

Appendix 13-4

VCs Potentially Affected by Past, Existing and Future Physical Activities

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Physical Activities	Valued Components Carried Forward for Cumulative Effects Analysis			Physical Activity Carried Forward due to Expected Adverse Cumulative Effects on VCs?
	Air Quality (Greenhouse Gases)	Moose	Boreal Woodland Caribou	
ESRA's P1 all-season road project from PR 304 to Berens River communities.	✓	✓	✓	Yes - The P1 all-season road is currently under construction and has the potential to affect these VCs within the spatial and temporal boundaries defined for this cumulative effects analysis. Considering the similarities of these two road projects (Project Description Chapter 3), similar effects pathways are predicted for the P4 all-season road as were predicted for the P1 all-season road project. Therefore, the environmental effects of the P1 all-season road will be considered further in the cumulative effects analysis (Section 13.3).
Existing infrastructures within and immediately adjacent to First Nation communities within the cumulative effects spatial boundary.	✓	✓	✓	Yes – The existing infrastructure for Berens River First Nation and Poplar River First Nation communities has influenced each VC through pathways such as: removal of habitat and sensory disturbance to moose and caribou; increased greenhouse gases through vehicle and machinery use in the communities; and increased/convenient fishing opportunities at the watercourses within each community. Therefore, the environmental effects of the existing infrastructure within and immediately adjacent to the First Nation communities will be considered further in the cumulative effects analysis (Section 13.3).
Existing winter road use and maintenance.	✓	✓	✓	Yes - The existing winter road network will continue to contribute to greenhouse gas emissions, and influence moose and caribou (e.g., through sensory disturbance, habitat alteration/loss, access for hunters), until such time as the winter roads are decommissioned in sequence with the completion of the future east side all-season roads. Therefore, the existing winter roads and their use/maintenance will be considered further in the cumulative effects analysis on greenhouse gas emissions and cumulative effects on moose and caribou (Section 13.3). The influence of the winter road on commercial fishing and effects to harvested fish populations is not considered due to the commercial fishing operations in the area being considered an 'open water' fishery with fish caught in the area being delivered by boat to Matheson Island for delivery by truck to the Freshwater Fish Marketing Corporation Transcona plant in Winnipeg (MCWS 2013b).
Past forestry roads.		✓	✓	Yes – Considering previously established forestry roads are no longer used for commercial forestry activities, are largely abandoned (in varying states of natural revegetation) and may be accessed to a limited extent by snowmobile and/or ATV, the past forestry roads will continue to influence moose and caribou (e.g., through sensory disturbance, habitat alteration/loss, access for hunters/predators) within the spatial and temporal boundaries of this cumulative effects assessment. These past forestry roads may also be used to access watercourses for fishing. However, accurate information

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				regarding the extent of vehicle use and type of vehicle use of these past forestry roads is not available due to the largely abandoned condition of these former roads and expected minimal vehicle use of these former roads. Therefore potential cumulative effects of vehicle use of past forestry roads and resulting greenhouse gas emissions is not assessed. The past forestry roads will be considered further in the cumulative effects analysis for moose, caribou and harvested fish (Section 13.3).
Mining and quarry activities		✓	✓	Yes – Mining, mineral exploration activities and quarry activities will continue to result in site-specific and occasional disturbance to moose and caribou that may be within the vicinity of activities when they are occurring. Use of existing and future roads and other modes of transportation for various purposes, including mining and quarry related activities, are considered in the cumulative contributions to greenhouse gases.
Manitoba Hydro transmission lines.		✓	✓	Yes – The existing transmission line corridors potentially provide access to hunters using snowmobiles or ATVs and will continue to influence moose and caribou (e.g., through sensory disturbance, habitat alteration/loss, access for hunters/predators) within the spatial and temporal boundaries of this cumulative effects assessment. However, information regarding the extent of vehicle use and type of vehicle use of transmission line corridors is not available due to undocumented vehicle use of the corridors which are not intended for vehicle use. Therefore potential cumulative effects of vehicle use of transmission line corridors and resulting greenhouse gas accumulation is not assessed. No information is available regarding the use of transmission line corridors to access watercourses for fishing; however, fishing opportunities at the easily accessible Poplar and Berens rivers adjacent to the communities and future access to other fish-bearing watercourses via future all-season roads are expected to be the primary influences on harvested fish species in the cumulative effects assessment area compared to potential use of transmission line corridors to access fishing sites. Therefore, hydro transmission line corridors are not carried forward in the consideration of cumulative effects to harvested fish species. The potential effects of transmission line corridors will be considered further in the cumulative effects analysis for moose and caribou (Section 13.3).
Traditional/subsistence and licenced hunting activities (past, present and future).	✓	✓	✓	Yes - Past, present and future traditional/subsistence and licenced hunting activities have influenced and will continue to influence moose and caribou populations within the spatial and temporal boundaries of this cumulative effects assessment. Use of existing and future roads, and other modes of transportation for various purposes (e.g., hunting) are considered in the cumulative contributions to greenhouse gases. Therefore, past, present and future traditional/subsistence and licenced hunting activities are considered in the assessment of these VCs in Section 13.3 .

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Licensed trapping of furbearing animals for commercial sale (past, present and future).	✓			Yes – The activity of licensed trapping of furbearing animals for commercial sale is being considered with respect to the estimated contributions to greenhouse gases from various modes of transportation to carry-out various activities such as access to trapping areas and transportation of fur to commercial/distribution centres. Therefore, the activity of licensed trapping of furbearing animals for commercial sale in terms of greenhouse gas emitting modes of transportation required to carry out this activity is considered in the assessment of this VC in Section 13.3 .
Traditional/subsistence, sport and commercial fishing (past, present and future).	✓	✓		Yes – The activity of traditional/subsistence, sport and commercial fishing is being considered with respect to expected effects to harvested fish populations and the estimated contributions to greenhouse gases from various modes of transportation to carry-out various activities such as access to fishing areas and transportation of fish to commercial/distribution centres. Therefore, the activity of commercial and non-commercial (subsistence and sport) fishing is considered in the assessment of the cumulative contributions to greenhouse gases and cumulative effects to harvested fish populations in Section 13.3 .
Planned all-season roads east of Lake Winnipeg as part of the Large Area Transportation Network initiative by ESRA.	✓	✓	✓	Yes - The planned all-season roads east of Lake Winnipeg have the potential to affect these VCs within the spatial and temporal boundaries defined for this cumulative effects analysis. Considering the similarities of these future road projects in terms of potential environmental effects, similar effects pathways are predicted for the future all-season roads as were predicted for the P4 all-season road Project. Therefore, the environmental effects of the future all-season roads will be considered further in the cumulative effects analysis (Section 13.3).
Future Poplar River First Nation community access road (433 m) linking the proposed Project with the community.	✓		✓	Yes - The planned Poplar River First Nation community access road (433 m) linking the proposed Project with the community will have a minor contribution to the loss of moose and caribou habitat and potential sensory disturbance to moose and caribou. Therefore this small future road segment is considered in the cumulative effects analysis on moose and caribou (Sections 13.3.3 and 13.3.4). Future vehicle use of this community access road is assessed in terms of the overall estimated contribution to greenhouse gas emissions by vehicle use (Section 13.3.1). The planned community access road does not cross fish-bearing streams. Therefore, no cumulative effects to harvested fish species are anticipated to result from the construction and operation of this future community access road.
Future Poplar River community airport.	✓		✓	Yes - The planned Poplar River community airport is considered in terms of expected change in air travel compared to future all-season road use and implications to expected changes to greenhouse gas emissions within the spatial and temporal cumulative effects assessment boundaries (Section 13.3.1). The construction and

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				operation of the airport adjacent to Poplar River First Nation is anticipated to result in minor contributions to the overall cumulative effects of physical activities on moose and caribou within the spatial and temporal cumulative effects assessment boundaries (Section 13.3)
Decommissioning and rehabilitation, as required, of existing network of winter roads not required after the construction of planned all-season roads east of Lake Winnipeg as part of the Large Area Transportation Network initiative by ESRA.	✓	✓	✓	Yes – Although the future decommissioning of the existing network of winter roads is not considered to have adverse environmental effects, the resulting reestablishment of natural vegetation within former winter road corridors and cessation of the annual cycle of sedimentation of watercourses as the winter roads are recreated is considered in the cumulative effects assessment for harvested fish species, moose and caribou (e.g., change/improvement in available habitat). The change in vehicle use from seasonal winter road use to all-season roads also influences the cumulative contributions of greenhouse gas emissions. The influence of the decommissioning of winter roads on the cumulative effects assessment of greenhouse gas emissions, and influence on cumulative effects to moose and caribou, is assessed in Section 13.3 .