	Reference to EIS	Context and Rationale	Specific Question / Request for Information
					<p>tonnes CO2e). Discuss why vehicular emissions would be expected to decrease with the use of an all-season road.</p> <p>E. In Table 4.4, expected vehicular emissions in year 3 and 4 are given as 7174 tonnes instead of 717 tonnes as in the other years. Confirm whether this number is correct.</p>
ECCC-AQ-IR-06		EIS Guidelines, Part 2, 6.2 and 6.3.5	Appendix 13.5: Greenhouse Gas Emissions Assessment	The GHG assessment is lacking in detail and has inconsistencies to properly confirm the assessment of GHG emission impacts.	A. Provide details and analysis of proposed activities, such as the number of flights, vehicle trips, ferry trips, etc.; the number of km travelled by each of these modes; and the emission factors used to properly confirm the assessment of GHG emission impacts, taking into consideration responses provided to questions above on GHG emissions.
ECCC-AQ-IR-04	5(1)(b) – change to the environment on federal lands, other province, outside of Canada	EIS Guidelines, Part 2, 6.2 and 6.3.5	Chapter 13 (Cumulative Environmental Effects), Appendix 13-5 (Greenhouse Gas Emissions Assessment)	In EIS Appendix 13-5, pg. 22, the proponent recommends “that the wetland areas within the ROW remain as wetlands in order to maintain their carbon sequestration potential. Provisions for the management of flows (e.g. equalization culverts) should be considered to protect and preserve the wetlands systems through appropriate design measures”.	A. Tables 4.3-4.8 do not consider carbon sequestration in wetlands but instead consider the methane emissions from wetlands and identify the reduced methane emissions from the reduced wetland area as a GHG benefit when considering the impacts of the all-season road. Explain this apparent contradiction in the GHG emissions assessment.
Indigenous Peoples					
CEAA-17	5(1)(c) – an effect occurring in Canada of any change that may be caused to the environment on i) Health and socioeconomic conditions ii) Physical and cultural heritage iii) The current use of lands and resources for traditional purposes, or iv) Any structure, site or thing that is of historical, archaeological, paleontological or architectural significance			Potentially affected Indigenous groups, including Manitoba Metis Federation, have expressed concerns that traditional knowledge collected in the project area has not been considered; therefore, potential environmental effects have not been adequately characterized in the EIS. <i>Manitoba Metis Federation Traditional Knowledge and Land Use Study (TKLUS) for the study area identified by ESRA to include P4, P7 and P7a was submitted to ESRA on May 31, 2016 after the submission of the EIS and contains information relevant to the Project 4 regional and local study areas.</i>	A. Demonstrate how Aboriginal traditional knowledge, including but not limited to, information related to traditional land and resource use, was considered in the baseline information for each VC and assessment of environmental effects. B. If/where differences between Aboriginal and Western knowledge arise, include both information sources in the assessment and provide a rationale on the decision to consider one source of information over another.

IR Number (e.g. HC-IR-01)	Project Effects Link to CEAA 2012	Reference to EIS Guidelines	Reference to EIS	Context and Rationale	Specific Question / Request for Information
CEAA-18	5(1)(c) – an effect occurring in Canada of any change that may be caused to the environment on i) Health and socioeconomic conditions ii) Physical and cultural heritage iii) The current use of lands and resources for traditional purposes, or iv) Any structure, site or thing that is of historical, archaeological, paleontological or architectural significance	EIS Guidelines, Part 2, 5.1, 6.1.8; and 6.3.4	Chapter 10	<p>The EIS (Chapter 10 pg. 10-3, Figure 10-2) defines the Socio-Economic Regional Assessment Area as the area beyond the Local Assessment Area within which most indirect and cumulative effects would be expected to occur and areas in which the Project may have effects on the regional environment and those who use this area. The RAA as defined by the proponent and presented in Figures in the EIS does not include Manitoba Metis locals or Hollow Water First Nation.</p> <p>Baseline information described in Chapter 10 (section 10.1.3) on land and resources use for Indigenous peoples in the RAA, including Manitoba Metis Federation, Bloodvein First Nation, Hollow Water First Nation, Little Grand Rapids First Nation, and Pauingassi First Nation, is insufficient to assess residual effects to Aboriginal peoples' health and socioeconomic conditions, physical and cultural heritage, current use of lands and resources for traditional purposes, or heritage structures, sites, or things.</p> <p>Additional information sources that are to be considered by the proponent are the <i>Manitoba Métis Land Use and Occupancy Study for the East Side Road Authority Project</i> (Shared Values Solutions, 2016) and <i>Manitoba Metis Federation Traditional Knowledge and Land Use Study (TKLUS)</i> for the study area identified by ESRA to include P4, P7 and P7a which were submitted to the proponent and the Agency in May 2016 following the proponent's submission of the EIS.</p>	<ul style="list-style-type: none"> A. Based on spatial and temporal scope selected for the assessment, provide baseline information for Bloodvein First Nation, Hollow Water First Nation, Little Grand Rapids First Nation, Pauingassi First Nation and Manitoba Metis Federation to support the analysis of predicted effects on Aboriginal peoples. B. Revise Figures in Chapter 10 and Figure 13-2 to include Manitoba Metis locals. C. Evaluate potential Project effects, including cumulative effects, to the current use of lands and resources by people within the RAA and describe proposed mitigation measures. Identify potential impacts on groups exercising rights in the RAA, proposed accommodation measures, and view of the group on those measures. D. Describe the mitigation measures to address the potential Project effects, including cumulative effects on the environment, which will impact the health and socioeconomic conditions of peoples within the RAA. Clarify which mitigation measures apply to which groups. E. Describe the mitigation measures to address the potential Project effects, including cumulative effects on the environment, which will impact physical and cultural heritage, and structure, site or things of historical, archaeological, paleontological or architectural significance to Aboriginal peoples within the RAA. Clarify which mitigation measures apply to which groups. F. Describe the follow-up and monitoring plan, including the indicators to evaluate the impacts of changes to the environment on the health and socio-economic well-being of Aboriginal Peoples within the RAA.
HC-IR-01/02/05 /ECCC-AQ-IR-05	5(1)(c)(i) – health and socio-economic conditions (Air Quality)	EIS Guidelines, Part 2, 6.1.1 Atmospheric Environment	Chapter 7 Physical Environment Section 7.2.4.2.1 Construction Effects and Mitigation	<p>Section 7.2.4.2.1 of the EIS states that no exceedances of air quality guidelines are anticipated within the local assessment area from construction activities. However, no baseline air quality data or predicted contaminant concentrations were presented in the EIS. The proponent's assessment of air quality included only particulates and VOCs. Health Canada's <i>Human Health Risk Assessment for Diesel Exhaust</i> (http://healthy Canadians.gc.ca/publications/healthy-living-vie-saine/exhaust-dieselgaz-echappement/index-eng.php) identifies a short-term (2-hour) exposure guidance value of 10 mg/m³ and a chronic exposure guidance value of 5 mg/m³ for diesel exhaust.</p> <p>Without appropriate mitigation measures, concrete batch plants can be a source of inhalable particulate matter. Locations of batch plants and mitigation measures to address the potential effects to air quality related</p>	<ul style="list-style-type: none"> A. Include air quality contaminants listed in the EIS Guidelines (PM_{2.5}, PM₁₀, SO_x, and NO_x) in the assessment of Project effects to the environment because they are relevant to the evaluation of potential Project effects to health in local communities. B. Include in the analysis PAHs, (benzo[a]pyrene), and diesel particulate matter considering Health Canada information (Human Health Risk Assessment for Diesel Exhaust, http://healthy Canadians.gc.ca/publications/healthy-living-vie-saine/exhaust-dieselgaz-echappement/index-eng.php). The exclusion of these contaminants during the construction and operation phase may underestimate population exposure and risk. Provide a rationale for contaminants not being considered in the analysis. C. Provide baseline air quality data and compare against predicted future concentrations as a result of project development to evaluate

IR Number (e.g. HC-IR-01)	Project Effects Link to CEAA 2012	Reference to EIS Guidelines	Reference to EIS	Context and Rationale	Specific Question / Request for Information
				to batch plants for the generation of concrete and asphalt are not discussed in the EIS.	<p>the impacts to local receptors. See Health Canada’s (2010) Useful Information for Environmental Assessments for Health Canada’s recommended methodology for evaluating air in environmental assessments.</p> <p>D. Indicate which mitigation measures will be put in place to reduce dust emissions from concrete and/or asphalt batch plants (e.g., use of bag houses, strategic placement of batch plants).</p> <p>E. The proponent should evaluate all chemicals of potential concern before concluding there are no exceedances of air quality guidelines. The proponent is requested to provide additional rationale to support the conclusion that there will not be significant effects from the construction, operation, and maintenance phases.</p>
HC-IR-03/04	5(1)c(i) – health and socio-economic conditions (Air Quality) (Noise)	EIS Guidelines, Part 2, Section 6.1.1 Atmospheric Environment	Chapter 6, section 6.2.1, Figure 6-1; Chapter 7, section 7.2; Chapter 10, section 10.1.6.2	<p>It is important to clearly describe the location and distance from the project site(s) of all potential human receptors (permanent, seasonal or temporary) — taking into consideration the different types of land uses (e.g. residential, recreational, industrial, etc.) and identifying all sensitive receptor locations (e.g. schools, hospitals, retirement complexes or assisted care homes).</p> <p>In the EIS, the local assessment area (LAA) is described and shown as generally extending 5 km from the centreline of the proposed all-season road. Figure 6-1 shows the local assessment area boundary ends at the reserves for both Poplar River First Nation and Berens River First Nation. The terminus at each end of the road right-of-way is 1.4 km from the nearest building on the Berens River First Nation reserve and 530 m to the nearest building on Poplar River First Nation reserve but it is unclear how these receptors were considered in the assessment of potential Project effects to human health through air quality and noise effects.</p> <p>In Chapter 10, the EIS states there are 10 registered traplines within the LAA. Additionally, it states that hunting and gathering activities occur within the LAA but these receptors (e.g. campsites, traplines) were not identified.</p>	<p>A. Clarify if the communities on the reserves were included in the air quality assessment and noise assessment. If the reserves are not included in the local assessment area provide rationale for their exclusion.</p> <p>B. Provide rationale for using the same LAA for noise and air quality.</p> <p>C. Clearly identify all potential receptors within the LAA, including Indigenous people that may be involved in current use activities, and assess potential effects to these. For example, include watercourse crossing P4-X29 given its proximate location to Many Bays Lake and valued moose habitat.</p>
CEAA-19/ HC-IR-06	5(1)c(i) – health and socio-economic conditions (Noise)	EIS Guidelines, Part 2, Section 6.1.1 Atmospheric Environment	Chapter 7	In Chapter 7 (page 7-34), the EIS concludes that there are few human receptors to noise and vibration, with the majority located within the communities of Berens River First Nation/NAC and Poplar River First Nation. However, specific blasting locations, timing and duration are not yet defined. The noise assessment should consider effects to community receptors and traditional use areas (e.g. traplines, campsite locations),	<p>A. Describe any mitigation or accommodation measures for Project noise effects on community receptors and traditional use areas, and impacts on s.35 rights. Provide a clear rationale regarding conclusions of no effects on the receptors, and the views of groups on effects and impacts.</p> <p>B. Provide content from the report referenced in the EIS (RWDI</p>

IR Number (e.g. HC-IR-01)	Project Effects Link to CEEA 2012	Reference to EIS Guidelines	Reference to EIS	Context and Rationale	Specific Question / Request for Information
				effects on current use and potential impact on groups, mitigation/accommodation measures, and views of Indigenous groups on those measures.	Consulting Engineers & Scientists. (2015). Final Report: Blasting Noise and Vibration Guidance. Report prepared for Manitoba East Side Road Authority. March, 2015) to support the proponent’s assertion of no effect.
HC-IR-07	5(1)c(i) – health and socio-economic conditions (Noise)	EIS Guidelines, Part 2, Section 6.1.1 Atmospheric Environment	Chapter 7, sections 7.15, 7.22, 7.2.4.3.1, 7.3.3	There is no ambient noise data in the EIS and predicted noise levels are not compared against guideline values.	<p>A. Compare current ambient noise levels against predicted future levels as a result of Project development to evaluate the impacts to local receptors. If the proponent does not have measured data, a value of 35 dBA (ERCB Directive 038, revised Feb 16, 2007) is suggested to be used for a quiet rural area.</p> <p>B. See Health Canada’s (2010) <i>Useful Information for Environmental Assessments</i> for Health Canada’s recommended methodology for evaluating noise in environmental assessments http://publications.gc.ca/site/archived-archived.html?url=http://publications.gc.ca/collections/collection_2015/sc-hc/H128-1-10-599-eng.pdf</p>
HC-IR-08/09	5(1)c(i) – health and socio-economic conditions (Drinking Water Quality)	EIS Guidelines, Part 2, Sections 6.1.8/6.3.4 Aboriginal Peoples	Chapter 7, Table 7.8, sections 7.3.1, 7.2.4.1.1; Chapter 14, section 14.3	<p>The significance evaluation for the effects on water quality from the Project construction is marked as Not applicable in Table 7.8.</p> <p>The EIS states that monitoring will be undertaken during construction activities and post-construction, however, no detailed information about the water quality monitoring plan is provided.</p>	<p>A. Provide the rationale that supports the “Not applicable” significance evaluation under the Water Quality effects in Table 7.8.</p> <p>B. Provide detailed water quality monitoring plans for the protection of drinking water quality (including locations, frequency, duration, etc.).</p> <p>C. Describe any mitigation measures that will be implemented in the event that monitoring indicates a deterioration of water quality that may affect human health (e.g. stop construction) and any proposed communication plans to inform potentially affected communities.</p> <p>D. Discuss whether there will be a formal complaint-response process for drinking water for the communities and what measures will be taken to deal with any complaints.</p> <p>E. Provide information on the planned substances for ice control (road salt, sand, etc.) and dust control (e.g. water, chemical dust suppressants, etc.) during dry periods. Describe any potential impacts that the introduction of these substances may have on drinking water quality.</p>
CEAA-20	5(1)(c) – an effect occurring in Canada of any change that may be caused to the environment on i) Health and socioeconomic conditions ii) Physical and cultural heritage		Chapter 7, Chapter 8, Chapter 4, Chapter 10	The EIS (Chapters 4, 7, 8, 10) identifies concerns raised by Indigenous groups on potential project effects to water quality and fish habitat quality in waterbodies within the Project Footprint or Local Assessment Area (e.g. Berens River, Leaf River, Etomami River, North Etomami River, Okeyakkoteinewin Creek, Kapawepakuk Creek, Pamatakakowin Lake, Bull Lake). Poplar River, for example, is noted by Poplar River First Nation as being of high value in the EIS, Chapter 8 (p.8-21): “it is where we get our	<p>A. Define any additional water quality mitigation measures proposed for project components to be located between KM 0 and KM 25 (near Berens River, Etomami River, North Etomami River), between KM 25 and KM 55 (near Leaf River, Pamatakakowin Lake, Bull Lake), and between KM 55 and KM 94.1 (near Poplar River, Okeyakkoteinewin Creek, and Kapawepakuk Creek) resulting from proponent discussions with Indigenous groups following the May</p>

IR Number (e.g. HC-IR-01)	Project Effects Link to CEAA 2012	Reference to EIS Guidelines	Reference to EIS	Context and Rationale	Specific Question / Request for Information
	iii) The current use of lands and resources for traditional purposes, or iv) Any structure, site or thing that is of historical, archaeological, paleontological or architectural significance			life from; it is the source of our clean drinking water; it is the most important place on earth, it is our survival, our livelihood” (CIER and Poplar River First Nation 2015).	10, 2016 posting of the EIS. B. Assess potential impacts to rights anticipated from project changes to water quality in rivers, streams, lakes that provide drinking water or may provide drinking water. Identify the potential effects on Poplar River (a site of cultural significance), any impacts on rights and mitigation or accommodation measures, as well as the views of the groups on these measures.
CEAA-21 / HC-IR-10	5(1)(c)(i) – health and socio-economic conditions (Country Foods)	EIS Guidelines, Part 2, Section 6.1.1 Atmospheric Environment, 6.3.4 Aboriginal Peoples	7.2.4.2, 10.1.6, 10.1.6.1, 10.1.6.2, 10.1.6.4 9.2.4 Effects to Vegetation 10.2.4.5 Human Health and Safety Appendix 10-3, Appendix 10-4, Appendix 10-5.	Section 10.1.6 through 10.1.6.4 state that hunting, trapping, and gathering all occur within the LAA, however, the effect of the Project construction, operation and maintenance on country foods (foods trapped, fished, hunted, harvested or grown for subsistence or medicinal purposes, or obtained from recreational activities such as sport fishing and/or game hunting), particularly the effect of dust deposition from the construction and operation of an unpaved road is not assessed in the EIS. The effects assessment of the Project construction, operation and maintenance on vegetation (EIS, section 9.2.4) does not include an assessment of the potential changes to water quality and air quality that may affect vegetation. The effects assessment of the Project construction, operation and maintenance on human health (EIS, section 10.2.4.5) does not assess the potential effects of changes to air quality, water quality and noise levels on the quality and availability of country foods.	A. Assess the effects of changes in air quality, water quality, and noise levels on the availability and quality of country foods. Identify any potential effects on current use and potential impacts on potential or established rights (e.g., hunting, fishing, gathering). B. Assess the effects of the project on the consumption of country foods and the potential for adverse human health effects. C. Describe the proposed mitigation measures and anticipated residual effects. D. Clarify the terminology used for the thresholds and evaluation of the magnitude/geographic extent of Project effects on travel routes and human health. E. Describe what measures will be taken to identify potential archaeological or historical resources during construction. What measures will be taken to respond to accidental discoveries of archaeological or historical resources? How will the Project’s construction and operation affect medicinal plants and harvesting of medicinal plants north of Berens River? Describe mitigation and accommodation measures to address these potential effects and the views of the groups on the proposed measures.
CEAA-22	5(1)(c) – an effect occurring in Canada of any change that may be caused to the environment on i) Health and socioeconomic conditions ii) Physical and cultural heritage iii) The current use of lands and resources for traditional purposes, or iv) Any structure, site or	EIS Guidelines, Part 2, Section 6.3.4	Chapter 10, Table 10.7	The EIS contains in Table 10.7 (Chapter 10, p.10-45) a summary of interactions between socio-economic and cultural environment VCs and Project activities during construction and operation phases. As noted in IR CEAA-05, the EIS also includes numerous references to the timing of construction activities or notification to communities regarding the timing of activities as planned mitigation measures that would negate residual environmental effects; however, the EIS does not adequately describe the timing of spatial and temporal overlaps anticipated between Project activities (construction and operation phases) and current uses of lands and resources for traditional purposes. This limits evaluation of the effectiveness of the proposed mitigation measures and means that	A. Provide a description and analysis of specific timing for Project construction and operation activities related to the timing of traditional practices. B. Describe potential effects resulting from overlapping periods and provide associated proposed mitigation measures. Incorporate into residual effects the assessment for the socio-economic and cultural environment VCs. Identify and describe other potential activities in relation to timing of traditional practices. At a minimum, potential overlaps to address include: i. blasting activities and hunting; ii. vegetation clearing and trapline operation;

IR Number (e.g. HC-IR-01)	Project Effects Link to CEEA 2012	Reference to EIS Guidelines	Reference to EIS	Context and Rationale	Specific Question / Request for Information
	thing that is of historical, archaeological, paleontological or architectural significance			residual effects described for Project effects to traditional use activities and health may be underestimated.	<ul style="list-style-type: none"> iii. crossing construction and fishing; and iv. closure or access restriction for construction and operational maintenance and travel route use. <p>C. Assess any anticipated potential impacts to rights. Propose accommodation measures and describe views of Indigenous groups on any proposed accommodations.</p>
CEAA-23	5(1)(c) – an effect occurring in Canada of any change that may be caused to the environment on <ul style="list-style-type: none"> i) Health and socioeconomic conditions ii) Physical and cultural heritage iii) The current use of lands and resources for traditional purposes, or iv) Any structure, site or thing that is of historical, archaeological, paleontological or architectural significance 	EIS Guidelines Part 1, Section 3.3.2 Valued Components to be examined Part 2, Section 5. Aboriginal Engagement and Concerns	6.4.1 Selection of Valued Components Chapter 10 Socio-economic and Cultural Environment	<p>Concerns with regard to potential effects to traditional land use, traditional lands, and the traditional way of life as a consequence of increased access by visitors are expressed in several places in the EIS (and validated through consultation with Manitoba Metis Federation and Poplar River First Nation).</p> <p>No mitigation has been proposed to address these concerns regarding the effects of increased access on traditional land use. There is no analysis of the potential impacts to rights that may occur from these potential effects.</p>	<ul style="list-style-type: none"> A. Determine how increased access to previously remote areas by people from the outside would affect harvesting success by local residents. B. If access has the potential to affect different species or different types of traditional land use activities in different ways, these must be examined separately. Determine how impacts to traditional land use as a consequence of increased access would affect the quantity of country foods available to local residents. C. Assess potential impacts to rights anticipated. Propose accommodation measures and describe views of Indigenous groups on any proposed accommodations.
CEAA-24	5(1)(c) – an effect occurring in Canada of any change that may be caused to the environment on <ul style="list-style-type: none"> i) Health and socioeconomic conditions ii) Physical and cultural heritage iii) The current use of lands and resources for traditional purposes, or iv) Any structure, site or thing that is of historical, archaeological, paleontological or architectural significance 	EIS Guidelines, Part 2, sections, 5.1, Aboriginal Groups to Engage and Engagement Activities, 6.1.8 Aboriginal Peoples, 6.3.4 Aboriginal Peoples, 6.4 Mitigation	Chapter 10, section 10.1.6 Traditional Knowledge and Land Use	Manitoba Metis Federation has asserted that there are potential effects of the Project on Métis land use in the LAA and RAA. The <i>Manitoba Metis Land Use and Occupancy Study (MLUOS) for the East Side Road Authority Project</i> (May 2016) was submitted to the proponent by Manitoba Metis Federation after the EIS was submitted to the Agency.	<ul style="list-style-type: none"> A. Update Chapter 10, Socio-Economic and Cultural Environment, to reflect information presented in the Manitoba Metis Federation’s MLUOS. This update shall include baseline information, information on potential effects, and mitigation measures proposed to minimize those effects. B. Given the concerns raised by MMF, please identify how the proponent identified potential effects, the proposed mitigation measure to address potential effects, and the views of groups on these measures.

IR Number (e.g. HC-IR-01)	Project Effects Link to CEAA 2012	Reference to EIS Guidelines	Reference to EIS	Context and Rationale	Specific Question / Request for Information
CEAA-25	5(1)(c) – an effect occurring in Canada of any change that may be caused to the environment on iii) The current use of lands and resources for traditional purposes	EIS Guidelines, Part 2, section 6. Effects Assessment, section 6.3.4 Aboriginal Peoples	Chapter 10, section 10.2.4 Effects on the Socio-Economic and Cultural Environment	<p>Appendix 10-3 <i>Summary of Potential Construction Effects on the Socio-Economic and Cultural Environment Valued Components Prior to Mitigation</i> and Appendix 10-4 <i>Summary of Potential Operations and Maintenance Effects on the Socio-Economic and Cultural Environment Valued Components Prior to Mitigation</i> do not include a summary of effects on hunting, trapping, fishing and gathering or on commercial fishing and trapping.</p> <p>In order to assess effects to traditional land use, Chapter 10 should include a thorough assessment of the potential effects to the species/groups important to the current use of lands and resources by Aboriginal Peoples (Appendix 10-5). This assessment must include, among other things, an analysis of preferred harvesting areas for each species in relation to the relevant LAA and RAA, and for each Indigenous group within each LAA and RAA.</p>	<p>A. Include hunting, trapping, fishing and gathering, and commercial fishing and trapping in summary tables in Appendix 10-3 and 10-4. Define potential effects and provide an analysis.</p> <p>B. Within the analysis of potential construction, operation and maintenance effects to traditional land use (10.2.4.2) include an analysis of preferred harvesting areas for each of the species outlined in Appendix 10-5 in relation to the relevant LAA and RAA, for each species, and outline how these effects relate to each of the groups in the local and regional assessment areas. The focus of this assessment should be on traditional resource <u>use</u> activity rather than on the state of the resource VCs.</p>
CEAA-26	5(1)(c) – an effect occurring in Canada of any change that may be caused to the environment on i) Health and socioeconomic conditions ii) Physical and cultural heritage iii) The current use of lands and resources for traditional purposes, or iv) Any structure, site or thing that is of historical, archaeological, paleontological or architectural significance	Part 2, Section 5, Aboriginal engagement and Concerns	Chapter 4, Table 4.7, p. 4-39	Table 4.7 does not make it clear how future engagement activities and notifications planned by the proponent will differ by group.	<p>A. Outline plans for future engagement activities for each Indigenous group identified in the EIS Guidelines Part 2, Section 5.1.</p>
CEAA-27	5(1)(c) – an effect occurring in Canada of any change that may be caused to the environment on i) Health and socioeconomic conditions ii) Physical and cultural heritage	Part 2, Section 6..8, Aboriginal Peoples, physical and cultural heritage	10.1.5.8 Cultural, Heritage and Archaeological Record, p. 31	With regard to Heritage Resource Impact Assessment work done in the Berens River Traditional territory, the EIS states that, "four traditional use sites were identified including two modern campsites and two trapping areas with equipment for trapping marten. It was determined that no further archaeological investigations were required with respect to this portion of the all-season road corridor. However, community engagement was recommended to determine the appropriate management of the	<p>A. Outline plans to engage Berens River First Nation to determine the appropriate management of the potential effects to their traditional use sites. If this engagement has already taken place, how will these effects be mitigated?</p> <p>B. Assess potential impacts to rights anticipated. Propose accommodation measures and describe views of Indigenous groups on any proposed accommodations.</p>

IR Number (e.g. HC-IR-01)	Project Effects Link to CEAA 2012	Reference to EIS Guidelines	Reference to EIS	Context and Rationale	Specific Question / Request for Information
	iii) The current use of lands and resources for traditional purposes, or iv) Any structure, site or thing that is of historical, archaeological, paleontological or architectural significance			potential effects to the traditional use sites.”	
CEAA-28	5(1)(c) – an effect occurring in Canada of any change that may be caused to the environment on i) Health and socioeconomic conditions ii) Physical and cultural heritage iii) The current use of lands and resources for traditional purposes, or iv) Any structure, site or thing that is of historical, archaeological, paleontological or architectural significance	EIS Guidelines, Part 2, 6.4, Mitigation	Chapter 9, Section 9.2.3, Table 10.10, Table 10.14	Use of language such as “where feasible” or “to the extent possible” makes it difficult to determine if and when such mitigation measures will be applied and what will happen should the proposed mitigation measures not be feasible or possible. Examples include: <ul style="list-style-type: none"> • Selection of quarry and borrow areas to avoid sensitive areas (e.g., culturally important sites, wetland areas, wildlife breeding areas) to “the extent feasible” • Using existing access routes, trails or cut lines “to the extent feasible; access routes and trails will be kept as short and narrow as feasible” (p.10-54) • Routing all-season road to avoid areas of high quality habitat where feasible” (p.10-55) In terms of accidental finds, the EIS does not indicate what is required by Manitoba Heritage Resources Branch should previously unknown sites be discovered.	A. In all cases throughout the EIS, indicate the factors that will determine feasibility of a particular mitigation measure and what will be done in those cases where proposed mitigation measures are deemed not to be feasible or possible. B. Discuss what is required by Manitoba Heritage Resources Branch should the proponent make accidental finds of previously unknown cultural or heritage sites or objects.
CEAA-29	5(1)(c) – an effect occurring in Canada of any change that may be caused to the environment on i) Health and socioeconomic conditions ii) Physical and cultural heritage iii) The current use of lands and resources for traditional purposes, or		Chapter 10, Table 10.16, p.	Table (EIS, Table 10.16, p.10-79), suggested that the replacement of the winter road with an all-season gravel road will result in a reduced risk of accidents. The winter road operated for two months per year where the all-season road will be operational year long. The EIS states that “traffic volume on the proposed all-season road is expected to be less than 500 vehicles annually.” Accurate estimates of vehicle travel are needed to assess potential increases in the risk of accidents and malfunctions, increases in wildlife mortality from vehicle collisions), changes in air quality (e.g. in proximity to community receptors near the road), Project greenhouse gas emissions, and potential Project effects on health and socio-economic	A. Provide traffic volume statistics for the winter road operation over a recent period of at least 5 years. B. Discuss how the all-season road traffic volume was estimated C. Reevaluate and report on predicted traffic-related effects for all-VCs, assuming a doubling of predicted traffic volume (i.e. 1000 vehicles annually). <ul style="list-style-type: none"> i. Include predicted effects to air quality (noise, air quality, GHG emissions), mortality effects for wildlife (e.g. moose, boreal woodland caribou, migratory birds, species at risk), effects to health and socio-economic conditions, effects to current use of lands and resources, effects to risk associated with accidents and malfunctions.

IR Number (e.g. HC-IR-01)	Project Effects Link to CEAA 2012	Reference to EIS Guidelines	Reference to EIS	Context and Rationale	Specific Question / Request for Information
				conditions and current uses of lands and resource for traditional purposes.	<ul style="list-style-type: none"> ii. Propose additional mitigation measures and update residual effects analyses and the cumulative effects assessment. iii. Describe potential impact to rights, proposed accommodate measures, and views of groups listed Section 5 of Part 1 of the EIS guidelines on proposed accommodations
Accidents and Malfunctions					
CEAA-30/ ECCC-EE-IR-07	19(1)(a) - accidents and malfunctions 19(1)(b) – significance of effects 5(1)(a)(i),(ii), and (iii) 5(1)(b) 5(1)(c)	EIS Guidelines, Part 2, 6.6.1	Chapter 5.0 - Environmental Protection and Sustainable Development (page 5-12), Chapter 12 - Accidents and Malfunctions (page 12-6, 12-7)	<p>The EIS does not present sufficient detail on worst case scenarios evaluated for the accidents and malfunction events described (Chapter 12, and Table 12.1), including how events and responses made differ between construction and operation phases. Chapter 12 also describes four classes of accidents and malfunctions but Table 12.1 omits one of these, accidental encroachments, from further analysis of potential environmental effects.</p> <p>The EIS does not present sufficient detail on environmental site sensitivities that are to be considered in environmental response plans (Chapter 5), or on how specific environmental site sensitivities associated with the Project’s landscape will modify environmental response plans (e.g. timing, notification to regulators, reporting requirements).</p>	<ul style="list-style-type: none"> A. Revise Table 12.1. Define ratings terms used in Table 12.1 to describe the probability of accident or malfunction after application of preventative / contingency mitigation measures and the evaluation of potential environmental risk. Include all accident and malfunctions described in Chapter 12 (e.g. accidental encroachments). If more than one type of accident or malfunction event falls under a given category of accident or malfunction, include an analysis of the probability of each event. B. Describe worst-case scenarios, and include information on the anticipated effectiveness of mitigation measures proposed and the probability of worst-case scenarios occurring. C. For each possible accident or malfunction event, identify potential environmental effects (as defined in CEAA 2012 section 5), taking into account the varied possible receiving environments throughout the Project area D. Identify the magnitude of an accident or malfunction, including the quantity, mechanism, rate, form and characteristics of the contaminants and other materials likely to be released into the environment during an accident or malfunction event. Assess the potential for adverse environmental effects as defined in section 5 of CEAA 2012.
ECCC-EE-IR-08	19(1)(a) - accidents and malfunctions 19(1)(b) – significance of effects 5(1)(a)(i),(ii), and (iii) 5(1)(b) 5(1)(c)	EIS Guidelines, Part 2, 6.6.1	Chapter 12 - Accidents and Malfunctions	Adequate mitigation measures will lessen the frequency and magnitude of accidents and malfunctions. Contingency and response plans need to be in place to ensure preparedness and effective response in the case of accidents and malfunctions. The EIS does not sufficiently describe the emergency response plans that will be implemented for all phases of the Project.	<ul style="list-style-type: none"> A. Describe the active and passive preventative measures and design safeguards, as well as the emergency response capacities and contingency procedures in place if accidents and/or malfunctions occur. Detailed contingency and response plans should be presented for all phases of the project.
Effects of the Environment on the Project					

IR Number (e.g. HC-IR-01)	Project Effects Link to CEAA 2012	Reference to EIS Guidelines	Reference to EIS	Context and Rationale	Specific Question / Request for Information
CEAA-31	19(1)(h) – change to the project caused by the environment	EIS Guidelines, Part 2, 6.6.1	Chapter 11	<p>The EIS does not describe how the environmental conditions will impact the specific Project components such as camps or quarries. The discussion on flooding only focusses on the proposed mitigation of designing culverts to address a 1:100 year flood.</p> <p>The discussion of climate change does not describe how weather patterns may change and in turn affect the environmental conditions considered in the EIS. There is no discussion of how the adequacy of proposed mitigation measures under climate change scenarios. For example, the EIS states that Project components have been designed to accommodate a 1:100 year flood. The EIS does not describe how climate change may affect the frequency of this size of flood event and whether the mitigation measures proposed would continue to be adequate.</p>	<p>A. For each environmental condition or event considered describe how specific Project components (road, watercourse crossings, quarries, camps, etc.) will potentially be affected and what proposed mitigation measures will be implemented.</p> <p>B. Provide an analysis of the potential effects of climate change on each of the environmental conditions or events considered and subsequent effects on the Project. Identify if additional mitigation measures are required and, if not, provide a rationale.</p>
Cumulative Effects					
CEAA-32/ INAC-01/02	5 – caribou, moose, GHGs 19(a) – cumulative effects 19(b) – significance of effects	EIS Guidelines, Part 2, 6.6.3 (e)	Chapter 13, Appendices 13-1, 13-2, 13-4,	<p>The EIS includes a table in Appendix 13-1 “Scoping of VCs Predicted to Experience Residual Environmental Effects of the Project.” The table only rates two criteria: Spatial Extent of the Residual Effect, and Temporal Extent (Duration) of Residual Effect. This provides only a partial characterization of residual effects by presenting only two criteria. All potential residual effects must be described to determine whether a cumulative effects assessment is required.</p> <p>Where a VC is a species-at-risk, the cumulative effects assessment should be conducted on any adverse residual effects of the Project in combination with any threats to the species-at-risk, as identified in its recovery or action plan. For caribou the cumulative effects assessment only considers changes to habitat. Other potential effects must be included.</p> <p>The EIS describes future physical activities that are certain and reasonably foreseeable in Table 13.1 (p.13-8) and describes several Infrastructure developments. Additional proposed physical activities have been identified by Indigenous and Northern Affairs including:</p> <ul style="list-style-type: none"> Several First Nations located along the southeast of Lake Winnipeg have been in discussion with provincial representatives regarding Forest Management Licence #1. It is reasonably foreseeable that forestry activities could occur within the 	<p>A. Provide an analysis of the significance of the residual adverse environmental effects for the VCs carried through to the cumulative effects assessment of the Project. In addition to the information presented in Appendix 13-1, include an explicit description of the effect levels for magnitude, geographic extent, duration and frequency criteria for each VC to support conclusions of significance.</p> <p>B. Update Appendix 13-1 “Scoping of VCs Predicted to Experience Residual Environmental Effects of the Project” with any VCs where residual effects are identified from additional analysis. Provide a rationale for the omission of a VC from the cumulative effects analysis.</p> <p>C. Where cumulative effects are identified for VCs that were not previously assessed, describe the mitigation measures that will be implemented.</p> <p>D. Include forestry activities that could occur within the temporal boundary for cumulative effects (2000-2037) by First Nation communities and/or business entities in the cumulative effects assessment.</p> <p>E. Include changes to mortality in the cumulative effects assessment for caribou.</p> <p>F. If on-reserve resources are required and residual effects are identified, cumulative effects should be considered and assessed from the following projects:</p>

IR Number (e.g. HC-IR-01)	Project Effects Link to CEAA 2012	Reference to EIS Guidelines	Reference to EIS	Context and Rationale	Specific Question / Request for Information
				<p>temporal boundary for cumulative effects (2000-2037) by First Nation communities and/or business entities.</p> <ul style="list-style-type: none"> • Within the next five (5) years (and potentially beyond that time frame) there will be many infrastructure projects and changes that will be occurring on-reserve in both Berens River and Poplar River FNs. Should the proponent or any contractors or sub-contractors utilize on-reserve resources (e.g., quarry site) or services (e.g., waste disposal, water use, wastewater disposal, equipment and fuel storage, temporary construction camps, etc.) during the temporal timeframe noted for cumulative effects (2000-2037), on-reserve effects should be considered. 	<ul style="list-style-type: none"> i. Berens River: remediation of contamination at the school and maintenance yard, and the construction of a landfarm(s); decommissioning and/or rehabilitation of wharf; construction of community access road to connect to P4; construction of new landfill; airport runway expansion or rehabilitation; and upgrade/rehabilitation of the Berens River bridge. ii. Poplar River: remediation of contamination at the school and maintenance yard, and the construction of a landfarm(s); construction of community access road to connect to P4; and, construction of a new school. <p>G. Describe how the potential creation of Pimachiowin Aki – proposed as a UNESCO World Heritage Site for land including traditional territory of Poplar River First Nation – will affect the cumulative effects assessment.</p> <p>H. Describe potential impact to rights, propose accommodation measures, and describe views of groups listed in Section 5 of Part 1 of the EIS Guidelines on the proposed accommodations.</p>
Follow-up and Monitoring Programs					
CEAA-33	<p>5(1)(a), (b), (c)</p> <p>5(2) – effects also taken into account as a result of a federal authority’s exercise of a power or performance of a duty or function</p> <p>19(1)(a) – cumulative effects 19(1)(a) – accidents and malfunctions 19(1)(b) – significance of effects 19(1)(g) – alternative means and environmental effects of alternative means 19(1)(h) – any change to the project caused by the environment</p>	EIS Guidelines, Part 2, 8.1 and 8.2	<p>Chapter 14</p> <p>Chapter 5</p> <p>Appendix 5-2</p> <p>GR130.15.8.</p>	<p>Chapter 14 and the EIS summary identifies general monitoring and follow-up programs or studies that would be implemented for Caribou, Moose and Furbearers, Fish Habitat, Mapleleaf Mussel, Tourism and Hunting, Trapping, Fishing, and Gathering VCs. These descriptions are very generic. There is no discussion of monitoring or follow-up for migratory birds and avian species of cultural importance.</p> <p>The EIS Chapter 5, Appendix 5-2 is the proponent’s All-Season Road Project Environmental Management Plan Framework (October 2015) which includes a reference to Monitoring and Follow-up Plans to be included in ESRA contracts through General Requirements and the Environmental Protection Procedures:</p> <ul style="list-style-type: none"> • Environmental Management Procedures • Wildlife Monitoring Plan • Aquatic Environment Monitoring Plan (includes water quality, fish passage, fish habitat offsetting, bank stabilization) • Decommissioning Plan related to closure and reclamation of temporary construction facilities and borrow pits 	<ul style="list-style-type: none"> A. Describe the monitoring and follow-up programs for potential effects to migratory birds and wildlife species of cultural significance, including objectives and any monitoring measures (i.e., thresholds) that will be implemented to verify the predictions of effects and evaluate the effectiveness of the proposed mitigation measures. If follow-up programs and management plans are not required, please provide reasoning. B. Describe the valued components for which follow-up is planned, including main characteristics of the studies proposed to evaluate changes to the environment that will affect socio-economic VCs: Tourism and Hunting, Trapping, Fishing, and Gathering. Review IR CEAA-07 on removing ambiguity and strengthening language in proponent commitments. C. Present an outline of the preliminary environmental monitoring program that includes those requirements outlined in the EIS Guidelines, Part 2, Sections 8.1 and 8.2. For plans described in Appendix 5-2 of the EIS, provide outlines and examples of typical content, such as that applied to Project 1, the all-season road

<i>IR Number (e.g. HC-IR-01)</i>	<i>Project Effects Link to CEEA 2012</i>	<i>Reference to EIS Guidelines</i>	<i>Reference to EIS</i>	<i>Context and Rationale</i>	<i>Specific Question / Request for Information</i>
				<ul style="list-style-type: none"> • Winter Road Closure and Reclamation Plan • Emergency Response Plan for environmental accidents and spills. <p>Outlines of these plans are not included in the EIS.</p>	<p>connecting PR304 and Berens River, for Monitoring and Follow-up Plans to be included in ESRA contracts through General Requirements and the Environmental Protection Procedures:</p> <ol style="list-style-type: none"> i. Environmental Management Procedures; ii. Wildlife Monitoring Plan; iii. Aquatic Environment Monitoring Plan (includes water quality, fish passage, fish habitat offsetting, bank stabilization); iv. Decommissioning Plan related to closure and reclamation of temporary construction facilities and borrow pits; v. Winter Road Closure and Reclamation Plan; and vi. Emergency Response Plan for environmental accidents and spills.

Federal Environmental Assessment of Project 4 – All-Season Road Connecting Berens River to Poplar River First Nation

Advice to Proponent from Federal Authorities – Round #1

Reference Number (e.g. HC--01)	Reference to EIS	Context and Rationale	Advice to the Proponent
TC - 01	Section 9.2.3 Mitigation, Page 9-37	To provide clarification with respect to regulatory requirements under the <i>Navigation Protection Act</i> pertaining to proposed culvert crossings.	It is TC's understanding that the Proponent intends to opt-in to the <i>Navigation Protection Act</i> (NPA) for the four river crossings. The proponent indicates that culvert crossings will be in accordance with Transport Canada regulations. It must be noted that unless the Proponent requests to opt-in to the NPA for the culvert crossings, there is no guarantee that those crossings will be "in accordance with Transport Canada regulations".
HC-01	Sections 6.2.1, Figure 6-1, 7.2	Receptor locations	It is important to clearly describe the location and distance from the project site(s) of all potential human receptors (permanent, seasonal or temporary) — taking into consideration the different types of land uses (e.g. residential, recreational, industrial, etc.); and identifying all sensitive receptor locations (e.g. schools, hospitals, retirement complexes or assisted care homes).
HC-02	Sections 7.1.2, 7.3.2	Baseline data and air quality	In order to evaluate potential changes in air quality, it is advisable to consider local, regional, and where appropriate long-range impacts on air quality during all phases of the project. It is advisable to also consider the following: <ul style="list-style-type: none"> • An inventory of all potential contaminants and emissions from the proposed project: criteria air contaminants [i.e. sulphur oxides (SO_x), nitrogen oxides (NO_x), particulate matter (PM) including total PM, PM₁₀, and PM_{2.5}, volatile organic compounds (VOCs), carbon monoxide (CO), ammonia (NH₃), ground-level ozone (O₃), and secondary particulate matter (secondary PM)]; • air pollutants on the List of Toxic Substances in Schedule 1 of the Canadian Environmental Protection Act, 1999; diesel PM; and other possible contaminants; • Information regarding the location of the project and the distance to all potential human receptors for different uses (residential, recreational, etc.) within the area affected by the project; • A characterization of baseline levels of potential contaminants and emissions undergoing further assessment (i.e. pre-project scenario), and a rationale for any project emissions not considered in the assessment; • A comparison of predicted project-related changes in ambient air quality to applicable air quality benchmarks relevant to human health (Canada-wide Standards, National Ambient Air Quality Objectives, provincial regulations, etc.), and a discussion of the potential effects on human health;
HC-03	Section 7.2.3	Mitigation Measures	Attached in a separate document (Commonly Applied Construction Noise Mitigation Measures and Considerations for Noise Reduction) are examples of common and effective noise mitigation measures.

Reference Number (e.g. HC--01)	Reference to EIS	Context and Rationale	Advice to the Proponent
HC-04	Section 7.2.4.3	Noise impacts	<p>In general, with respect to evaluating noise impacts, Health Canada advises that an assessment of noise exposure consider the following:</p> <ul style="list-style-type: none"> • The identification of all potential noise-sensitive receptors and their locations relative to the project area, and the identification of areas in which receptors could be considered to have a reasonable expectation of "peace and quiet" (i.e. "quiet rural areas"). The identification of sensitive receptors may include residences, daycares, school, hospitals, places of worship, nursing homes, and First Nations and Inuit communities; • A delineation of the distance of the project to potential receptors using maps that indicate noise levels at various distances from the project site and identify all affected receptors. If any potential receptors are excluded from the assessment, provide a justification; • The identification/assessment of baseline sound levels (measured or estimated) for both daytime (Ld) and nighttime (Ln) at the receptor locations; • The identification of all potential noise sources during construction, operation and decommissioning (e.g. blasting, traffic, heavy equipment or transformers), and the identification of any tonal (e.g. sirens), low-frequency (e.g. wind turbines), impulsive (e.g. quarry or mining explosions), and highly impulsive (e.g. hammering, pile driving or pavement breaking) types of noise; • A description of the methods (i.e. measured or estimated) used to obtain the baseline and predicted noise levels, including detailed information on how the noise assessment was conducted; • A comparison of baseline noise levels with predicted noise levels at sensitive receptor locations during construction, operation, and/or decommissioning (during daytime and nighttime, and after mitigation, if warranted); • The expected duration of noise due to construction activities (and, if applicable, operation and/or decommissioning activities). Note that Health Canada uses the Alberta Energy and Utilities Board Noise Control Directive 038 (2007) for guidance on whether construction noise should be considered short-term with regard to the prediction of complaint levels; • If construction noise lasts for less than two months at receptors, it may be considered temporary, and community consultation is advised; • For construction noise at receptors with durations of less than one year (i.e. short-term), Health Canada advises that mitigation be proposed if the resulting levels are predicted to result in widespread complaints or a stronger community reaction, based on the U.S. EPA method (U.S. EPA 1974, Michaud et al. 2008); • For construction noise at receptors with durations of more than one year (i.e. long-term), for operational noise, and where noise levels are in the range of 45-75 dB, Health Canada advises that health impact endpoints be evaluated on the change in the percentage of the population (at a specific receptor location) who become highly annoyed (%HA). Health Canada suggests that mitigation be proposed if the predicted change in %HA at a specific receptor is greater than 6.5% between project and baseline noise environments, or when the baseline plus-project-related noise is in excess of 75 dB; • An evaluation of the severity of predicted changes in noise levels and how they may affect human health; • When health effects due to noise are predicted, Health Canada advises the identification of mitigation measures to limit noise, which typically include community consultation programs. In some situations

Reference Number (e.g. HC--01)	Reference to EIS	Context and Rationale	Advice to the Proponent
			<p>where a specific type of mitigation is not technically or economically feasible, community consultation has achieved success in limiting the number of noise-related complaints; and</p> <ul style="list-style-type: none"> • Management and noise monitoring plans, including complaint resolution, if applicable.
DFO-01	Section 5. Appendix 5-4 ESRA's Environmental Protection Specifications, GR130.15.9 Working Within or Near Water, Culvert Maintenance and Replacement Also in Section 3, page 3-12.	The fish passage criteria listed in point 7 is no longer relevant.	DFO has updated criteria for fish passage, as outlined in the draft Fish Swimming Performance User Guide (Gervais and Katopodis, May 2015). The EIS should be updated with the new fish passage criteria and all culverts designed for fish passage should be consistent with the information in this document.
DFO-02	Section 5. Appendix 5-3 ESRA's Environmental Protection Procedures, Working Within or Near Fish Bearing Waters, point 22.	DFO's Operational Statements are no longer applicable for use.	References to Operational Statements should be removed from the EIS. All mitigations in the Operational Statements are included in the Measures to Avoid Causing Harm to Fish and Fish Habitat on DFO's website at http://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures/measures-mesures-eng.html
ECCC-AQ-01	Chapter 7 (Physical Environment) Section 7.2.4.2.1 (Construction Effects and Mitigation)	Burning vegetation can be a potential source of inhalable particulate matter. The proximity of burning activities to local residences is not discussed in the EIS.	Burning of vegetation: The burning of woody debris should be conducted far enough from residences to reduce community members' exposure to smoke.
ECCC-WQ-01	Section 6.1.4 (Groundwater and Surface Water)	Chapter 8 (Aquatic Environment), Section 8.1 (Existing Conditions) and Appendix 8-1 (Aquatic Environment Report)	Three years of data collection is recommended to characterize water and sediment quality.
ECCC-WQ-02	Appendix 8-1 (Aquatic Environmental Report), Section 6.0 (Inspection and Monitoring)	Inspection and monitoring programs are outlined (for pre-construction, construction and post-construction phases) related to the aquatic environment.	This information should be incorporated into project-specific inspection and monitoring plans.
ECCC-WQ-03	Appendix 5-3 (ESRA's Environmental Protection Procedures).	Each of the ESRA Environmental Protection Procedures (EPP) provided in Appendix 5-3 includes a 'Legislation and Supporting Documents' section. The <i>Fisheries Act</i> is not currently referenced in the EPPs. All relevant EPPs should reference the <i>Fisheries Act</i> , including but not limited to the following EPPs: 'Working within or near fish bearing waters', 'Stream Crossings', and 'Erosion and Sediment Control'.	Review all EPP documents, and update the legislation sections as required to ensure that the federal <i>Fisheries Act</i> is referenced in all applicable EPPs.

<i>Reference Number (e.g. HC--01)</i>	<i>Reference to EIS</i>	<i>Context and Rationale</i>	<i>Advice to the Proponent</i>
ECCC-WQ-04	Chapter 1, Table 1.4.1.2 (Other Federal Regulatory Approvals and Legislation)		<p>Table 1.4.1.2, Other Federal Regulatory Approvals and Legislation, from Chapter 1 of the EIS should incorporate the following additional bullets:</p> <ul style="list-style-type: none"> • The <i>Fisheries Act</i> prohibits the deposit of deleterious substances to fish-bearing waters. • The project should employ effective prevention and mitigation to avoid such deposits, including with respect to: erosion and sedimentation, metal leaching, acid rock drainage, ammonia explosives, concrete work, fuels, road salts, wastes, and hazardous substances/materials.
INAC-01	Chapter 10, Section 10.1.3, pages 10-6 to 10-8.	<p>Within this section the population statistics for the First Nation communities are provided from 2011 (Statistics Canada) and 2014 (SERDC). INAC has 2016 population statistics available that would provide a more realistic portrayal of community populations and growth.</p>	<p>ESRA can contact INAC to obtain information from the Indian Registry System.</p>

See enclosed document provided by Health Canada: *Commonly Applied Construction Noise Mitigation Measures and Considerations for Noise Reduction*, adapted from the New South Wales Construction Noise Guideline (August 2008 draft for consultation), Department of Environment and Climate Change, New South Wales, Australia.

Commonly Applied Construction Noise Mitigation Measures and Considerations for Noise Reduction

The measures below have been adapted from the New South Wales Construction Noise Guideline (August 2008 draft for consultation), Department of Environment and Climate Change, New South Wales, Australia.

General Mitigation Measures

- Include in tenders, employment contracts, subcontractor agreements and work method statements clauses that assure the minimization of noise and compliance with directions from management to minimize noise.
- Give preference to the use quieter technology or other mitigation measures rather than lengthening construction duration (i.e. it is not recommended to lower noise by having fewer pieces of equipment running at a time thereby leading to extended construction duration).
- Regularly train workers and contractors (such as at toolbox talks) to use equipment in ways that minimize noise.
- Ensure that site managers periodically check the site, nearby residences and other sensitive receptors for noise problems so that solutions can be quickly applied.
- Avoid the use of radios and stereos outdoors and the overuse of public address systems where neighbours can be affected.
- Avoid shouting, and minimize talking loudly and slamming vehicle doors.
- Keep truck drivers informed of designated vehicle routes, parking locations, acceptable delivery hours and other relevant practices (e.g. minimizing the use of engine brakes and periods of engine idling).

Night-time Mitigation Measures

- Avoid the use of equipment that generates impulsive noise.
- Minimize the need for reversing alarms.
- Avoid dropping materials from a height.
- Avoid metal-to-metal contact on equipment.
- If possible, schedule truck movements to avoid residential streets.
- Avoid mobile plant clustering near residences and other sensitive receptors.
- Ensure that periods of respite are provided in the case of unavoidable maximum noise level events.

Consultation and Notification

The community is more likely to be understanding and accepting of project noise if related information is provided and is frank, and does not attempt to understate the likely noise level, and if commitments are respected.

Notification Before and During Construction

Provide advance notification to people concerning construction duration, defining activities that are expected to be noisy and their expected duration, what noise mitigation measures are being applied, and when noise respite periods will occur.

For night-time work, receptors may be informed in two stages: two weeks prior to construction and then two days before commencement.

Provide information to neighbours before and during construction through media such as letterbox drops, meetings or individual consultation. In some areas, the need to provide notification in languages other than English may be considered. A Web site may also be established for the project.

Use a site information board at the front of the site with contact details, hours of operation and regular information updates.

Facilitate contact with people to ensure that everyone can see that the site manager understands potential issues, that a planned approach is in place, and that there is an ongoing commitment to minimize noise.

Plant and Equipment

In terms of both cost and results, controlling noise at the source is one of the most effective methods of minimizing the noise impacts from any construction activities.

Quieter Methods

Examine and implement, where feasible and reasonable, alternatives to rock-breaking work methods such as hydraulic splitters for rock and concrete, hydraulic jaw crushers, chemical rock and concrete splitting, and controlled blasting such as penetrating cone fracture.

Consider alternatives to diesel and gasoline engines and pneumatic units such as hydraulic or electric-controlled units where feasible and reasonable. When there is no electricity supply, consider using an electrical generator located away from residences.

Examine and implement, where feasible and reasonable, alternatives to transporting excavated material from underground tunnelling off-site at night-time. (i.e. stockpile material in an acoustically treated shed during the night and load out the following day).

Examine and implement, where feasible and reasonable, alternatives to pile driving using a diesel hammer, such as hydraulic hammer, hydraulic press-in, or vibratory pile driver.

To reduce the impact of backup alarms, examine and consider implementing, where feasible and reasonable, ambient sensitive backup alarms, signal workers, turning circles and side loading/unloading trucks.

Quieter Equipment

Examine different types of machines that perform the same function and compare the noise level data to select the least noisy machine (i.e. rubber-wheeled tractors can be less noisy than steel-tracked tractors).

Pneumatic equipment is traditionally a problem. Consider selecting super-silenced compressors, silenced jackhammers and damped bits where possible.

When renting (or purchasing) equipment, select quieter pieces of plant and construction equipment where feasible and reasonable. As well, select the most effective mufflers, enclosures and low-noise tool bits and blades. Always seek the manufacturer's advice before making modifications to any equipment to reduce noise.

Reduce throttle settings and turn off equipment when it is not being used.

Examine and consider implementing, where feasible and reasonable, the option of reducing noise from metal chutes and bins by placing damping material in the bin.

Equipment Maintenance

Regularly inspect and maintain equipment to ensure that it is in good working order, including the condition of mufflers.

For machines with enclosures, verify that doors and door seals are in good working order and that the doors close properly against the seals.

Return any leased equipment that is causing noise that is not typical for the equipment. The increased noise may indicate the need for repair.

Ensure that air lines on pneumatic equipment do not leak.

Site Mitigation Measures

Barriers and acoustic sheds are most suited to long-term fixed works as in these cases, the associated cost is typically outweighed by the overall time savings.

Plant Location

Place as much distance as possible between the plant or equipment and residences and other sensitive receptors.

Restrict areas in which mobile plants can operate so that they are away from residences and other sensitive receptors at particular times.

Locate site vehicle entrances away from residences and other sensitive receptors.

Carry out noisy fabrication work at another site (e.g. within enclosed factory premises) and then transport products to the project site.

Alternatives to Reversing Alarms

Avoid the use of reversing alarms by designing the site layout to avoid reversing, such as by including drive-through for parking and deliveries.

When applicable legislation permits, consider less annoying alternatives to the typical ‘beeper’ alarms. Examples include smart alarms that are adjustable in volume depending on the ambient level of noise, and multi-frequency alarms that emit noise over a wide range of frequencies.

Maximize Shielding

Re-use existing structures rather than demolishing and reconstructing.

Use full enclosures, such as large sheds, with good seals fitted to doors to control noise from night-time work.

Use temporary site buildings and material stockpiles as noise barriers.

Schedule the construction of permanent walls so that they can be used as noise barriers as early as possible.

Use natural landform as a noise barrier. Place fixed equipment in cuttings or behind earth berms.

Take note of large reflecting surfaces on- and off-site that might increase noise levels, and avoid placing noise-producing equipment in locations where reflected noise will increase noise exposure or reduce the effectiveness of mitigation measures.

Work Scheduling

Schedule noisy work during periods when people are least affected.

Provide Respite Periods

Consult with schools to ensure that noise-generating construction works in the vicinity are not scheduled to occur during examination periods, unless other acceptable arrangements (such as relocation) can be made.

When night work near residences cannot be feasibly or reasonably avoided, restrict the number of nights per week and/or per calendar month that the work is undertaken.

Schedule Activities to Minimize Noise Impacts

Organize work to be undertaken during the recommended standard hours where possible.

If the construction site is in the vicinity of a sports venue, consider scheduling work to avoid times when there are special events.

When work outside the recommended standard hours is planned, avoid scheduling it on Sundays or public holidays.

Schedule work when neighbours are not present (e.g. commercial neighbours, college students and school students may not be present outside business hours or on weekends).

Schedule noisy activities around times of high background noise (i.e. when local road traffic or other local noise sources are active) where possible to provide masking or to reduce the amount that the construction noise intrudes above the background noise.

Deliveries and Access

Nominate an off-site truck parking area away from residences for trucks arriving prior to gates opening and schedule deliveries only during specified periods.

Optimize the number of vehicle trips to and from the site. Movements can be organized to amalgamate loads rather than using a number of vehicles with smaller loads.

Designate access routes to the site through consultation with potentially noise-affected residences and other sensitive receptors, and inform drivers of nominated vehicle routes.

Provide on-site parking for staff and on-site truck waiting areas away from residences and other sensitive receptors. Truck waiting areas may require walls or other barriers to minimize noise.

Noise Transmission Path

Physical methods to reduce the transmission of noise between construction locations and residences or other sensitive receptors are generally suited to construction projects in which there is long-term noise exposure.

Reduce the line-of-sight noise transmission to residences and other sensitive receptors using temporary noise barriers.

Temporary noise barriers can be constructed from boarding (plywood boards, panels of steel sheeting or compressed fibre cement board) with no gaps between the panels at the site boundary. Stockpiles and shipping containers can be effective noise barriers.

Erect temporary noise barriers before work commences to reduce noise from construction as soon as possible.

Where high-rise dwellings adjoin the construction site, the height of a barrier may not be sufficient to effectively shield the upper levels of the residential building from construction noise. Find out whether this is a consideration for the project and examine alternative mitigation measures where needed.