Appendix 13-2

VC Screening for Cumulative Effects Analysis

Appendix 13-2: VC Screening for Cumulative Effects Analysis

Valued Component	Cumulative Effects Analysis Screening Summary[i]	VC Carried Forward for Further Cumulative Effects Analysis?[ii]
	Example Screening Criteria: • **Potential for significant adverse cumulative effects to the VC** • **Feedback from the APEP** • **Level of uncertainty in predictions of cumulative effects** • **Need for additional mitigation measures or follow-up**	
Surface Water	The application of standard mitigation measures and best management practices will minimize potential adverse effects on surface water of this Project combined with past, present and future projects. No significant adverse effects are predicted from the Project construction or operation. Feedback from the APEP centred on the importance of effective mitigation measures during construction. Potential cumulative effects on surface water are generally understood and predictable. No additional mitigation measures or follow-up beyond what is proposed for this Project (**Chapter 14**) is required.	**No**
Air Quality	The application of standard mitigation measures and best management practices will minimize potential adverse effects of the proposed Project on air quality. Other physical activities may result in adverse environmental effects on air quality. A short-term increase of greenhouse gases, including contributions from this Project combined with past, present and future projects within the spatial and temporal boundaries of the cumulative effects assessment study area, is expected to result from Project construction. The increase is not expected to result in significant adverse cumulative effects. A reduction in greenhouse gases is predicted over the long-term. The federal government is committed to developing a framework for combating climate change therefore thorough federal review of physical activities that contribute to greenhouse gas emissions is expected to be a priority.	**Yes – see Section 13.3.1 for further cumulative effects analysis**
Noise and Vibration	The application of standard mitigation measures and best management practices will minimize potential adverse effects of the proposed Project on noise and vibration. APEP feedback was associated with potential short-term noise effects of blasting on wildlife. Residual adverse environmental effects of noise and vibration from this Project and other past, present or future physical activities are expected to be localized, generally understood and predictable, and not expected to result in significant adverse cumulative environmental effects. No additional mitigation measures or follow-up beyond what is proposed for this Project (**Chapter 14**) is required to reduce the potential for significant adverse cumulative environmental effects from noise and vibration.	**No**
Fish Habitat	The CEA Agency Guidelines for this Project (CEA Agency 2015) request that fish habitat be considered, which is reflected in this VC scoping process. The application of standard mitigation measures and best management practices will minimize potential adverse effects of the proposed Project on fish habitat. Other physical activities may result in adverse environmental effects on fish habitat. Residual adverse effects on fish habitat from this Project and other past, present or future physical activities are expected to be localized, generally understood and predictable, and not expected to result in significant adverse cumulative environmental effects on the watershed. Should Fisheries and Oceans Canada determine that fish habitat offsetting is required for this Project and other present and future physical activities, fish habitat constructed to offset habitat losses will require monitoring to determine habitat performance. Should habitat performance fall below requirements, adaptive management/additional compensation measures may be required.	**No**
Fish and Harvested Fish	The CEA Agency Guidelines for this Project (CEA Agency 2015a) request that fish (including valued fish species) be considered, which is reflected in this VC scoping process. The application of standard mitigation measures and best management practices will minimize potential adverse effects of the proposed Project on harvested fish species. Potential adverse effects to harvested fish species due to increased access to watercourses was noted in feedback from the APEP. The past present and future projects, combined with this Project, are not anticipated to result in significant adverse cumulative effects on harvested fish species considering access to fish-bearing watercourses will not be extensive within the cumulative effects assessment area, boat launch sites will not be constructed as part of any physical activities for past, present and future physical activities and provincial government-regulated limits on fish harvesting will minimize potential adverse	**No**

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	cumulative effects on harvested fish species. Potential cumulative effects to harvested fish species are also directly linked to potential cumulative effects on fish habitat. As indicated above for the 'fish habitat' VC, the potential for significant adverse cumulative effects to fish habitat will be prevented through the application of standard mitigation measures, best management practices, and fish habitat offsetting and monitoring that may be required by Fisheries and Oceans Canada. Prior to fish habitat offsetting measures, the potential for significant adverse effects to fish habitat (and associated effects to fish and harvest fish) is considered low due to the minimal amount of fish habitat that will be permanently altered or destroyed (maximum of 206.5 m^2 of instream habitat and 180 m of riparian zone habitat).	
Aquatic Species at Risk	The CEA Agency Guidelines for this Project (CEA Agency 2015a) request that Species at Risk be considered, which is reflected in this VC scoping process. The application of standard mitigation measures and best management practices will minimize potential adverse effects of the proposed Project on fish Species at Risk (i.e., lake sturgeon and mapleleaf mussel). Other physical activities may result in some potential adverse effects on fish Species at Risk. The past, present and future projects, combined with this Project, are not anticipated to result in significant adverse cumulative effects on fish Species at Risk considering access to fish-bearing watercourses known to support fish Species at Risk (i.e., Berens River and Poplar River) will not be extensive within the cumulative effects assessment area, boat launch sites will not be constructed as part of any physical activities for past, present and future physical activities and legislation protecting fish Species at Risk will minimize potential adverse cumulative effects on fish Species at Risk. Harvest of lake sturgeon by recreational and commercial fishers is prohibited and subsistence harvest is effectively managed by MCWS (MCWS 2012a). No additional mitigation measures or follow-up beyond what is proposed for this Project (**Chapter 14**) is required.	**No**
Vegetation Communities	The application of standard mitigation measures and best management practices will minimize potential adverse effects of the proposed Project on vegetation communities. Residual adverse environmental effects from this Project and other past, present or future physical activities are expected to be minimal, localized and are not expected to result in significant adverse cumulative effects to vegetation communities. Additional mitigation measures or follow-up beyond what is proposed for this Project (**Chapter 14**) are not required to reduce the potential for significant adverse cumulative effects to vegetative communities.	**No**
Plant Species of Cultural Importance	The CEA Agency Guidelines for this Project (CEA Agency 2015a) request that Species at Risk (which includes Plant Species of Cultural Importance) be considered, which is reflected in this VC scoping process. The application of standard mitigation measures and best management practices will minimize potential adverse effects of the proposed Project on plant species of cultural importance. Residual adverse environmental effects from this Project and other past, present or future physical activities are expected to be minimal, localized and are not expected to result in significant adverse cumulative effects to plant species of cultural importance. Additional mitigation measures or follow-up beyond what is proposed for this Project (**Chapter 14**) are not required to reduce the potential for significant adverse cumulative effects to plant species of cultural importance.	**No**
Ungulate: Moose	Although mitigation measures, best management practices and provincial hunting regulations will minimize potential adverse effects on moose, other physical activities may result in additional residual effects to moose. Potential adverse effects to moose due to increased access to the cumulative effects assessment area resulting in increased moose hunting opportunities and protection of moose habitat was noted in feedback from the APEP. Residual adverse cumulative effects on the moose population within the cumulative effects assessment area from this Project and other past, present or future physical activities are not expected to result in a significant decline in the regional moose population. Moose densities in the RAA are inherently low compared to densities reported in Game Hunting Areas to the south and the majority of the regional area will remain relatively remote even with the existing winter road being replaced with the planned all-season	**Yes - see Section 13.3.2 for cumulative effects analysis**

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	roads east of Lake Winnipeg. Additional rationale is provided by Joro Consultants (2015a) (**Chapter 9, Appendix 9-1**). The level of uncertainty regarding cumulative effects too moose is not considered high. However, effective management of moose populations are dependent on the expected implementation of Manitoba Conservation and Water Stewardship's (MCWS) cooperative moose conservation initiatives and measures for the regional area, as required. Additional mitigation measures or follow-up beyond what is proposed for this Project (**Chapter 14**) are not required to reduce the potential for significant adverse cumulative effects to moose. Specific Moose monitoring and follow-up activities will be determined with MCWS.	
Ungulate: Boreal Woodland Caribou	Although mitigation measures, best management practices, legislative protection and Manitoba's Boreal Woodland Caribou Recovery Strategy will minimize potential adverse effects on caribou, other physical activities may result in additional residual effects to caribou. Protection of caribou habitat was noted in feedback from the APEP (**Chapter 4**) and is a provincial government priority as per Manitoba's Boreal Woodland Caribou Recovery Strategy. The CEA Agency Guidelines for this Project (CEA Agency 2015a) request that Species at Risk be considered, which includes boreal woodland caribou, and is reflected in this VC scoping process. Residual adverse cumulative effects on the caribou population within the cumulative effects assessment area from this Project and other past, present or future physical activities are not expected to result in a significant decline in the regional caribou population considering the total cumulative caribou habitat disturbance is estimated to be below the 35% disturbance threshold identified by Environment Canada (2012). Additional rationale is provided by Joro Consultants (2015a) (**Chapter 9, Appendix 9-1**). The level of uncertainty is not considered high due to the legislative protection status and recovery strategy for this Species at Risk, and minimal observed effects of existing linear disturbances (including the existing winter road) east of Lake Winnipeg on caribou. Additional rationale is provided by Joro Consultants (2015a) (**Chapter 9, Appendix 9-1**). Additional mitigation measures or follow-up beyond what is proposed for this Project (**Chapter 14**) are not required to reduce the potential for significant adverse cumulative effects to caribou. Specific caribou monitoring and follow-up activities will be determined with Manitoba Conservation and Water Stewardship (MCWS).	**Yes - see Section 13.3.3 for cumulative effects analysis**
Furbearer: Beaver	The application of mitigation measures, best management practices and provincial trapping regulations will minimize potential adverse effects to beavers from this Project and other past, present or future physical activities. Residual adverse cumulative effects on the beaver population within the cumulative effects assessment area are not expected to result in a significant decline in the regional beaver population primarily due to government regulation of fur trapping, and beaver habitat is not limited in the regional area (**Chapter 9**). The level of uncertainty is not considered high regarding the potential for significant adverse cumulative effects to beaver due to past, present and future projects. Additional mitigation measures or follow-up beyond what is proposed for this Project (**Chapter 14**) are not required to reduce the potential for significant adverse cumulative effects to beaver.	**No**
Furbearer: Marten	The application of mitigation measures, best management practices and provincial trapping regulations will minimize potential adverse effects to marten from this Project and other past, present or future physical activities. Residual adverse cumulative effects on the martin population within the cumulative effects assessment area are not expected to result in a significant decline in the regional martin population primarily due to government regulation of fur trapping, and martin habitat is not limited in the regional area (**Chapter 9**). The level of uncertainty is not considered high regarding the potential for significant adverse cumulative effects to martin due to past, present and future projects. Additional mitigation measures or follow-up beyond what is proposed for this Project (**Chapter 14**) are not required to reduce the potential for significant adverse cumulative effects to martin.	**No**
Migratory	The CEA Agency Guidelines for this Project (CEA Agency 2015a) request that migratory birds including Species at Risk be considered, which is	**No**

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Birds: Forest Birds	reflected in this VC scoping process. The application of mitigation measures and best management practices will minimize potential adverse effects on forest birds. However, this project combined with other past, present and future physical activities may result in additional disturbances to forest birds and loss or disturbance of forest bird habitat. Residual adverse cumulative effects on forest bird populations within the cumulative effects assessment area from this Project and other past, present or future physical activities are not expected to result in a significant decline in the regional forest bird populations primarily due to the limited scope and scale of past, present and future physical activities in terms of forest bird habitat loss (e.g., < 5% in the P4 Project Local Assessment Area; **Chapter 9**) and the amount of habitat gain due to the reclamation of winter roads in the cumulative assessment area (Joro Consultants 2015a). Additional mitigation measures or follow-up beyond what is proposed for this Project (**Chapter 14**) are not required to reduce the potential for significant adverse cumulative effects to forest birds.	
Migratory Birds: Waterbirds	The CEA Agency Guidelines for this Project (CEA Agency 2015a) request that migratory birds be considered, which is reflected in this VC scoping process. The application of mitigation measures and best management practices will minimize potential adverse effects on waterbirds. However, this project combined with other past, present and future physical activities may result in additional disturbances to waterbirds and loss or disturbance to waterbird habitat. Residual adverse cumulative effects on waterbird populations within the cumulative effects assessment area from this Project and other past, present or future physical activities are not expected to result in a significant decline in regional waterbird populations primarily due to the limited scope and scale of past, present and future physical activities in terms of waterbird habitat loss (e.g., < 2% in the P4 Project Local Assessment Area; **Chapter 9**) and the amount of habitat gain due to the reclamation of winter roads in the cumulative assessment area (Joro Consultants 2015a). Additional mitigation measures or follow-up beyond what is proposed for this Project (**Chapter 14**) are not required to reduce the potential for significant adverse cumulative effects to waterbirds.	**No**
Ecologically Sensitive Wildlife Sites: bat and snake hibernacula; terrestrial mammal dens; rookeries; large stick nests; and mineral licks	The CEA Agency Guidelines for this Project (CEA Agency 2015a) request that ecologically sensitive wildlife sites as they relate to migratory birds and Species at Risk be considered, which is reflected in this VC scoping process. The application of mitigation measures and best management practices (such as conducting pre-construction surveys [described in **Chapter 9, Section 9.2.5.7**]) will minimize potential adverse effects on ecologically sensitive wildlife sites. Other physical activities may result in additional disturbances to ecologically sensitive wildlife sites. Residual adverse cumulative effects to ecologically sensitive wildlife sites within the cumulative effects assessment area from this Project and other past, present or future physical activities are not expected to result in either a significant decline in those sites or decline in the species utilizing those sites. This conclusion is primarily based on either the low probability of the presence of such sites in the cumulative effects assessment area, or alternate habitat is available for the species that use these sites (**Chapter 9**). Additional mitigation measures or follow-up beyond what is proposed for this Project (**Chapter 14**) are not required to reduce the potential for significant adverse cumulative effects to ecologically sensitive wildlife sites.	**No**
Herptile Species at Risk	The CEA Agency Guidelines for this Project (CEA Agency 2015a) request that Species at Risk be considered, which is reflected in this VC scoping process. The application of mitigation measures, best management practices and legislation protecting Species at Risk will minimize potential adverse effects on amphibian and reptile (i.e. herptile) Species at Risk potentially occurring in the cumulative effects assessment area (i.e., common snapping turtle). Other physical activities may result in some potential adverse effects on this Species at Risk. The past present and future projects, combined with this Project, are not anticipated to result in significant adverse cumulative effects on herptile Species at Risk considering that watercourse and wetland habitat for these species is not limited in the cumulative effects assessment area	**No**

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	and legislation protecting Species at Risk will minimize potential adverse cumulative effects on herptile Species at Risk. Additional mitigation measures or follow-up beyond what is proposed for this Project (**Chapter 14**) are not required to reduce the potential for significant adverse cumulative effects to herptile Species at Risk.	
Hunting, Trapping, Fishing and Gathering	The application of mitigation measures and best management practices, including Manitoba Conservation and Water Stewardship's (MCWS) cooperative moose conservation initiatives, will be applied to minimize adverse effects to: wildlife species that are hunted (e.g., moose) and trapped (e.g., marten), vegetation species that are gathered (e.g., blueberries), and harvested fish species (e.g., walleye, including maintaining access to areas where these traditional resource use activities take place. ESRA will discuss the timing of clearing and construction with the trapper(s) maintaining the trapline intersected by the all-season road to agree on feasible mitigation methods to avoid unacceptable adverse economic effects potentially related to decreased trapping success.Additional mitigation measures or follow-up beyond what is proposed for this Project (**Chapter 14**) are not required to reduce the potential for significant adverse cumulative environmental effects on hunting, trapping, fishing and gathering.	**No**
Travel Routes	The application of mitigation measures and best management practices will be applied to minimize adverse effects to travel routes such as navigable waterways (e.g., crossing structures that allow for navigation of watercraft). Other physical activities may result in potential adverse effects on travel routes. Minor alterations in travel routes resulting from this Project combined with past, present and future projects within the spatial and temporal boundaries of this cumulative effects assessment are not expected to result in significant adverse cumulative effects. Potential adverse effects on travel routes other past, present or future physical activities are expected to be understood and predictable as is the case with this Project. Additional mitigation measures or follow-up beyond what is proposed for this Project (**Chapter 14**) are not required to reduce the potential for significant adverse cumulative environmental effects on travel routes.	**No**
Cultural, Heritage and Archaeological Resources	Pre-construction surveys and Aboriginal and public engagement has identified known cultural, heritage and archaeological resources so they can be avoided and/or protected. Other physical activities may result in some potential adverse effects on this VC. The potential for significant residual adverse effects on cultural, heritage and archaeological resources from this Project and other past, present or future physical activities are not expected considering the location of such sites are typically known, or the potential presence of unknown sites (e.g., archaeological sites) can be predicted with reasonable accuracy based on terrain features and historical records (AMEC Foster Wheeler 2015a,b,c). Potential sites can be investigated to confirm the presence of these sites prior to commencement of physical activities. Therefore, the level of uncertainty regarding potential adverse cumulative effects on this VC is not considered high. Additional mitigation measures or follow-up beyond what is proposed for this Project (**Chapter 14**) are not required to reduce the potential for significant adverse cumulative environmental effects on cultural, heritage and archaeological resources.	**No**
Human Health	The application of mitigation measures and best management practices will be applied to minimize adverse effects to human health of road users. Other physical activities may result in potential adverse effects on human health. Minor risks associated with all-season road travel resulting from this Project combined with past, present and future projects within the spatial and temporal boundaries of this cumulative effects assessment are not expected to result in significant adverse cumulative effects. Potential adverse effects on human health of other past, present or future physical activities are expected to be understood and predictable as is the case with this Project. Additional mitigation measures or follow-up beyond what is proposed for this Project (**Chapter 14**) are not required to reduce the potential for significant adverse cumulative environmental effects on human health of road users.	**No**

[i] Refer to **Section 13.2.1** for a description of the VC scoping and screening process
[ii] Refer to **Section 13.3** for the analyses of cumulative effects on VCs that have been carried forward for cumulative effects analyses.