Cultural and Ecological Value of Boreal Woodland Caribou Habitat

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The Cultural and Ecological Value of Boreal Woodland Caribou Habitat

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can be found in land-use plans, community visions, and co-management plans.[23] These variable resources also offer a sense of the diversity of perspectives across Aboriginal communities in Canada.

The following is a preliminary summary of seven values associated with caribou and where possible, the methods of determining their monetary or relative worth.

1. Subsistence

"The value of caribou consumed for subsistence has not been precisely calculated for each of the northern territories, but is probably in the realm of tens of millions of dollars per year."[24]

Since time immemorial, First Nation hunters have searched out caribou for sustenance and nutrition. Despite early predictions that this cultural practice would disappear, First Nations continue to hunt for a source of food,[25] even with accessible protein at the local store. Many remote Northern First Nation communities due to the high cost of store bought foods rely on hunting for subsistence. While generational disparities in the harvest of wild foods do exist, with some youth choosing not to pursue subsistence hunting, the practice persists.[26]

The primary method of determining the value of caribou for sustenance is by applying the cost of imported meats.[27] However, this application ignores the qualitative differences between meats, notably related to flavor and nutrition. "Country food not only tastes better, but it is also more satisfying and nutritious. There is no satisfactory substitute for it; hence the acceptance of anything which might be substituted for it entails an absolute loss of welfare of incalculable proportions for native people."[28] Satisfaction along with less tangible or passive values create the need to combine economic valuation with a descriptive approach.[29]

Since caribou meat is not sold in a market, a replacement value is often used to determine monetary equivalents.[30] To make a comparison with beef purchased from local stores, the Beverly and Qamanirjuaq Caribou Management Board (BQCMB) used a nutritional

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[23] Whitefeather Forest Management Corporation. 2006. Keeping Woodland Caribou on the Land: Cross-Cultural Research in the Whitefeather Forest. Pikangikum, Ontario; and Beverly and Qamanirjuaq Caribou Management Board, 2008

[24] Tesar, C. 2007. What Price the Caribou?, Northern Perspectives: 2

[25] Natcher, David C., 2009. Subsistence and the Social Economy of Canada's Aboriginal North. The Northern Review, 30: 2

[26] Natcher, 2008: 3

[27] Beverly and Qamanirjuaq Caribou Management Board, 2008

[28] Usher, 1976: 117

[29] Beverly and Qamanirjuaq Caribou Management Board, 2008: 11

[30] For example with barren ground caribou, Usher, 1976: 109

conversional factor determined by the Department of Renewable Resources,[31] subtracted the costs of equipment and supplies, and added the value of hides and other products sold. Without any records of harvest in Aboriginal communities, the amount of caribou harvested for subsistence purposes could only be estimated. For the BQCMB, the yearly value of the subsistence or domestic harvest of two barren ground caribou herds was approximately $14,779,651.[32]

The value determined for the two caribou herds excluded the cultural practices and other passive values described in interviews with community members. The BQCMB could not directly measure passive values that could be compared to the replacement cost of meat. Instead, through a description of cultural values they were able to convey that replacement costs were a conservative estimate of the total cultural value.

The production and use of clothing and tools is another important direct use of caribou resulting from the subsistence harvest.[33] However, there are complications from using a replacement value of actual products or materials, such as caribou hides, brains, and bones. Clothing and tools made from other animals are not necessarily of the same quality and in some cases analogous parts do not serve the same functions.[34]

2. Enjoyment of the Land

While the subsistence harvest of caribou is not a recreational activity, due to its spiritual and social importance, enjoyment is an important component of subsistence practices on the land.[35] Enjoyment, or recreation, has been fairly well documented in non-Aboriginal hunting or fishing, and can be assessed by economic measures that use the fact that a hunter could have chosen another location or pursuit. For First Nations, harvesting is also a trade-off decision that balances other activities including earning a wage that have real economic consequences whether they be commercial or for subsistence purposes.[36]

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[31] Beverly and Qamanirjuaq Caribou Management Board, 2008: 7

[32] Beverly and Qamanirjuaq Caribou Management Board, 2008: 18

[33] Whitefeather Forest Management Corporation, 2006: 24-27; Usher, 1976: 107; and Kritsch, Ingrid, and Karen Wright-Fraser, 2002. The Gwich'in Traditional Caribou Skin Clothing Porject: Repatriating Traditional Knowledge and Skills. Arctic, 55(2)

[34] Whitefeather Forest Management Corporation, 2006: 24-27

[35] Beverly and Qamanirjuaq Caribou Management Board, 2008; and Ashley, Bruce, 2000. Economic Benefits of Outfitted Hunts for Barren-Ground Caribou in Northwest Territories. Wildlife and Fisheries Division/Department of Resources, Wildlife, and Economic Development, Government of Northwest Territories, Yellowknife, Northwest Territories: 44

[36] Adamowicz, Wiktor, Peter Boxall, Michel Haener, Yaoqi Zhang, Donna Dosman, and Juanita Marois, 2006. An Assessment of the Impacts of Forest Management on Aboriginal Hunters: Evidence from Stated and Revealed Preference Data. Forest Science 50(2): 150

This type of choice to determine a balance of activities can be modeled using a stated and revealed preference survey.[37] This type of assessment uses a survey to ask whether there are alternatives to the preferred hunting sites or habitats stated and then models these choices. The costs of the alternatives are determined based on factors such as: investment in equipment, and travel costs.

With travel costs the assumption is that the greater distance someone travels for an activity, the more costs that are absorbed, the greater value that location will have. However for First Nations, the ability to access the site is also based on location within traditional territory. Without proper access all the alternatives may be irrelevant or inappropriate if the same activities will not be possible.

3. Health and Wellness

"Many of the social problems facing First Nations communities, including alcoholism, physical abuse, suicide and general feeling of anomie can be linked to the social vacuum that was created when subsistence harvesting and the seasonal round ceased to be the orienting focus of life."[38]

In determining the economic value of caribou and their habitat, consideration must be given to the health and wellness of the community. A traditional diet based on country foods is more nutritious than store-bought alternatives, as seen in the rise of type II diabetes and other maladies. Health and wellness derived from caribou are thought to come from the nutritious food, satisfaction,[39] active lifestyle,[40] and the fulfillment of social and spiritual relationships.

By maintaining a harvesting lifestyle, First Nation people have been found to have a connection with their traditions and well-being, whereas those who did not were found to have less sense of purpose or direction that led to social malaise.[41] In addition, subsistence harvesting is also a common experience that is a source of strength for kin relationships and the passing on of worldviews within these relationships.

The cost of poor health for individuals and for the community can be determined, but the extent to which loss of caribou and their habitats is a contributor to poor individual and community health is difficult to determine.[42] To approach less-tangible or intangible values,

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[37] For example with moose habitat, Adamowicz, 2006

[38] Hickey, Clifford, David C. Natcher, and Mark Nelson, 2005. Social and Economic Barriers to Subsistence Harvesting in Aboriginal Communities. Anthropologica 47(2): 289-301: 291

[39] Beverly and Qamanirjuaq Caribou Management Board, 2008: 26; and Whitefeather Forest Management Corporation, 2006

[40] Natcher, 2008: 4

[41] Hickey et al. 2005: 291

[42] Hickey et al. 2005

such as health and wellness and the values below, First Nation communities and researchers use more participatory[43] or holistic approaches.[44] These may include appreciative inquiry,[45] interviews, workshops, or a combination of these methods.[46] All of these methods have the advantage of allowing less hindered discussion about values that help build a case for the value of caribou above and beyond monetary figures.

To evaluate the health and wellness, as well as other intangible values, contingent ranking and preferences can be useful. The method asks community members to rank different scenarios or changes in daily life.[47] These ranks can then be summed across the community or region and offer a means of comparing management or development goals.

The cultural capital concept[48] looks at values that represent resources or capital: natural, human, social, institutional, and built capital that must all be present for a fully functioning healthy community.

Another method is the structured decision-making process that seeks to understand values and consequences as they relate to management options rather than using a monetary sum.[49] In all cases, community involvement [50] will be essential for determining values that still have meaning to the community they represent. Community members will also help with determining the values that are captured by economic tools and which need additional description.

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[43] Verschuuren, Bas, 2006, Overview of Cultural and Spiritual values in ecosystem management. Endogenous Development and Bio-cultural Diversity: 322; and International Institute for Sustainable Development, 2001. Integrating Aboriginal Values into Land-Use and Resource Management. International Institute for Sustainable Development: 42

[44] Powell, Judith. 2000. Expanding boundaries: Environmental and Cultural Values within Natural Boundaries. International Journal of Heritage Studies, 6(1): 49

[45] International Institute for Sustainable Development, 2001

[46] Beverly and Qamanirjuaq Caribou Management Board, 2008: 26; Whitefeather Forest Management Corporation, 2006

[47] Commonwealth Department of the Environment, Sport and Territories, the Commonwealth Department of Finance, and the Resource Assessment Commission Australian Government Publishing Service, 1995. Techniques to Value Environmental Resources: an Introductory Handbook. Commonwealth Department of the Environment, Sport and Territories, the Commonwealth Department of Finance, and the Resource Assessment Commission Australian Government Publishing Service, Australia. *Accessed November 1, 2010*: http://www.environment.gov.au/about/publications/economics/value/index.html

[48] Rolfe, Rebecca E., 2006. Social Cohesion and Community Resilience: A Multi-Disciplinary Review of Literature for Rural Health Research. The Rural Centre, Halifax, Nova Scotia: 27

[49] Gregory, Robin and William Trousdal, 2008. Compensating aboriginal cultural losses: An alternative approach to assessing environmental damages. Journal of Environmental Management 90:2469-2479. doi:10.1016/j.jenvman.2008.12.019

[50] Powell, 2000: 59; and Gregory and Trousdale, 2008

4. Reciprocity

Through the practice of hunting, trapping and other activities in caribou habitat, relationships are built amongst community members.[51] Time spent on the land, and the sharing of equipment, knowledge, and skills are critical to the maintenance of social cohesion within many northern communities.[52] Sharing of food is another important collective benefit, wherein hunters recognize the harvest as a gift and share it with their families and other community members if enough is available.[53] In this way, the sharing of the harvest is an important source of nutrition and satisfaction for recipients, and a source of respect for generous harvesters.

The sharing of the harvest is also important for respecting and honouring Elders and ATK holders. In addition, reciprocity is an important base for spiritual and moral values. "While participating in the production and distribution of wildfoods establishes a sense of social relatedness within communities, equally important is the fact that the sharing of wildfoods instills a moral framework between people and the non-human world."[54]

Economic valuation of this sharing would almost certainly underestimate the true value and motivations for such social institutions.[55] Some of the same methods applied to less tangible values, such as health and wellness will be critical in the assessment of the value of reciprocity. Holistic models may also be used, that attempt to weave together all values and promote holistic valuation techniques.[56]

5. Language

Harvesting of caribou is a venue for the development of language.[57] Many of the words and concepts in Aboriginal languages are important for the understanding of caribou and the spiritual relationship to the land. Without language, Aboriginal peoples lose connection with the land.[58] For the BQCMB, the practice of harvesting caribou is integral to preserving and revitalizing northern First Nation culture.[59]

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[51] Kruse, Jack, 2006. Indicators of Social, Economic, and Cultural Cumulative Effects Resulting from Petroleum Development in Alaska: A Review. University of Alaska; and Rolfe, Rebecca E., 2006

[52] Natcher, 2008: 4-5; Nelson et al. 2005: 291

[53] Hickey et al. 2005: 291

[54] Natcher, 2008: 5

[55] Natcher, 2008: 1

[56] Stephenson, 2008: 134

[57] Keeshig-Tobias, Lenore, 2003. Of Hating, Hurting, and Coming to Terms with the English Language. Canadian Journal of Native Education, 27 (1): 97; Beverly and Qamanirjuaq Caribou Management Board, 2008: 26; and Verschuuren, Bas, 2006, Overview of Cultural and Spiritual values in ecosystem management

[58] Keeshig-Tobias, 2003: 97

[59] Beverly and Qamanirjuaq Caribou Management Board, 2008: 26

The importance of caribou to language preservation and revitalization will vary widely from community to community, but the value of the language to a particular community will be difficult to calculate. One method to assess the economic value of language can be estimated by comparing the cost of establishing language programs in communities across the boreal forest. Any program cannot be a true replacement, since it will not be able to teach the specific local meanings and richness that would be learned during a hunt or in ceremonies associated with caribou and the land.

6. Self-determination

"The bush lifestyle does, of course, possess a symbolic value...constituted and maintained through the practice of subsistence harvesting."[60]

For First Nations, the use of the land is critical to their right to rely upon the land in the future.[61] The caribou are valuable as they are part of their connection and rootedness to the land.[62] The right and ability to rely upon the land in the future is also an important value.[63]

Notably, valuation of caribou cannot account for the needs of future generations. The persistence of caribou populations is a critical component of First Nations' self-determination; and we believe that joint-management opportunities must be negotiated to maintain the survival of the species.

7. Spirituality

Subsistence harvesting as a practice is not solely a process of obtaining meat for nutrition. With each hunt a deliberate set of relationships and protocols are awakened and reinforced. These include reciprocity, social cohesion, spirituality and passing on knowledge. Spirituality is an important value for many community members,[64] most notably, their spiritual relationship to the land. "By not hunting caribou, in effect, Pikangikum people are not acknowledging this particular gift from the Creator, they are no longer engaging in a relationship of reciprocity with the Creator (and the land) through the hunting of caribou."[65] First Nation and Aboriginal people feel a connectedness with the land that is impossible to replace or put a measurable value upon.

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[60] Hickey et al. 2005: 299

[61] Hickey et al. 2005: 292

[62] Natcher, 2008: 8-9; and Whitefeather Forest Management Corporation, 2006

[63] Hickey et al. 2005: 292

[64] Hickey et al. 2005: 291-299; and Whitefeather Forest Management Corporation, 2006

[65] Whitefeather Forest Management Corporation, 2006: 28

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This report provides a preliminary discussion of cultural and ecological values related to Canada's boreal woodland caribou and calls upon governments to broaden their approaches to socio-economic valuation to include these vital values.

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Maintaining animal assemblages through single-species management: the case of threatened caribou in boreal forest

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Maintaining animal assemblages through single-species management: the case of threatened caribou in boreal forest

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Abstract. With the intensification of human activities, preserving animal populations is a contemporary challenge of critical importance. In this context, the umbrella species concept is appealing because preserving a single species should result in the protection of multiple co-occurring species. Practitioners, though, face the task of having to find suitable umbrellas to develop single-species management guidelines. In North America, boreal forests must be managed to facilitate the recovery of the threatened boreal caribou (*Rangifer tarandus*). Yet, the effect of caribou conservation on co-occurring animal species remains poorly documented. We tested if boreal caribou can constitute an effective umbrella for boreal fauna. Birds, small mammals, and insects were sampled along gradients of post-harvest and post-fire forest succession. Predictive models of occupancy were developed from the responses of 95 species to characteristics of forest stands and their surroundings. We then assessed the similarity of species occupancy expected between simulated harvested landscapes and a 90 000-km^2 uncut landscape. Managed landscapes were simulated based on three levels of disturbance, two timber-harvest rotation cycles, and dispersed or aggregated cut-blocks. We found that management guidelines that were more likely to maintain caribou populations should also better preserve animal assemblages. Relative to fragmentation or harvest cycle, we detected a stronger effect of habitat loss on species assemblages. Disturbing 22%, 35%, and 45% of the landscape should result, respectively, in 80%, 60%, and 40% probability for caribou populations to be sustainable; in turn, this should result in regional species assemblages with Jaccard similarity indices of 0.86, 0.79, and 0.74, respectively, relative to the uncut landscape. Our study thus demonstrates the value of single-species management for animal conservation. Our quantitative approach allows for the evaluation of management guidelines prior to implementation, thereby providing a tool for establishing suitable compromises between economic and environmental sustainability of human activities.

Key words: *biodiversity; boreal caribou* (Rangifer tarandus); *Côte-Nord; Québec; Canada; ecosystem integrity; single-species management; species assemblages; umbrella species.*

Introduction

One of the main contemporary challenges in conservation biology is to preserve biodiversity despite the increasing effects of humans on wildlife habitats. Several strategies have been proposed to maintain animal populations while maintaining some level of human activities (Lindenmayer et al. 2006), including single-species strategies. By focusing on the needs of a specific species or higher-order taxon (Simberloff 1998, Froese et al. 2008), such strategies are useful shortcuts for land management, as monitoring one species can inform on the status of many co-occurring species. For example, the umbrella species concept is based on the assumption that animals with large home ranges and specific habitat requirements can serve as surrogates for the conservation of co-occurring species (Fleishman et al. 2000). Such single-species approaches, however, have often been criticized for their poor efficiency in maintaining biodiversity in managed landscapes (Roberge and Angelstam 2004, Branton and Richardson 2011). The choice of a good umbrella species is therefore critical for ensuring the efficacy of the mitigation measure. In boreal forest ecosystems, the boreal caribou (*Rangifer tarandus*) has several characteristics that make it a good candidate as an umbrella for biodiversity conservation. First, caribou annual home ranges can reach 4000 km^2 (Brown et al. 2011), which greatly

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exceeds home range sizes of most other boreal species (Swihart et al. 1988). Second, the boreal caribou selects mature conifer forests and open lichen woodlands (Hins et al. 2009), which are also targeted for harvesting. Finally, caribou are highly sensitive to human-induced habitat changes (Hins et al. 2009, Fortin et al. 2013).

Because the boreal caribou is threatened in Canada (Thomas and Gray 2002), strategies for its recovery have been developed (Environment Canada 2011) and implemented in various parts of the boreal forest biome. In the province of Québec, the strategy involves cut-block aggregation and the establishment of a network of temporary protection forest-blocks (ÉRCFQ 2013). Protection blocks should be at least 250 km^2 (ideally >1000 km^2), include land cover types that are favored by boreal caribou, and exclude human activities. The plan is influenced by the recommendations of Environment Canada (2011) which, according to its pan-Canadian analysis, prescribes that a maximum of 35% of the landscape be covered by recently disturbed stands (i.e., ≤50-yr-old stands) to obtain a 60% probability that caribou populations are at least sustainable (increasing the maximum to 45% or reducing it to 22% would result in, respectively, ~40% and 80% probability that caribou populations are at least sustainable). Current guidelines thus allow for the implementation of harvest rotations as short as 50–60 yr, which is far less than the natural fire cycle observed over most of the boreal forest (Bergeron et al. 2006, Bouchard et al. 2008). The implementation of these guidelines will have a strong impact on landscape physiognomy all across the boreal caribou range, which covers a large portion of the boreal forest. Yet, the effect of habitat management for the conservation of caribou populations on ecosystem integrity remains largely unknown.

Our objective was to assess how implementing the recovery strategy for boreal caribou based on the study of Environment Canada (2011), should affect ecosystem integrity in a region dominated by virgin old-growth forests. We used animal (birds, small mammals, beetles, and ants) assemblages as a measure of ecosystem integrity (e.g., Bradford et al. 1998), which is defined as the capability of supporting and maintaining "a balanced, integrated, adaptive community of organisms having a species composition, diversity, and functional organization comparable to that of natural habitat of the region" (Karr 1991, : pg. 69). We first used extensive field surveys to model the probability of occurrence of individual species as a function of stand characteristics and of the surrounding landscape. We then predicted species occurrence for up to 200 yr over a 90 000-km^2 region, which was simulated based on different management scenarios that were developed from the study of Environment Canada (2011). Among the scenarios, we considered three levels of disturbance, two harvest rotation times, and two different spatial configurations of cut blocks.

Methods

Study area

The study took place in the eastern black spruce–feather moss sub-domain of the boreal forest in the Côte-Nord region of Québec, Canada. Dominant tree species are black spruce (*Picea mariana* (Mill.) BSP) and balsam fir (*Abies balsamea* (Mill.) L.). The long fire cycle, ranging from 270 to >500 yr, explains the large proportion (70%) of irregular old-growth forest stands in this region. In the northern part of the study area, wildfires remain the main disturbance, although insect outbreaks and windthrows also occur (Bouchard and Pothier 2011). Forest harvesting began in the mid-twentieth century along the shores of the Saint Lawrence River and is now the main forest disturbance in the southern part of the study area (Bouchard and Pothier 2011). Clear-cutting was mainly used until 1996, when careful logging was implemented. Careful logging consists of only harvesting trees with a diameter at breast height >9 cm, while protecting soils and regeneration (Groot et al. 2005). The landscape mosaic is thus composed of post-logging and post-fire forest stands of various ages (Bouchard and Pothier 2011).

Management scenarios

We simulated nine landscapes across 90 000 km^2 of the Côte-Nord region, where the boreal caribou recovery strategy is currently being implemented (Table 1, Fig. 1). The first landscape (L2012) corresponded to the situation observed in 2012. Harvesting was then simulated by altering L2012. Cut-blocks and temporary protection forest-blocks were delineated according to the basic guidelines of the strategy. Within blocks, two harvest rotations were simulated. First, we converted cut-blocks into recent cuts (<10 yr) and left protection blocks to age 60 (L60y-cycle:Y2081) and 100 yr (L100y-cycle:Y2121). In both scenarios, the main effect was a similar increase in the proportion of early succession forest (<10 yr) and, hence, a decrease in mean forest age in the total landscape compared to the situation observed in 2012 (L2012; Table 1). Second, former protection blocks were entirely harvested in the same way 60 yr (L60y-cycle:Y2141_22%, with 22% indicating that forests that were younger than 50 yr covered 22% of the total landscape) and 100 yr (L100y-cycle:Y2221) later, for each respective scenario. Given that stands originating from both fire and clear-cutting are dominated by conifer species 70 yr after disturbance (Fourrier et al. 2013), blocks that were logged during the first harvest were assumed to regenerate into conifer-dominated forest stands, which would become protection blocks by the second harvest (Fig. 1). This second step generated twice as much mature forest (80–119 yr) and about four times less late succession forest (60–79 yr) in the landscape after a 100-yr harvest rotation than after a 60-yr harvest rotation (Table 1). Mean

TABLE 1. Percentage of cover (and mean age in years) of the land cover types found in the 2012 landscape (L2012), and eight additional landscapes simulated in the Côte-Nord region of Québec, Canada.

Landscape	E-s (%)	M-s (%)	L-s (%)	MF (%)	OGF (%)	MD (%)	O (%)	Total (%)	C (%)	D (%)	Number of pixels
Luncut	1 (5)	11 (38)	4 (73)	10 (102)	56	3	15	100 (104)	0	9	143 941 128
L2012	2 (5)	14 (35)	5 (73)	10 (102)	51	3	15	100 (98)	5	14	143 941 128
L60y-cycle: Y2081	9 (9)	11 (36)	4 (73)	10 (102)	48	3	15	100 (92)	13	17	143 941 128
L60y-cycle: Y2141_22%	14 (9)	11 (36)	11 (72)	8 (102)	38	3	15	100 (81)	26	22	143 941 128
L60y-cycle: Y2141_35%	23 (9)	14 (32)	12 (71)	6 (104)	31	3	11	100 (68)	40	35	74 651 701
L60y-cycle: Y2141_45%	31 (9)	16 (32)	11 (71)	5 (109)	25	2	10	100 (57)	52	45	46 366 416
L100y-cycle: Y2121	9 (9)	11 (36)	3 (72)	9 (102)	50	3	15	100 (93)	13	17	143 941 128
L100y-cycle: Y2221	14 (9)	11 (36)	3 (72)	16 (106)	38	3	15	100 (85)	26	22	143 941 128
Lnoplan: Y2121	9 (9)	11 (36)	3 (73)	9 (103)	50	3	15	100 (92)	13	17	143 941 128

Notes: Forest types are early succession forest 0–9 yr old (E-s), M-s, mid-succession forest 10–59 yr old (M-s), late-succession forest 60–79 yr old (L-s), mature forest 80–119 yr old (MF), old-growth forest 120 yr old (OGF), mixed and deciduous forest (MD), other land cover types (O), cut-blocks 0–120 yr old (C), and disturbed stands <50 yr old (D). Landscapes are landscape without harvest (Luncut), actual landscape in 2012 (L2012), landscape after a first round of harvest 60 yr from 2012 (L60y-cycle:Y2081), landscape after second round of harvest 60 yr from 2072 with 22% (35–45%) disturbed forest (L60y-cycle:Y2141_22% (35%-45%)), landscape after first round of harvest 100 yr from 2012 (L100y-cycle:Y2121), landscape after second round of harvest 100 yr from 2112 (L100y-cycle:Y2221), and landscape harvested without cut aggregation or block rotation (Lnoplan:Y2121).

age of forests in the total landscape was thus higher in the landscape after a 100- than after a 60-yr harvest rotation (85 vs. 81 yr, respectively; Table 1). To assess the effect of harvest cycle duration on animal communities, landscapes were only compared after a full harvest rotation between cut- and protection blocks (i.e., L60y-cycle:Y2141_22% vs. L100y-cycle:Y2221).

After a 60-yr harvest rotation, forests that were younger than 50 yr, including stands originating from either harvest or fire (Table 1), covered 22% of the total landscape (L60y-cycle:Y2141_22%). This landscape was then cropped (by removing pixels from edges) to increase the percentage of disturbance to 35% (L60y-cycle:Y2141_35%) and 45% (L60y-cycle:Y2141_45%), thereby allowing assessment of increasing habitat loss on animal communities.

In parallel, we simulated a landscape that was harvested without following guidelines for caribou recovery (Lnoplan:Y2121). We modeled northward road network expansion from roads present in L2012 and placed <10-yr-old cut-blocks along it. Total harvested area summed to 13% of the landscape, which was equivalent to the proportion of cut-blocks in L100y-cycle:Y2121 (Table 1). Proportions of the different land cover types were similar in both the aggregated-cut (L100y-cycle:Y2121) and the dispersed-cut (Lnoplan:Y2121) landscapes, so we were able to isolate the effect of cut-block spatial distribution and, hence, that of habitat fragmentation, on species assemblages.

Finally, a landscape without logging activities (Luncut) was simulated. This was implemented by converting all cut-blocks (which were cut up to 2012) that were present in the L2012 landscape back to old-growth conifer forests. We assumed that cut-blocks were previously old-growth forest dominated by conifer species, as they are the forest attributes generally targeted by forestry companies because of their higher economic value. Because most of this part of the boreal forest had never been harvested and the fire cycle exceeds 270 yr (Bouchard et al. 2008), we also assumed that forest dynamics had reached equilibrium in the unmanaged portion of the landscape for each scenario, i.e., the age distribution of forest stands would not change over time. Moreover, we also assumed that all old-growth forest stands >120-yr-old in the landscape had reached equilibrium and were similar in terms of habitat characteristics (Fourrier et al. 2013). We considered them as being 120-yr-old; consequently, the mean age of old-growth forest is 120 yr regardless of the landscape (Table 1). Finally, roads were not considered in the analysis, given that road density was assumed to remain constant among simulated landscapes.

Animal sampling

Birds, insects, and small mammals were surveyed along a gradient of post-harvest and post-fire forest stands ranging in age 0–66 and 56–202 yr, respectively. Birds were surveyed in 585 stands (210 post-harvest and 375 post-fire stands), each of which was visited during one summer between 2004 and 2011. Using 10 min fixed-radius point-count methods, we recorded birds that were heard or seen within a 50 m radius. In each stand, one to two sampling stations were set >100 m from stand edges and major water bodies, and were >150 m apart. Each station was visited twice during the breeding season (early June to early July), between 05:00 and 10:00. To minimize observer and temporal biases, each point-count station was surveyed by different observers and at different periods of the morning.

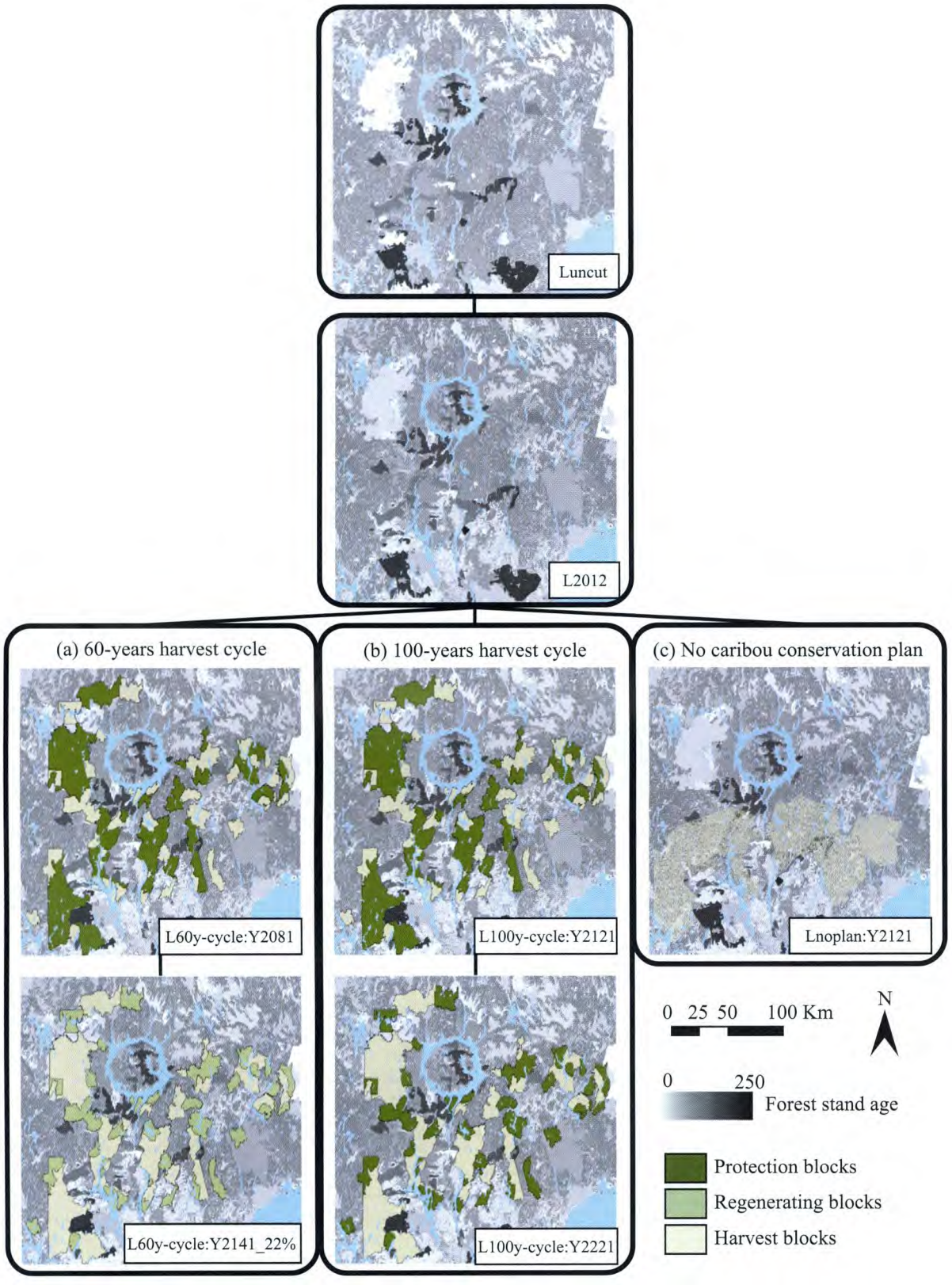

FIG. 1. Forest age distribution in different management scenarios simulated across 90 000 km^2 of the Côte-Nord region in Québec, Canada. Three scenarios generated from the observed 2012 landscape (L2012) contrasted with (a) a 60-yr and (b) a 100-yr harvest rotation cycle between cut-blocks and protection blocks, and (c) cut stand dispersion vs. aggregation. An uncut landscape disturbed only by natural events served as reference (Luncut).

Ants and beetles were sampled at 51 sites (35 post-harvest and 16 post-fire stands) in summer 2011. At each sampling station, four meshed pitfall traps, partly filled with a 40% ethanol solution, were placed in a cross design 7 m from the center and 10 m from one another (following Janssen et al. 2009). At the center, a multidirectional flight-interception trap captured flying beetles. Insects were collected every 3 weeks from late May to mid-August and preserved in 70% ethanol before identification.

Small mammals were sampled in 264 stands (141 and 123 post-harvest and post-fire stands, respectively), each of which was visited one summer (June to August) between 2004–2007, 2010, and 2011. Live traps (7.7 × 8.8 × 23.0 cm; Sherman Traps, Tallahassee, Florida, USA) were installed every 10 m along two parallel transects, which were 80–100 m apart, except in 2007 where traps were set in a 70 × 70 m square grid configuration (49 traps/habitat). Transects were 100–150 m long for a total of 20–30 traps/habitat. Traps were left open for 3 d to habituate the animals, then baited and activated for 3 d. Traps were checked daily and captured mammals were ear-tagged with a unique number. We estimated relative abundance of each species in each site as the minimum number known alive (MNA) per 100 trap-nights, corrected for sprung traps (Beauvais and Buskirk 1999).

Modeling species occurrence probability

Most species were present in <81% of the sampling sites; we then modeled their probability of occurrence with mixed-effects logistic regressions (R package lme4; Bates et al. 2011, R Development Core Team 2012). As red-backed vole (*Myodes gapperi*) occurrence was high (present in 86% of sites), we modeled its abundance with mixed-effects regression, assuming a negative binomial distribution (R package gamlss.mx; Stasinopoulos and Rigby 2014). We adjusted the negative binomial mixed regressions for differences in unit effort among sites by including the number of trap-nights in each site as an offset variable. The offset variable makes model adjustments while being constrained to have a regression coefficient of 1 (Hilbe 2011). Species occurrence probabilities (or abundances) were modeled as a function of stand age and origin, and of the surrounding matrix composition, which was identified from digital eco-forest maps updated every year from information provided by local forest companies and verified during sampling (Appendix S1). Composition of the surrounding matrix was estimated within circular buffers around sampling points, and included the proportions of conifer-dominated stands of different age classes, the proportion of old-growth forest, the proportion of mixed to deciduous forest, and the proportion of non-forested land cover types (e.g., water bodies; Appendix S1). The influence of landscape variables on species assemblages may extend to about 300 m for ants (Vele et al. 2011) and small mammals (Bowman et al. 2001), 400 m for beetles (Janssen et al. 2009), and 1 km for birds (Zhao et al. 2013); buffer radius thus was varied accordingly. When sampling took place over more than one summer, sampling year was included as a random effect in the models to take into account any differences among years (e.g., climate variables, sampling design). Rare species (recorded in <5% of sites; 10% for insects) were not included in the analyses (N = 410). First, because the limited number of records prevented us from modeling species individually and, second, because modeling occurrence probability of rare species that were grouped according to their habitat association, or at the family (e.g., into a group of rare carabid beetle species) or genus level (e.g., all *Atheta* species combined) did not yield satisfying results (P of habitat variables >0.05; AUC of models <0.7).

For each individual species, the final model included only stand- and landscape-scale variables with $P \leq 0.05$, and had an area under the curve (AUC) ≥ 0.7 (Pearce and Ferrier 2000, Hosmer et al. 2013, Appendix S2). The probability of occurrence (or abundance) of species s (p_s) was then predicted for every pixel in each of the nine landscapes, as a function of stand and surrounding matrix characteristics (R package raster; Hijmans and van Etten 2012). An index of species' occupancy, P_s, was estimated as the mean probability of occurrence (or abundance) in a given landscape. A P_s value of 0 indicates complete absence of the species, and P_s increases with the mean occurrence probability (or abundance) of the species over the entire landscape.

We evaluated the percent change in P_s between the uncut landscape and each of the managed landscapes. We then computed the Jaccard similarity index (JSI; Jaccard 1908, Rahel 2000) on occupancy indices to assess the similarity of species assemblages across scenarios (see Appendix S3 for a full description of model-building methods and index calculations).

Results

We recorded a total of 12 779 birds from 81 species, 4212 ground-dwelling beetles from at least 204 species, 2903 flying beetles from at least 256 species, 3760 ants belonging to five genera and at least 14 species, and 4589 small mammals from 13 species. We modeled the probability of occurrence of 29 bird species, five mammal species, five ant species, and 54 beetle species. Previous knowledge on species life history and resource requirements allowed us to classify the modeled bird, mammal, or ant species according to its habitat associations (Appendix S4). Knowledge regarding beetle habitat associations was too scarce, however, to allow proper classification and further habitat-related investigations.

The probability of occurrence (or abundance) of 20 bird species, four ant species, six mammal species, nine ground-dwelling beetle species, and 12 flying beetles was significantly influenced by stand age (Appendix S2). Only two bird species, the Bay-breasted Warbler (*Dendroica castanea*) and the American Golfinch

(*Carduelis tristis*), were influenced by both stand age and stand origin (logging or wildfire). The occurrence of all but four beetle species was influenced by landscape composition. Ten bird species, seven ground-dwelling beetles, four flying beetles, and one ant species were further influenced by landscape heterogeneity within a 300–1000 m buffer (SHDI; Appendix S2).

Effect of disturbance level

As disturbance level (percentage of <50-yr-old stands) increased over the landscape, differences in species assemblages between logged and uncut landscapes increased for all taxa (Table 2). Indeed, an increase of 8% in disturbance in the landscape (L2012 [14% disturbance] to L60y-cycle:Y2141_22%) decreased JSI across taxa by 10%, on average. An additional 13% (L60y-cycle:Y2141_22%-35%) and 10% (L60y-cycle:Y2141_35%-45%) increase in disturbance led to further 7% and 5% declines in JSI on average, respectively (Table 2). Overall, an increase by 31% of forest <50 yr old would reduce JSI by 22.6% between harvested and uncut landscapes. Increasing levels of disturbance from 22% to 35% and 45% in the landscape decreased the similarity of species assemblages between harvested and uncut landscapes (JSI = 0.86, 0.79, and 0.74 for L60y-cycle:Y2141_22%, L60y-cycle:Y2141_35%, and L60y-cycle:Y2141_45%, respectively; Table 2).

Compared to the uncut landscape, the mean change in index of species occupancy increased with the proportion of disturbance in the landscape, regardless of the group of species (Fig. 2). The great majority of declining species (78%, excluding beetles) were associated with late-succession forests (mature to old-growth forests), whereas increasing species (excluding beetles) were mainly early successional species (61% associated with young forests and open habitats; Appendix S4).

Effect of harvest rotation cycle and cut aggregation

Similarity in species assemblages between logged and uncut landscapes was lower after a 60-yr (L60y-cycle:Y2141_22%) than a 100-yr harvest rotation (L100y-cycle:Y2221) for all taxa, except for small mammals for which similarities converged (JSI = 0.94; Table 2). Overall, the mean decrease in JSI across taxa between the first and second round of harvesting was 6.8% under a 60-yr harvest cycle (L60y-cycle:Y2081 to L60y-cycle:Y2141_22%), but 3.6% under a 100-yr rotation (L100y-cycle:Y2121 to L100y-cycle:Y2221; Table 2).

Compared to the uncut landscape, the mean change in the index of species occupancy tended to be stronger after a 60-yr (60y-cycle 2nd harvest) than a 100-yr rotation (100y-cycle 2nd harvest; Fig. 3). Declining bird and small mammal species were mostly associated with

TABLE 2. Jaccard similarity index (JSI) comparisons between species assemblages expected in the uncut (Luncut) and the harvested landscapes, including the percentage of species for which the probability of occurrence increased or declined with harvest.

Comparisons, by assemblage.	L2012	L60y-cycle: Y2081	L60y-cycle: Y2141_22%	L60y-cycle: Y2141_35%	L60y-cycle: Y2141_45%	L100y-cycle: Y2121	L100y-cycle: Y2221	Lnoplan: Y2121
All taxa								
JSI	0.96	0.92	0.86	0.79	0.74	0.92	0.89	0.91
Decline (%)	49.5	48.4	46.3	43.2	44.2	50.5	46.3	49.5
Increase (%)	50.5	51.6	53.7	56.8	55.8	49.5	53.7	50.5
Birds								
JSI	0.96	0.92	0.84	0.77	0.71	0.92	0.87	0.91
Decline (%)	55.2	55.2	62.1	62.1	62.1	51.7	55.2	44.8
Increase (%)	44.8	44.8	37.9	37.9	37.9	48.3	44.8	55.2
Ground beetles								
JSI	0.96	0.92	0.86	0.78	0.73	0.92	0.89	0.90
Decline (%)	39.3	42.9	39.3	32.1	32.1	42.9	35.7	42.9
Increase (%)	60.7	57.1	60.7	67.9	67.9	57.1	64.3	57.1
Flying beetles								
JSI	0.96	0.92	0.85	0.79	0.74	0.93	0.88	0.91
Decline (%)	65.4	57.7	53.9	57.7	57.7	61.5	57.7	57.7
Increase (%)	34.6	42.3	46.2	42.3	42.3	38.5	42.3	42.3
Ants								
JSI	0.96	0.92	0.81	0.73	0.65	0.90	0.87	0.89
Decline (%)	0	0	0	0	0	0	0	0
Increase (%)	100	100	100	100	100	100	100	100
Small mammals								
JSI	0.98	0.96	0.94	0.88	0.86	0.96	0.94	0.97
Decline (%)	57.1	57.1	42.9	28.6	28.6	57.1	57.1	42.9
Increase (%)	42.9	42.9	57.1	71.4	71.4	42.9	42.9	57.1

Note: Landscapes are as in Table 1.

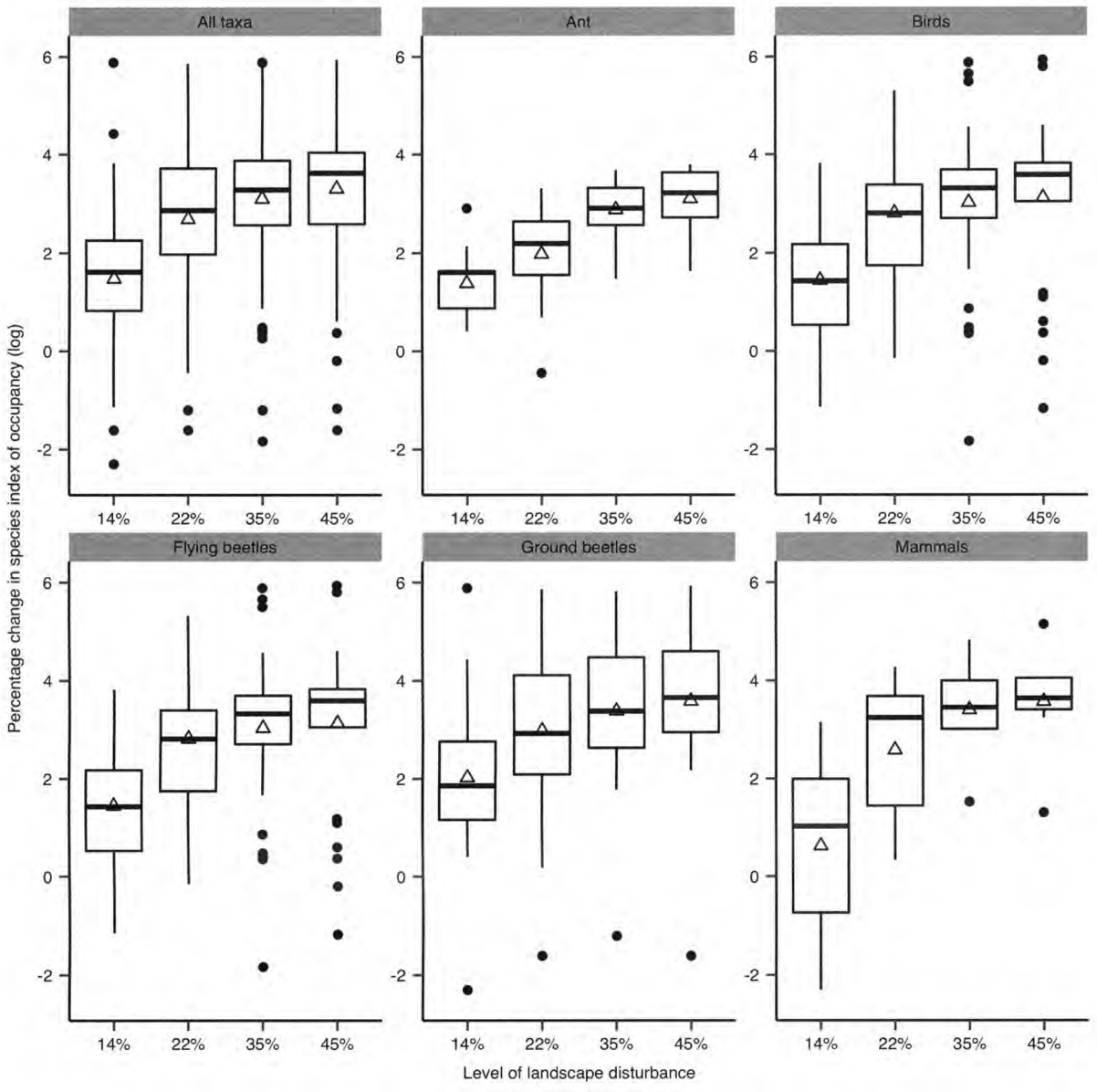

FIG. 2. Percentage of change (log-transformed) in index of species occupancy between the disturbed landscapes (L2012, L60y-cycle:Y2141_22%, L60y-cycle:Y2141_35%, L60y-cycle:Y2141_45%) and the uncut landscape (Luncut), as estimated for four disturbance levels. The horizontal line in each box is the median. Boxes enclose the 75th and 25th percentiles, and error bars enclose the 90th and 10th percentiles. Open triangles indicate the mean change in occurrence probability and black dots are extreme observations.

late-successional forest (74% and 68% of declining species in L60y-cycle:Y2081 and L100y-cycle:Y2221, respectively; excluding beetles; Appendix S4). Conversely, species that benefited from harvesting were mainly associated with early successional forest (53% and 47% for 60- and 100-yr cycles, respectively, excluding beetles; Appendix S4).

Relative to the assemblages that were predicted in the uncut landscape, the changes in expected species assemblages in the aggregated-cut landscape (L100y-cycle:Y2121) were rather similar to the changes in the dispersed-cut landscape (Lnoplan:Y2121). Indeed, for all taxa combined, JSIs were analogous (≤2% different) between the pairwise comparisons of the uncut (Luncut) and the aggregated-cut landscapes (L100y-cycle:Y2121 = 0.92, Table 2) and of the uncut (Luncut) and the dispersed-cut landscapes (Lnoplan:Y2121 = 0.91, Table 2). JSIs were also ≤2% different when species groups were considered separately (Table 2).

DISCUSSION

Our study demonstrates that single-species management could alleviate the effect of human activities on

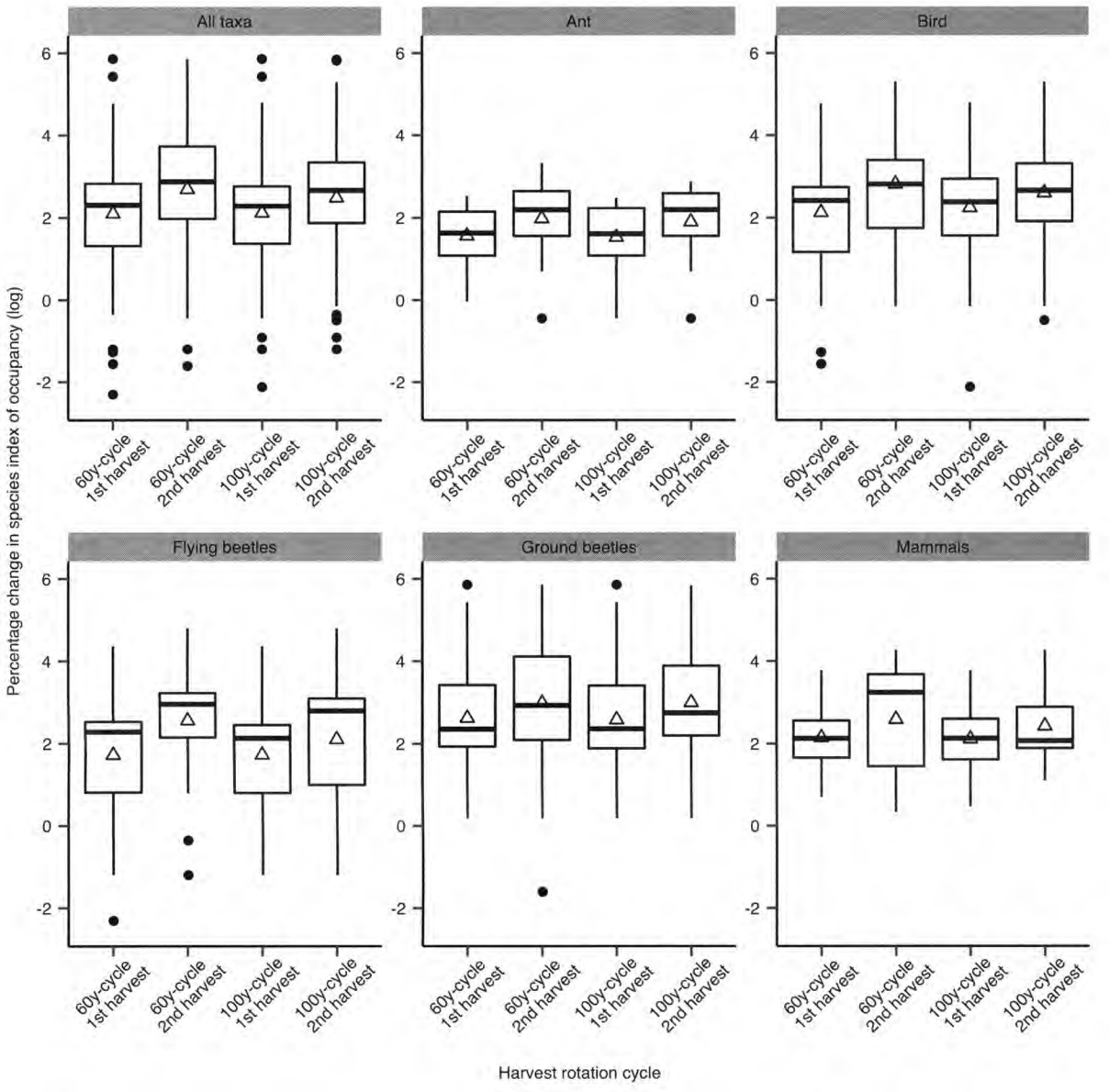

FIG. 3. Percentage of change (log-transformed) in index of species occupancy between the landscapes logged under a 60-yr (L60y-cycle:Y2081 and L60y-cycle:Y2141_22%) or a 100-yr harvest cycles (L100y-cycle:Y2141 and L100y-cycle:Y2221), and the uncut landscape (Luncut). The horizontal line in each box is the median (50th percentile). Boxes enclose the 75th and 25th percentiles, and error bars enclose the 90th and 10th percentiles. Open triangles indicate the mean change in occurrence probability and black dots are extreme observations.

animal species assemblages without having to identify and consider the specific habitat requirements of hundreds of co-occurring species. This conclusion is based on empirical models that were developed for 95 common species of five taxonomic groups living in an environment rapidly changing due to logging activities. On this basis, we have shown that a management strategy more likely to maintain populations of boreal caribou should also be more effective at preserving animal communities. Indeed, lower landscape disturbance levels result in higher probabilities of caribou populations being sustainable (Environment Canada 2011) and higher similarity in regional species assemblages compared to the uncut landscape (Fig. 4). This conclusion is at odds with several reviews on the value of single-species management strategies for biodiversity conservation (Andelman and Fagan 2000, Roberge and Angelstam 2004, Branton and Richardson 2011). Our study thus underscores three factors that affect the success of single-species management: the choice of the focal species, the conservation paradigm that is considered, and the leeway in implementing single-species management plans.

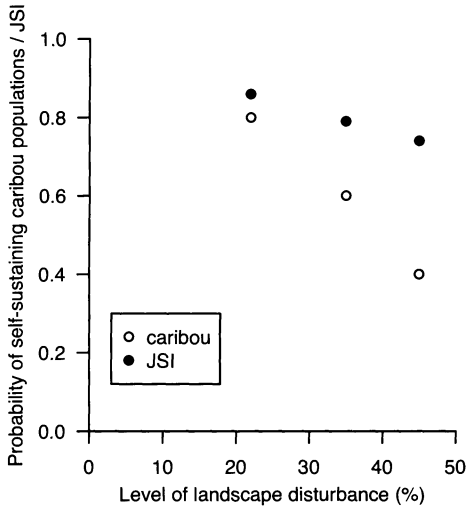

FIG. 4. Change in the similarity indices (JSI) of animal species assemblages (all taxa combined) comparing each disturbed landscape (L60y-cycle:Y2141_22%, L60y-cycle:Y2141_35%, L60y-cycle:Y2141_45%) to the uncut landscape (Luncut) and in the probability of caribou populations to be self-sustaining (estimated from the model in Environment Canada [2011]) with the proportion of the total landscape disturbed by <50-yr-old cuts and fires.

First, to ensure conservation success of a single-species management strategy, the target species should be carefully chosen. While selection criteria vary among studies (Caro and O'Doherty 1999, Branton and Richardson 2011), area-demanding species are generally considered as suitable umbrellas (Roberge and Angelstam 2004). Yet umbrella species are often simply selected based on the general allometry of area requirements (Branton and Richardson 2011). The correlation between body mass and space use, however, is rather noisy and differs among taxa and trophic levels (Sutherland et al. 2000, Jetz et al. 2004). In our case, the annual home range of boreal caribou typically reaches 1000 km^2 (Faille et al. 2010), whereas it should be ~45–200 km^2 (Swihart et al. 1988) for a herbivore of similar body mass (80–205 kg; MFFP 2013). Therefore, land management for boreal caribou requires habitat conservation planning over disproportionally large areas, given the species size. In a context of human industrial development, the selected focal species should also be representative of the natural ecosystem to be preserved, while also being sensitive to anthropogenic disturbances. This is because single-species management planning then becomes less likely to be strictly based upon area, and is more likely also to involve the preservation of key features that set the ecosystem apart from others (Caro and O'Doherty 1999). We have shown that management measures that are more effective at preserving boreal caribou populations also would be more suitable for maintaining the broader animal communities. More specifically, decreasing the level of landscape disturbance from 45% to 35% and 22% would result respectively in about 40%, 60%, and 80% probability that caribou populations are at least sustainable (Environment Canada 2011). In turn, animal communities arising from these disturbances should increasingly reflect regional species assemblages (with Jaccard similarity indices of 0.74, 0.79, and 0.86, respectively; Fig. 4). Nevertheless, animal assemblages do not appear to benefit from every measure that is suitable for caribou. The spatial configuration of cut-blocks appears to be more critical for caribou (Lesmerises et al. 2011) than for the preservation of animal assemblages. We tested the influence of spatial distribution of cut-blocks on species assemblages in a lightly disturbed landscape (17%), and still found a slight tendency of cut-aggregation patterns to maintain animal assemblages better than cut-dispersion would (JSIs for L100y-cycle:Y2121 are usually higher than for Lnoplan:Y2121; Table 2). This tendency could become a significant difference as landscape disturbance levels increase. Hence, our study gives support to the conservation value of management strategies that focus on the preservation of broadscale habitat characteristics needed for a specialist species with large home ranges.

Second, our study is based on the conservation paradigm of maintaining rather than maximizing regional biodiversity. While there are no clear guidelines for assessing the conservation efficiency of single-species management strategies (Favreau et al. 2006), the maximization of species richness or the abundance of individuals is often regarded as a success (Roberge and Angelstam 2004, Favreau et al. 2006, Branton and Richardson 2011). This approach, however, may be at odds with efforts aimed at maintaining ecological integrity (Tierney et al. 2009) or restoring ecosystem properties (Olden et al. 2004). The need to preserve specific species assemblages instead of simply the largest number of species or biodiversity hotspots has been central to previous conservation debates (see, e.g., Kareiva and Marvier 2003, Tjørve 2010). In fact, this conservation paradigm has broad implications. For example, maintaining ecological integrity is part of the law governing national parks in Canada (Parks Canada 2013), and it is among the key principles that the International Forest Stewardship Council uses to determine whether or not forest products should be certified (see principle 6: Forest Stewardship Council 2012). We thus based our evaluation of current habitat management guidelines for caribou recovery on their capacity to maintain, despite logging activities, animal communities that are typical of preindustrial landscapes. Our analysis demonstrates how the loss of high-quality caribou habitat, short harvest rotations and, to a lesser extent, the dispersal of cutovers, should impact animal communities. Moreover, the effect of harvesting was clearly noticeable on the most common and abundant species of the study area, suggesting that actual effects of forest management could be even stronger than those reported here, if we were able to include rare species in our study. Indeed, rare species are difficult to detect through general surveys (Preston 1948), and our study is no exception. On one hand, the lack of observations necessary to build robust models of occurrence

probabilities prevented us from evaluating harvest effects on rare species, although they are often more sensitive to habitat changes (Favreau et al. 2006, Drapeau et al. 2009, Norvez et al. 2013) and they can hold key functions in the ecosystem (Mouillot et al. 2013). On the other hand, some authors have suggested that common species are valuable indicators of the effectiveness of conservation strategies implemented on large spatial scale (Gaston and Fuller 2008). Therefore, the species responses that we observed in our study should reflect the state of the wider animal community. However, if we were to consider species richness as a criterion for assessing the conservation value of caribou as an umbrella species, we would have drawn different conclusions. Indeed, logging has a much stronger effect on species assemblages than on species richness (Le Blanc et al. 2010, Ruel et al. 2013), and the maximum number of species is often reached in early to mid-succession (Imbeau et al. 2001, Palladini et al. 2007). The conservation paradigm is therefore central to the selection of the focal species in single-species habitat management.

Third, a given management strategy can be implemented in various ways while still following on-paper recommendations. General guidelines for caribou habitat management require a level of landscape disturbance not exceeding 35%. Yet they do not specify any particular time interval between successive harvests. A disturbance is defined as a forest stand <50 yr old (Environment Canada 2011), which implies that a harvest rotation as short as 50 yr could be implemented while remaining consistent with the management strategy. We investigated the effect of two harvest rotations (60- and 100-yr) that were also both consistent with the current strategy. We showed that animal assemblages differed to a larger extent from assemblages in an uncut landscape after a full 60-yr rotation (i.e., after 120 yr) than after a 100-yr rotation (i.e., after 200 yr). The resilience and resistance of this ecosystem is such that a 60-yr cycle would alter regional animal communities more rapidly and to greater extent than a 100-yr cycle. Furthermore, such short harvest cycles would violate a basic principle of ecosystem-based management, which states that anthropogenic disturbances should remain within the range of variability imposed by natural disturbances (Gauthier et al. 2008). In our study area, fire cycles range between 250 and 600 yr (Bergeron et al. 2006, Bouchard et al. 2008), implying that a 60-yr harvest rotation would result in much higher proportions of young forest stands than are typical for the region. We could therefore expect a reduction of standing and downed deadwood (Buddle et al. 2000, Imbeau et al. 2001), which could explain the significant changes in species assemblages compared to assemblages in an uncut landscape. While a harvest cycle closer to the natural fire cycle is recommended for boreal caribou conservation (Courtois et al. 2004, Hins et al. 2009), we found that it should also be considered to maintain ecosystem integrity.

Like many other world ecosystems (Vitousek et al. 1997), the extent of habitat loss and alteration due to human activities in boreal forests largely exceeds the variability imposed by natural disturbances (Gauthier et al. 2001). The integrity of many boreal ecosystems is compromised, and logging would ultimately reduce the spatial heterogeneity in biodiversity patterns (Imbeau et al. 2001). The efficiency of single-species management strategies is usually assessed after implementation, when an effect on local fauna can be observed (Roberge and Angelstam 2004, Favreau et al. 2006, Branton and Richardson 2011) and biodiversity can be compared between managed and unmanaged areas. The strength of our method resides in its ability to predict animal assemblages under different management scenarios prior to implementation. By comparing quantitative predictions of the effect of various scenarios on animal assemblages, management actions could be adjusted to find a compromise between human activities and ecosystem integrity, given socio-economic concerns and conservation objectives.

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Supporting Information

Additional supporting information may be found in the online version of this article at http://onlinelibrary.wiley.com/doi/10.1890/15-0525.1/suppinfo

Data Availability

Data associated with this paper have been deposited in Dryad: http://dx.doi.org/10.5061/dryad.842r3

NATIONAL ENERGY BOARD

IN THE MATTER OF the *National Energy Board Act*, R.S.C. 1985, c. N-7, as amended (NEB Act), and the regulations made thereunder;

IN THE MATTER OF the *Canadian Environmental Assessment Act, 2012*, S.C. 2012, c. 37, as amended, and the regulations made thereunder;

IN THE MATTER OF an application by NOVA Gas Transmission Ltd. for a Certificate of Public Convenience and Necessity and other related approvals pursuant to Part III and Part IV of the NEB Act.

NOVA GAS TRANSMISSION LTD.

2021 NGTL SYSTEM EXPANSION PROJECT

June 2018

To: The Secretary
National Energy Board
Suite 210, 517 Tenth Avenue SW
Calgary, Alberta T2R 0A8

Purpose and Justification

14. The Project is required to increase NGTL System capability to transport gas from areas where supply is growing, and also to meet delivery requirements in areas where market demand is growing. Customers have signed long-term contracts for firm receipt and delivery transportation services that exceed capacity of the NGTL System beginning in 2021.

15. The Project is supported by NGTL's forecasts of gas supply and demand for the NGTL System. The forecasted supply and demand growth, combined with aggregate contractual underpinnings, demonstrate that the applied-for facilities will be used and useful over their economic life.

Transportation Services and Tolls

16. NGTL will provide services that utilize the Project under the terms and conditions established in the NGTL Gas Transportation Tariff (NGTL Tariff or Tariff), as amended from time to time.

17. NGTL proposes to treat the costs for the Project on a rolled-in basis, and to determine the tolls for services in accordance with the NGTL toll design methodology in effect, and as approved, at any given time.

Application Content

18. NGTL provides in this Application information required for consideration of a CPCN and other approvals, in accordance with sections 52 and 58 of Part III, and Part IV of the NEB Act, and as outlined in the Board's Filing Manual. It also provides information required under subsection 19(1) of CEAA 2012.

Supporting Material

19. In support of this Application, NGTL provides and relies on the information attached to this Application and any additional information that it might file, as directed or permitted by the Board.

Relief Requested

20. NGTL requests that the Board:

- issue a report recommending the issuance of a CPCN, pursuant to section 52 of the NEB Act, authorizing construction and operation of the Project
- issue an exemption from the requirements of sections 30(1)(b) and 47(1) of the NEB Act to obtain LTO from the Board before installing certain tie-ins for the Project

- issue an exemption from the 100% NDE requirement in section 17 of the OPR pursuant to subsections 48(2.1) and 48(2.2) of the NEB Act for certain low-pressure piping systems associated with the Project
- issue an order, pursuant to section 58 of the NEB Act, exempting NGTL from the requirements of subsections 31(c), 31(d) and 33 of the NEB Act in relation to:
  - temporary infrastructure required for construction of the pipeline
  - ROW preparation activities (including clearing, grading, and stripping) and commencing trenchless crossings in select areas along the proposed route (in aggregate not exceeding 40 km in length)
  - the three compressor station unit additions proposed in this Application

    For clarity, these activities will only be undertaken after the CPCN has been issued for the entire Project and after any applicable conditions for the section 58 activities are satisfied
- issue an order pursuant to Part IV of the NEB Act affirming that:
  - prudently incurred costs required to provide service on the applied-for facilities will be included in the determination of the NGTL System revenue requirement
  - the tolls for services on the applied-for facilities will be calculated using the same methodology used to calculate tolls for services on the NGTL System, as determined through Board order from time to time
- grant such further and other relief as NGTL might request or the Board might consider appropriate

Respectfully submitted,

Calgary, Alberta
June 20, 2018

NOVA Gas Transmission Ltd.

Original signed by

_____

Robert Tarvydas
Director, Regulatory Facilities
Regulatory, Canadian Gas Pipelines

Please direct all communications related to this Application to:

8.8.6 Cleanup and Reclamation

General machine cleanup will begin along the pipeline ROW following backfill activities. In winter construction areas, final cleanup will be completed during the next winter period under frozen conditions to allow for one seasonal thaw period to occur after machine cleanup and initial operations. Examples of additional cleanup measures include replacing surface material and installing erosion-control measures.

Poor weather or unsuitable ROW conditions could delay final cleanup and ROW reclamation, until more suitable conditions exist. Watercourse crossings will be reclaimed in accordance with all applicable regulatory requirements. The ROW and TWS will be reclaimed as necessary and as soon as practical on completion of final cleanup.

8.9 LTO EXEMPTION REQUEST

Construction of the Project involves several tie-ins to existing pipelines and facilities. In order to preserve construction schedules and minimize outages on operating facilities, NGTL is requesting LTO exemption for 23 tie-ins. The technical details of these tie-ins are provided below.

Valhalla Section

Construction of the Valhalla Section requires three crossover tie-ins to the NPS 36 GPML Loop No. 3. One of these tie-ins will be completed by hot tap method to maintain continued gas flow to existing customers during construction of the Valhalla Section. Two of the tie-ins will be completed by installing pre-tested tee assemblies during a brief planned outage. The hot tap will require six non-pressure tested welds (four on the split tee and two on the power gas riser) and each tee installation will require three non-pressure tested welds.

The crossover tie-in assemblies are as follows:

GPM143-3-U4 (hot tap)

- NPS 36 x 36 split-tee
- NPS 36 F x F valve
- NPS 1 ½ Power Gas Riser Assembly

GPM143-3-D4 (tee)

- NPS 36 x 36 welded tee fitting
- Approximately 10 m of NPS 36 pipe
- NPS 36 W x F valve

GPM120-3-U4 (tee)

11.0 LAND MATTERS

This section describes the land requirements for the Project, NGTL's process for acquiring the land rights required, and NGTL's consultation with landowners and occupants.

11.1 GENERAL LAND INFORMATION

The pipeline components for the Project require a total length of approximately 344 km of ROW as well as associated TWS. The new ROW and TWS are located on both private (freehold) land and provincial Crown land in Alberta. There are three compressor station unit additions, to be located at existing compressor stations, with one (Nordegg) located on provincial Crown land, and the other two (Didsbury and Beiseker) located on private (freehold) land. Each unit addition is anticipated to require additional lands as outlined in Table 11-4. There is also the addition of the January Creek control valve, which is located on provincial Crown land, and is anticipated to be within the confines of an existing NGTL ROW.

11.2 IDENTIFICATION OF LANDOWNERS AND OCCUPANTS

As NGTL developed the proposed pipeline section routes and locations for the compressor station unit additions, Project maps were used to identify all lands potentially affected by the Project. Surface Public Land Standing Report searches were completed to provide information on the Crown lands relating to all disposition holders that have an interest in the lands. Title searches were completed through Alberta Land Titles to obtain information relating to all potentially affected private (freehold) lands, including identification of landowners and registered occupants. NGTL also identified unregistered occupants by gathering information from landowners regarding who customarily occupies their land. This land data was then included in a Project Line List, forming the basis of consultation and land acquisition activities.

As outlined in Table 11-1, approximately 20% of all parcels traversed by the pipeline components are private (freehold) land and approximately 80% are provincial Crown land.

Table 11-1: Land Ownership Along Proposed Pipeline Section Route ROW

Land Type	Number of Parcels	Approximate Percentage of Land Parcels Crossed	Length (km)
Private (Freehold)	114	20	89.4
Provincial (Crown)	471	80	254.6
Total	**585**	**100**	**344**

14.0 ENVIRONMENTAL AND SOCIO-ECONOMIC MATTERS

This section summarizes the need for and scope of the effects assessment, along with the approach, findings, and conclusions of the ESA.

Wood Environment and Infrastructure Solutions (Wood) prepared the ESA for the Project on behalf of NGTL. The ESA assesses the Project based on the description of the Project components outlined in Section 1 of this Application.

14.1 NEED FOR EFFECTS ASSESSMENT

The Project involves construction and operations of gas pipeline components over 40 km in length, which therefore requires a CPCN pursuant to Section 52 of the NEB Act. An environmental assessment is required for the Project under both the NEB Act and CEAA 2012 pursuant to Section 46 of the *Regulations Designating Physical Activities*. The Project's ESA has been prepared in accordance with both the NEB Filing Manual and CEAA 2012. The NEB is responsible for the assessment of the Project, but other federal authorities, including those with special knowledge or expertise, might provide assistance to the Board.

14.2 SCOPE OF THE PROJECT

Consistent with section 19 of CEAA 2012 and guidance in the NEB Filing Manual, the ESA provides an assessment of potential effects associated with the physical works, undertakings and related activities associated with the Project described below:

- construction and operation of approximately 344 km of pipeline loops and related facilities
- construction and operation of three compressor station unit additions
- construction and operation of one control valve
- construction-related temporary infrastructure

The ESA includes an assessment of the effects associated with construction activities, operations, decommissioning or abandonment activities, accidents and malfunctions and effects of the environment on the Project. The ESA analysis includes determination of significance of any residual effects following mitigation and the significance of cumulative effects.

monitoring policies to be applied during the construction and operation of the Project.

25.0 Post Construction Monitoring: provides a description of the post-construction monitoring program and of proposed follow-up programs.

26.0 Conclusion: Provides conclusions related to the significance of predicted residual and cumulative environmental and socio-economic effects associated with the Project.

Appendix A: An Environmental Protection Plan (EPP) – describes the plans to address environmental mitigation and reclamation, chemical and waste management, traffic control management, hydrovac slurry handling, trenchless crossings and contingency plans for any unanticipated circumstances, including spills, effects of adverse environmental conditions and biological, traditional or heritage resource discoveries.

Additional appendices to the ESA include:

Appendix B: Environmental Alignment Sheets

Appendix C: Soil and Soil Productivity Technical Data Report (TDR)

Appendix D: Water Quality and Quantity TDR

Appendix E: Fish and Fish Habitat TDR

Appendix F: Wildlife and Wildlife Habitat TDR

Appendix G: Air Emissions TDR

Appendix H: Acoustic Environment TDR

Appendix I: Preliminary Caribou Habitat Restoration and Offset Measures Plan (CHR&OMP)

Appendix J: Preliminary Decommissioning and Abandonment Plan

Appendix K: Traditional Knowledge Report

14.4 ASSESSMENT METHODOLOGY

The ESA evaluated the potential environmental and socio-economic effects of the construction, operations, and decommissioning or abandonment phases of each component of the Project.

The methodology for this ESA was developed based on the NEB Filing Manual, Release 2017-01, using Guide A: Facilities Applications (NEB Act section 52 and section 58 Applications), Section A.2 (Environmental and Socio-Economic Assessment), and pursuant to CEAA 2012 and involves the following steps:

NOVA Gas Transmission Ltd.
2021 System Expansion Project

File Number OF-Fac-Gas-N081-2018-03 02

Hearing Order GH-003-2018
4 December 2018

Canada

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List of Appendices

1 This Hearing

1.1 An overview[1]

The National Energy Board (NEB or the Board) has a responsibility to regulate the construction and operation of certain interprovincial and international pipelines and power lines. A three member Panel has been assigned to act for the Board to assess the Application filed by NGTL and to make the recommendation and decisions on whether the 2021 System Expansion Project (Project) should proceed or not and under what conditions.

NGTL has applied to the Board for permission to build and operate pipeline segments in Alberta that will be part of the existing NGTL System. The Project includes:

- construction of approximately 344 km of nominal pipe size (NPS) 48 natural gas pipeline loops in eight sections;
- three compressor station unit additions and related components;
- associated facilities, including valve sites, launchers and receivers; and
- construction related temporary infrastructure such as access roads, borrow pits/dugouts and stockpile sites.

The Panel determined that the Application filed by NGTL was sufficiently complete in its Letter of Determination dated 3 December 2018 (A96321) and that a public hearing will be held to consider whether to recommend approval of this Project. There are various ways we gather and test evidence during this hearing. During the hearing we will receive written evidence which can be found on the NEB website. The hearing will also include an oral portion. The Panel will review and consider all of the evidence on the record before we make our recommendation and decisions. The Panel relies only on the evidence on the record.

After the record is closed, the Panel will release a Report setting out the recommendations to the Governor in Council. The Report will also set out the Panel's decisions in relation to those components of the Project for which the Board is the sole decision-maker. The Report will take into account whether the Project is required for the present and future public interest, and will include any conditions the Panel determines are necessary.

The steps and deadlines in the public hearing, as outlined in this Hearing Order, are important in order to make sure the hearing is fair, transparent and efficient, and provides certainty to all participants.

[1] An explanation of frequently used terms in this Hearing Order is provided in Appendix I.

1.2 What did NGTL apply for?

On 20 June 2018, NGTL filed its Application with the Board and applied for:

- A recommendation in the Board's Report to the Minister, under section 52 of the NEB Act, that a Certificate of Public Convenience and Necessity be issued, authorizing NGTL to construct and operate the Project;
- An order under section 58 of the NEB Act, exempting NGTL from the requirements of subsections 31(c), 31(d) and section 33 of the NEB Act in relation to:
    - temporary infrastructure required for construction of the pipeline;
    - right-of-way preparation activities (including clearing, grading, and stripping) and commencing trenchless crossings in select areas along the proposed route (in aggregate not exceeding 40 km in length); and
    - three compressor station unit additions;
- An exemption from the requirements of paragraph 30(1)(b) and subsection 47(1) of the NEB Act to obtain Leave to Open from the Board before installing tie-ins to existing pipelines and facilities;
- An exemption from the 100% non-destructive examination requirement in section 17 of the NEB *Onshore Pipeline Regulations* (OPR) pursuant to subsections 48(2.1) and 48(2.2) of the NEB Act for certain low-pressure piping systems;
- An Order under Part IV of the NEB Act affirming that:
    - Prudently incurred costs required to provide service on the applied-for facilities will be included in the determination of the NGTL System revenue requirement; and
    - The tolls for services on the applied-for facilities will be calculated using the same methodology used to calculate tolls for services on the NGTL System, as determined through Board order from time to time; and
- Such further and other relief as NGTL might request or the Board might consider appropriate.

1.3 Where is this Project located?

Map produced by the NEB, June 2018. The map is a graphical representation intended for general informational purposes only.

1.4 Is this a Designated Project under the *Canadian Environmental Assessment Act, 2012* (CEAA 2012)?

Yes. Since the Project includes more than 40 km of new pipeline, it is designated under the CEAA 2012 and *Regulations Designating Physical Activities*. As a result, it requires a CEAA 2012 environmental assessment for which the Board is the Responsible Authority.

On 5 July 2018 (A92839), the Board released the Factors and Scope of Factors for the Environmental Assessment pursuant to CEAA 2012, which was also posted on the Canadian Environmental Assessment Registry Internet Site (Reference No. 80153). The Factors and Scope of Factors for the Environmental Assessment are provided in Appendix III of this Hearing Order.

1.5 What is this document about?

This document is a Hearing Order and explains:

- the options to participate in or observe the hearing;
- steps and deadlines;
- procedures;
- where you can get more information; and
- the issues the Panel will consider (Appendix II).

1.6 Where can I see NGTL's Application and get more information about the Project?

If you have Internet access, you can find the Application on our website, under Applications & Filings, click on Major Applications and Projects and select **NOVA Gas Transmission Ltd. – 2021 NGTL System Expansion Project**[2].

If you don't have Internet access, you can ask NGTL for a copy by contacting any of these people:

Mr. Jaron Dyble
Regulatory Project Manager
Regulatory Services
NOVA Gas Transmission Ltd.
450 – 1st Street SW
Calgary, AB T2P 5H1
Email jaron_dyble@transcanada.com

Mr. Kevin Thrasher
Senior Legal Counsel
Law, Canadian Pipelines
NOVA Gas Transmission Ltd.
450 – 1st Street SW
Calgary, AB T2P 5H1
Email: kevin_thrasher@transcanada.com

[2] https://www.neb-one.gc.ca/pplctnflng/mjrpp/2021nvgsxpnsn/index-eng.html

Mr. Shawn H.T. Denstedt, QC
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Osler, Hoskin & Harcourt LLP
Suite 2500, TransCanada Tower
450 – 1st Street SW
Calgary, AB T2P 5H1
Email sduncanson@osler.com

You can find all documents filed in the hearing on our website. The only exceptions are when a document is too large or the Panel has approved it as confidential information. Appendix IV shows how hearing documents are organized online and includes tips for using our website.

1.7 Where can I get help or more information?

The NEB's Process Advisor can provide you with information on the process and how to participate in it. Section 6.3 tells you how to contact the Process Advisor. Appendix V explains the role of the Process Advisor.

Our website also has helpful publications about the hearing process and the energy industry in general. Section 6 has information about other sources of help, including NEB staff names and contact information.

2 Participation

2.1 How can I stay informed of the hearing?

Anyone may observe the hearing process. You can observe the hearing process by:

- reading information about this hearing on our website – see Appendix IV;
- reading the evidence that has been filed on the public registry;
- listening to live broadcasts of the oral hearing through our website;
- attending the oral hearing in person;
- reading the daily transcripts of the oral hearing; and
- signing up through the Project website to receive e-mail updates.

Section 6.2 tells you how to stay informed using our website. Section 6.5.1 explains how to get transcripts.

2.2 Can I participate in this hearing?

Standing refers to the ability to participate. Level of participation refers to how someone can participate.

To have standing means that you are allowed to make representations to the Panel and that the Panel will consider this information before making its decision or recommendation on an

application. These representations could be either oral or in writing. Typically, participants with standing in a hearing are Commenters, Intervenors, and the company who made the application.

For this Project, on 5 July 2018 (A92839), the Panel issued a Notice of Public Hearing and Application to Participate (ATP), indicating that the online ATP form for the Project would be available to the public on the NEB website starting 16 July 2018. Those who wished to participate had until 17 August 2018 to apply using the online ATP form.

There were 51 ATPs filed with the Board during the time frame, and one late ATP filed after the deadline. After reviewing the ATP forms and the late ATP, on 20 September 2018 (A94099) the Panel issued its Ruling No. 1 on participation (or standing) and method (or level) of participation in this hearing. Two further late ATPs were filed with the Board, and were approved by the Board in Ruling #2, on 17 October 2018 (A94900).

Those who were granted standing to participate are identified on the List of Participants as being Appendix I "Intervenors" or Appendix II "Commenters" attached to Ruling No. 1 which has been updated to reflect the approval of the late Intervenors, and will be kept up to date throughout the proceeding.

If you are interested in participating in the hearing process, because the ATP deadline has now passed, you must request permission from the Panel. Please refer to sections 5.4 and 5.5 for further guidance.

2.3 What is a Commenter?

If you were approved by the Panel to be a Commenter, you are allowed to file one letter of comment. Any comments you may have filed with the Board in response to the Panel's letter of 20 September 2018 on various matters, do not count as this one letter of comment.

As a Commenter, you do not have the right to file evidence, ask questions about the evidence on the record or present argument. Also, Commenters will not be notified of, nor receive documents that are filed on the online public registry. You will need to monitor the public registry if you wish to remain aware of new filings on the record.

Your letter will be filed on the online public registry, will form part of the record, and the Panel will read and consider it. Any additional letters, filings or other submissions will not be included on the record, or be considered.

2.3.1 What do I write in a letter of comment?

As a Commenter, you may tell us your views on the Project in a written letter of comment. Your letter of comment should include:

- your name, mailing address, and phone number;
- the name of your organization, if you represent one;
- hearing number **GH-003-2018** and file number **OF-Fac-Gas-N081-2018-03 02**;

- comments on how you will be impacted positively or negatively by the Project; and
- any information that explains or supports your comments.

There is no page limit to your letter, although clear and well-organized letters are encouraged.

2.3.2 How can I file a letter of comment?

Only those who have been approved as Commenters may file a letter of comment. Letters of comment must be filed with the Board and a copy served on NGTL by **4 pm Mountain Time on 30 May 2019**.

1. File your letter with the Board in one of these ways:

   - online using e-file, under the "Submit Applications and Regulatory Documents" link on our website, or
   - mail, fax or courier it to us. - see section 6.1.

2. You must also serve a copy of your letter to NGTL and its counsel at the same time at the following addresses:

Mr. Jaron Dyble
Regulatory Project Manager
Regulatory Services
NOVA Gas Transmission Ltd.
450 – 1st Street SW
Calgary, AB T2P 5H1
Email jaron_dyble@transcanada.com

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Osler, Hoskin & Harcourt LLP
Suite 2500, TransCanada Tower
450 – 1st Street SW
Calgary, AB T2P 5H1
Email sduncanson@osler.com

For information on how to serve documents, see section 5.2.

2.4 What is an Intervenor?

Being an Intervenor is the most involved way to participate. It requires a commitment of time and may involve some costs to prepare your evidence and send documents to Participants. It allows you, among other things, to:

- file written evidence;
- ask questions in writing and orally about others' evidence;

- file and respond to motions; and
- make a final argument.

If you give evidence, you must:

- in writing, answer any written questions (known as information requests) about your evidence, and
- attend the oral hearing if anyone, including the Panel, plans to ask oral questions about your evidence.

Intervenors will be notified of, or receive all documents that are on the public registry. This includes the Application, evidence, notices of motion and all related materials. You can find the public registry on our website at https://apps.neb-one.gc.ca/REGDOCS/Item/View/3575553. For more information on how to find documents on our website, see Appendix IV.

2.5 Can I withdraw?

If you are approved to be a Participant, you may withdraw at any time in the hearing process by telling us in writing and filing that letter on the public registry (though e-filing, mail, fax or hand delivery).

As an Intervenor, unless you formally withdraw, you will continue to regularly receive email notifications and/or hard copies of documents.

3 Steps in the Hearing – Steps which have passed, lead up to and include the Conference, and two specific matters after the Conference

This section describes the steps in the hearing process in chronological order. Appendix VI shows the timetable of hearing steps which sets out specific steps and deadlines.

The Panel reminds Parties that Appendix VI is divided into two sections. The first section is in relation to steps that have already passed, lead up to and include the Conference, and thereafter the filing of Information Requests by Intervenors and the response by NGTL. For efficiency purposes, those dates are set and will not be modified.

The second section of Appendix VI sets out the remaining steps after the Conference in the hearing process with exact dates. These steps are further described in section 4 in this Hearing Order. These exact dates are to provide assistance for planning proposes for the Panel and all Parties. The Panel received comments on the potential timetable (see section 3.3) and, as noted in the cover letter for this Hearing Order, has made modifications.

The dates shown within the second section **may or may not be** modified as a result of the final Conference Summary Report (see section 3.7). So, **Parties are reminded that they should be guided by the dates as presently set out in Appendix VI.**

3.1 The Panel released a Notice of Hearing and accepted Applications to Participate and issued Rulings No. 1 and No. 2

As explained in section 2.2, the Panel issued a Notice of Public Hearing and Application to Participate (ATP) on 5 July 2018, and released its Ruling #1 on 20 September 2018 (A94099), establishing the List of Participants. The List of Participants includes Appendix I "Intervenors" and Appendix II "Commenters" and is attached to Ruling No. 1. This list has been updated to reflect the approval of the late Intervenors, as set out in Ruling #2 (on 17 October 2018 (A94900)) and will be kept up to date throughout the proceeding.

3.2 NGTL served the Application

Immediately after the Panel released the List of Participants, NGTL was directed to serve a copy of its Application and all related documents on each Participant who had not already received a copy.

3.3 The Panel requested comments

On 20 September 2018, the Panel requested comments from all Participants to GH-003-2018 pertaining to the Preliminary List of Issues, the Factors and Scope of Factors for the environmental assessment, and the proposed steps in the hearing process (A94100). Comments from Participants were received up to and including 18 October 2018, and NGTL filed its reply to the comments on 25 October 2018.

The Panel has responded to these comments in separate letters. Comments regarding the Preliminary List of Issues and the Factors and Scope of Factors for the environmental assessment are addressed in the Panel's Letter of Determination dated 4 December 2018 (A96320) which also made a determination of Application completeness. The Panel has addressed the comments regarding the hearing process within the cover letter for this Hearing Order, and made modifications as noted within that letter and within the Hearing Order including the Appendix VI Timetable of Hearing Steps.

3.4 The Panel determined the Application is complete and a time limit is set

On 3 December 2018, the Panel determined that this Application was complete and the assessment could begin. The Chair of the NEB has specified that the time limit for the Panel to submit its Report on the Project is 15 months. Therefore, the Panel will issue the Report no later than 3 March 2020. The time limit represents the maximum time for the Panel to complete its assessment, subject to any adjustments permitted under the NEB Act.

3.5 The Panel released a Hearing Order including the List of Issues

The issues that the Panel will consider in this hearing are limited to those on the List of Issues. These issues were released in preliminary form on 5 July 2018 with the Notice of Hearing and

Application to Participate in order to help interested persons complete their ATPs. The Board then sought comments on the List of Issues and, having considered the comments filed, then released a Letter of Determination in relation to those comments on 3 December 2018. The List of Issues as determined by the Panel is set out in Appendix II.

3.6 NGTL files Additional Evidence and Updated Consultation Logs and Project-related Issues Summaries

By **4 pm Mountain Time on 18 December 2018**, NGTL must file with the Board any additional written evidence to supplement its Application, and it must also serve a copy on all Intervenors.

In response to the comments received from Participants (discussed in the cover letter and in section 3.3), the Panel is adding a requirement for NGTL to update, file and serve its Consultation Logs, and its Project-related Issues Summaries that were provided as Annex A of the Traditional Knowledge Report (filed 26 September 2018 – A94156-11), in conjunction with any additional written evidence.

NGTL must detail the on-going consultation which has occurred with all of the potentially affected communities of Indigenous peoples and landowners since the Application was filed. The Panel is also adding a time frame in which Parties (including Indigenous Intervenors) can comment on these Consultation Logs and Issues Summaries (see section 4.2).

NGTL's Update must include:

- an updated summary on consultations with communities of Indigenous peoples since its supplemental filing received 25 September 2018;
- a summary of any concerns raised;
- a description of how NGTL has addressed or will continue to address any concerns raised, to the extent possible, or an explanation as to why no further action is required to address the concerns; and
- a description of how NGTL plans to engage potentially affected Indigenous peoples throughout the regulatory process, as well as the construction and operational phases of the Project.

3.7 Conference

As set out in the cover letter, the Panel has scheduled a one-day Conference so that Parties may come together to discuss how Indigenous Intervenors can meaningfully participate in the hearing process. The Conference is not an opportunity for gathering or providing evidence. All comments will be filed using the Participation Portal and will be held in a separate folder within the Project folder on the public Registry. The Panel will not review the material submitted.

The dates associated with the Conference are contained in Appendix VI – Timetable of Hearing Steps, and are as follows:

- Parties must register for the Conference by filing with the Board their notice of participation in the Conference, as well as any written comments they may want to make in relation to the discussion questions and topics as set out in Appendix II of the cover letter, by **4 pm Mountain Time on 10 January 2019**;

- NEB staff will release an initial Conference Summary Report which will be compiled based upon the filed comments, and will be distributed **on 18 January 2019** to all Parties; this Report will guide the discussion at the Conference;

- The Conference will be held in the NEB's Hearing Room, in Calgary, **on 24 January 2019 starting at 9 am Mountain Time, and will conclude by 4:30 pm**;

- NEB staff will release an updated version of the Conference Summary Report **on 31 January 2019**, for feedback from those who participated in the Conference. Comments from Parties who participated must be filed with the Board **by 4 pm Mountain Time on 7 February 2019**.

- NEB staff will then prepare the Final Conference Summary Report which will be filed on the public record **on 14 February 2019**, and distributed to all Conference participants. The Panel will consider the Final Conference Summary Report and determine whether any modifications to the hearing timetable as set out in Appendix VI of this Hearing Order are necessary. Any modifications will be set out in a Procedural Update.

Parties are reminded that the dates shown in the second section of Appendix V may or may not be modified as a result of the final Conference Summary Report, and therefore Parties should be guided by the dates as presently set out in Appendix VI.

3.8 Intervenors file Information Requests to NGTL

All Intervenors may ask questions of NGTL. Their questions are to be in writing and are called "Information Requests". Every Information Request must be relevant to one or more of the List of Issues identified in Appendix II.

To submit Information Requests to NGTL, an Intervenor must, by **4 pm Mountain Time on 21 February 2019**:

- file all Information Requests with the Board;
- serve them on NGTL and its counsel; and
- serve them on all other Intervenors.

3.9 NGTL responds to Information Requests

By **4 pm Mountain Time on 7 March 2019**, NGTL must:

- file with the Board its responses to all Information Requests issued; and
- serve a copy on all Intervenors.

4 Steps in the Hearing – Steps which will occur after the Conference

The steps outlined in this section are those which will occur after the Conference and are set out in the second section of Appendix VI. These steps may or may not be modified by the Panel as a result of its consideration of the Final Conference Summary Report. Should modifications be made such will be set out and issued in a Procedural Update. **The Panel reminds Parties that they should be guided by the dates as presently set out in Appendix VI,** and the steps and dates described below.

4.1 The Panel Invites Indigenous Intervenors to Share Oral Indigenous Knowledge

The Board recognizes that communities of Indigenous peoples share their knowledge and lessons through an oral tradition from generation to generation. This knowledge and information is valuable for the Panel's consideration in assessing the Project. The Panel is extending an invitation to Indigenous Intervenors to share oral Indigenous knowledge, which may be in addition to, or instead of, filing written evidence.

Indigenous Intervenors are best placed to decide what information they want to tell the Panel in relation to their interests in the Project area. The Panel is charged with assessing NGTL's Application and determining whether to recommend that the Project be approved and if so, under what terms and conditions. In view of that, the Panel encourages Indigenous Intervenors to participate and share their oral Indigenous knowledge, especially with a focus on their specific rights and interests and the potential impact of the Project on those rights and interests.

The Panel will hold hearings for the sharing of oral Indigenous knowledge, in person, in two locations; in Grande Prairie, Alberta the **week of 29 April 2019**, and in Calgary, Alberta the **week of 6 May 2019**. The detailed schedule will be announced as soon as possible and no later than two weeks prior to the first day of the oral Indigenous knowledge hearings.

If you intend to share oral Indigenous knowledge, Indigenous Intervenors must, by **4 pm Mountain Time on 28 February 2019, file a letter and**:

- Confirm that you would like to share oral Indigenous knowledge;
- Confirm your preferred location;
- Provide the names of the individuals who will present the oral Indigenous knowledge; and
- Serve a copy of this information on NGTL and all other Intervenors.

Our Process Advisor will follow up to discuss any timing or date constraints with Indigenous Intervenors who intend to share oral Indigenous knowledge, as well as discuss any other community requirements (such as ceremonies or songs, break timing and other accommodation for Elders, etc.).

4.2 Intervenors comment on NGTL's updated Consultation Logs and Project-related Issues Summaries

In order to facilitate the Panel's review of NGTL's consultation with Indigenous peoples and landowners, the Panel requests that Parties (including Indigenous Intervenors) file their comments regarding NGTL's consultation logs and Project-related issues summaries, prior to filing written evidence by Intervenors.

By **4 pm Mountain Time on 21 March 2019** Intervenors must:

- file their comments on NGTL's updated consultation logs with the Board; and
- serve a copy on NGTL and other Intervenors.

4.3 Intervenors file written evidence

By **4 pm Mountain Time on 11 April 2019**, Intervenors who want to file evidence must:

- file written evidence with the Board; and
- serve a copy on NGTL and all other Intervenors.

The evidence must be relevant to one or more of the List of Issues identified in Appendix II.

4.4 Parties submit Information Requests to Intervenors

NGTL and Intervenors may ask questions about the evidence filed by other Intervenors. To do this, they must, by **4 pm Mountain Time on 16 May 2019**:

- file the Information Requests with the Board;
- serve them on the relevant Intervenor; and
- serve a copy on NGTL, and all other Intervenors.

The Information Requests must be relevant to one or more of the List of Issues identified in Appendix II.

4.5 Intervenors respond to Information Requests

By **4 pm Mountain Time on 30 May 2019**, Intervenors must:

- file a copy with the Board of their responses to the Information Requests; and
- serve a copy of those responses on NGTL and all other Intervenors.

4.6 NGTL files reply evidence

By **4 pm Mountain Time on 6 June 2019**, NGTL may file any reply evidence with the Board and, serve a copy on all Intervenors.

4.7 The oral portion of the hearing begins

The purpose of the oral portion hearing is for Parties to test the evidence through oral questions, also called cross-examination, and to provide a final argument.

In the Panel's request for comments (issued 20 September 2018), the following question was asked:

> 8. Should there be oral cross-examination, the Board is considering dividing up cross-examination by issue and holding cross-examination on certain issues in one location, and cross-examination on other issues in another location. For example, cross-examination on Issues 1 to 4, and 12 would be held in Calgary, and cross-examination on Issues 5 to 11, and 12 would be held at another location such as Grande Prairie or Edson.
>
>   a) Please provide your comments on this proposed scheme for oral cross-examination.
>
>   b) If oral cross-examination were to take place, how much time do you anticipate you would require for each issue? (*Please note: Parties will not be held to these estimates; this question is for planning purposes only)*

The Panel received requests for oral cross-examination in the comments received regarding the hearing process, and has decided to divide the oral cross-examination by Issue and by location, as described in the Timetable for Hearing Steps, Appendix VI. The Panel also received a request to offer oral argument, after the written argument has been filed. Further details regarding the oral portion of the hearing, being cross-examination and final argument, will be released in a Procedural Update, following consideration of the Final Conference Summary Report (see section 3.7)

For information about the oral hearings, see our "Hearing Process Handbook", available on our website (www.neb-one.gc.ca) under the Participation & Lands tab. In the event of a discrepancy between the Hearing Process Handbook and this Hearing Order, this Hearing Order prevails.

4.8 The Close of the record and the Panel makes its recommendation and decisions

After final argument is concluded, the record is closed, meaning no further new evidence or submissions are accepted by the Panel. The Panel then considers all relevant evidence on the record, the oral Indigenous knowledge, the cross-examination, and final arguments, before making its recommendation and decisions.

5 Procedures

This section describes how to prepare and file documents, how to serve documents that you file, who can assist, and what to do if you miss a deadline or want to bring a motion.

5.1 How do I prepare documents?

Every document you file with the Board or serve on NGTL or Intervenors must refer to Hearing Order **GH-003-2018** and File No. **OF-Fac-Gas-N081-2018-03 02**.

Address the document(s) to the proper Participant. For example, anything to be filed with the Board should be addressed to the Secretary of the Board. Documents specifically for others should be addressed to them using the list of Participants as a guide.

Number the pages of your document consecutively, including blank pages, so the electronic page numbers match the page numbers that show on your document. Also, please use the latest version of Adobe Acrobat, and file documents which are open for use and not password protected.

Except for online forms, sign any document you file with the Board.

If you refer to information on a website in the document you are filing:

- include PDF copies of the exact information that you want the Board to consider. You cannot simply state "see article 'X' found at this website link";
- insert a direct link or a reference to the website;
- make sure the reader does not require a password or subscription to access the website; and
- file a hard copy with the Board of all the information from the website that you are including in your evidence.

5.2 How do I file documents with the Board?

All documents filed with the Board become part of the public registry except those determined by the Panel to be confidential (see section 5.6). We require you to file your documents through the NEB Participation Portal using your online NEB Account or by using e-file.

File Documents using Participation Portal

To file your documents using your online NEB Account, you must follow these steps:

- Prepare your documents as explained in section 5.1;
- Sign into your NEB Account using your GCKey user ID and password, which you created when you applied to participate;
- You should see the Welcome Portal page, click "continue";
- You will see a list of the hearings you can participate in. Locate "NOVA Gas Transmission Ltd. – 2021 NGTL System Expansion Project", click on "Submit Documents Electronically" and follow the instructions; and
- Under Step 8 - "Service Options and Submission of Complete Form", you may choose to have the Participation Portal send an Automated Service Notification on your behalf by

email to all Intervenors who have provided a valid email address. To make use of this service, click on "Yes, I want to use the Participation Portal's Automated Service Notification option for all Participants who have provided an email address."

Note: The Board will accept this Automated Service Notification as equivalent to the service required under section 8 of the *National Energy Board Rules of Practice and Procedure, 1995* (the Rules)[3]. The Rules can be found on our website, see Appendix IV.

If you do not wish to use the Automated Service Notification option, you are required to serve all Participants yourself using any of the methods set out in section 8 of the Rules (i.e., email, facsimile, courier, regular mail or hand delivery).

The Participation Portal cannot serve Participants who have not provided an email address; it is your responsibility to serve a hard copy of your submission on any Participant who has not provided an email address.

- Once you have completed your filing through the Participation Portal, you will receive two emails:
  - your "filing receipt" where you need to verify your attachments; and
  - important instructions including the contact information of the Participants who have not provided an email address and for whom you must serve a hard copy of your filing.

File Documents using e-file

To e-file documents, you must follow these steps:

1. Prepare the document as explained in section 5.1.

2. Go to our website, www.neb-one.gc.ca. Under "Applications & Filings", click on "Submit Applications and Regulatory Documents" and follow the instructions. Refer to the *Filers Guide to Electronic Submission* on our website for more information. You will receive an email containing a "filing receipt". Print the submission receipt and sign it.

3. Send one hard copy of the e-filed document(s) and one hard copy of the signed filing receipt to us by mail, hand delivery or courier. See section 6.1 for our contact information.

Please note that you cannot e-file or submit documents by way of e-mail. For more information see Appendix IV.

[3] National Energy Board Rules of Practice and Procedure, 1995 (SOR/95-208) https://laws-lois.justice.gc.ca/eng/regulations/SOR-95-208/index.html

5.2.1 What if I can't file my documents through the Participation Portal or e-file?

If you cannot file your documents through the Participation Portal or e-file your documents, you may file documents in person, or by mail, fax or courier.

Prepare the document as explained in section 5.1.

Hand deliver, mail, fax, or courier one copy of each document to the Board. See section 6.1 for our contact information.

5.2.2 Filing documents during the oral portion of the hearing

If you wish to file a document after the oral portion of the hearing has started, you must file a notice of motion with the Board as discussed in 4.4. If the Board grants the motion to accept the late document onto the public registry you must:

- Follow the instructions above for filing documents;
- Give six hard copies of your new document(s) to the Regulatory Officer; and
- Make enough hard copies available to those in the hearing room who may need it. This could include NGTL, a witness panel or other Intervenors who may be attending.

5.2.3 Who can help me with filing my documents?

Contact the Regulatory Officer (see section 6.4).

5.3 How do I serve documents on others?

When you are required to serve documents, you must send one copy to NGTL and its counsel, and to each Intervenor set out on Appendix I "List of Parties" attached to Ruling No. 1. The method of service for each Intervenor will be indicated on the List of Parties.

NGTL and Intervenors who can access documents on the NEB website must be notified by email when a document has been filed. To do this, create a list of email addresses from the List of Parties and send an email to this list indicating that the filing is available on the Board's website.

If the List of Parties indicates an Intervenor is unable to access electronic documents, you must provide that party with a hard copy.

If your document cannot be scanned, for example, if it is too large, you must mail, fax, courier or deliver by hand one copy to the Board and to NGTL and all Intervenors. Board staff will put an electronic placeholder on the NEB website. A placeholder indicates a document has been filed in hard copy (and is available in the NEB library) but cannot be viewed or searched online.

You can contact our Regulatory Officer for assistance with e-filing your documents. For questions about serving documents, see section 6.4.

5.4 Notice of Motion - What if I cannot meet a deadline?

Our deadlines are set to provide fairness, efficiency and certainty to all participants. We encourage participants to e-file documents, or to use fax or courier so others receive documents before the filing deadlines.

When you must file documents by a certain deadline, the intended recipient must receive the documents **by 4 pm**, **Mountain Time**, on the date of the deadline.

Late filings will not be accepted, except with permission of the Panel. If you cannot meet a deadline, you file a written document, a "notice of motion", with the Board that requests an extension. Your notice of motion must include the following factors to be considered by the Panel:

- the reason why you cannot meet the deadline;
- whether your submission is likely to assist the Panel;
- whether others have made, or could have made, similar submissions;
- whether other Participants could be disadvantaged as a result of the late submission; and
- any other relevant considerations.

5.5 Notice of Motion - How do I raise a question of procedure or substance that requires a Panel decision?

If you want to ask the Panel to do something, such as asking the Panel to consider a change to the process, you must file a notice of motion with the Board. The Notice of Motion must include:

- a concise statement of the facts;
- the grounds for the request;
- the decision or relief requested, and;
- any information which supports the request.

The Notice of Motion must:

- be in writing;
- be signed by the person making the motion or an authorized representative;
- be divided into consecutively numbered paragraphs;
- be filed with the Board, and served on NGTL and Intervenors; and
- be filed separately from any other correspondence.

If you are relying on case law or other authorities to support your position, you must file a book of authorities and highlight the specific passages you are relying on. You must file a copy with the Board and send a copy to NGTL and all Intervenors.

For further information on motions, see section 35 of the Rules (see Appendix III for how to find the Rules on our website).

NOTE: With any Notice of Motion, whether it be in relation to a matter noted in section 5.4 or section 5.5, it is incumbent on the Party who files a notice of motion to do so in a timely manner or file shortly after the matter for which a motion is required arises.

5.6 Will you keep my evidence confidential?

All evidence that is filed for this hearing will be on the public registry unless you file a Notice of Motion to keep your evidence confidential under sections 16.1 or 16.2 of the NEB Act and the Panel approves your request for confidentiality.

5.7 Where can I go for more detailed information about the hearing procedures?

The Rules provide detailed information about the hearing process; however, in the event of a discrepancy between the Rules and this Hearing Order, this Hearing Order prevails. You may also contact the Process Advisor (see section 6.3).

6 Contact Information

6.1 Our contact information for filing documents

Secretary of the Board
National Energy Board
Suite 210, 517 Tenth Avenue SW
Calgary, AB T2R 0A8

Phone 403-292-4800
Toll-free phone 1-800-899-1265
Fax 403-292-5503
Toll free fax 1-877-288-8803

6.2 NEB Website

We post the most current information about the hearing on our website. Go to www.neb-one.gc.ca and select Applications and Filings, then Major Applications and Projects, then NGTL 2021 System Expansion Project. See Appendix IV for information on our website.

6.3 Process Advisor

Our Process Advisor can assist you to understand the hearing process and how you participate in it. Appendix V provides some information on what the Process Advisor can do to assist. You can contact the Process Advisor at:

NGTLExpansion@neb-one.gc.ca
Toll-free phone 1-800-899-1265 or Toll-free fax 1-877-288-8803

6.4 Regulatory Officer

If you need help with filing documents, evidence or exhibits during the hearing, please contact the Regulatory Officer at:

Carrie Randall
Carrie.Randall@neb-one.gc.ca
Phone 403-613-4539
Toll-free phone 1-800-899-1265
Fax 403-292-5503
Toll free fax 1-877-288-8803

6.5 Publications and Transcripts

For our publications, many are available on our website (www.neb-one.gc.ca). Or you may also contact our library:

publications@neb-one.gc.ca
Phone 403-292-3562 or 1-800-899-1265 (toll free)
Second Floor, 517 Tenth Avenue SW
Calgary, AB T2R 0A8

6.5.1 Transcripts

The oral portion of the hearing will be recorded and transcribed daily. Transcripts will be available through the Board's Internet site at www.neb-one.gc.ca. Select Application and Filings, and click on "View Regulatory Documents". Then select "Active Hearings" and scroll to "NOVA Gas Transmission Ltd. – NGTL 2021 System Expansion Project – (GH-003-2018)".

You can also order transcripts directly from International Reporting Inc. either at the hearing, by e-mailing bprouse@irri.net or by calling 613-748-6043. All charges related to additional copies of the transcripts will be charged directly to those persons requesting them.

6.6 Our library

You can view a copy of the Application in our library. The library is also an excellent source of information about energy issues. You can reach the library at:

library@neb-one.gc.ca
403-299-3561 or 1-800-899-1265 (toll free)
Second Floor, 517 Tenth Avenue SW
Calgary, AB T2R 0A8

NATIONAL ENERGY BOARD

Original signed by L. George

for
Sheri Young
Secretary of the Board

Attachments: Appendices I - VI

Appendix I – Explanation of Frequently Used Terms

The following are some terms used throughout this document and the hearing process. They are not legal definitions.

Applicant, NOVA Gas Transmission Ltd., or NGTL	The company which has filed the application for the Project.
Application	Application dated 20 June 2018 for approval of the 2021 System Expansion Project.
Board or NEB	National Energy Board
CEAA 2012	*Canadian Environmental Assessment Act, 2012* (S.C. 2012, c. 19, s. 52)
Certificate	Certificate of Public Convenience and Necessity granted under section 52 of the *National Energy Board Act.*
Commenter	A person who is directly affected, and/or has relevant information or has expertise regarding the Project and who has been approved by the Board to provide a letter of comment. - see section 2.3
Designated Project	A project designated under the *Canadian Environmental Assessment Act, 2012* as requiring a federal environmental assessment under that Act [CEAA 2012, subsection 2(1)].
e-file	Filing documents electronically with the Board. – see section 5.2
evidence	Reports, statements, photographs, and other material or information that Parties file as part of the record. Evidence is used to support their position on the Application.

file	A formal way of submitting documents to the Board. - see section 5.2
final argument	The position of NGTL and Intervenors, on the recommendations and decisions the Board should make and the reasons why the evidence supports these recommendations and decisions. This may be done orally at the hearing or in writing, as directed by the Board.
Governor in Council	The Governor General acting on the advice of the Federal Cabinet.
hearing or public hearing	A public process the Board uses to gather and test evidence so the Board can make fair and transparent recommendations and decisions. The hearing includes a written portion and may include an oral portion.
Indigenous	Indigenous has the meaning assigned by the definition of Aboriginal peoples of Canada in subsection 35(2) of the *Constitution Act, 1982*: (2) In this Act, "aboriginal peoples of Canada" includes the Indian, Inuit and Métis peoples of Canada
Information Request or IR	A written question about NGTL's or an Intervenor's evidence.
Intervenor	A person who is directly affected and/or has relevant information or has expertise regarding the Project and who has been approved by the Board to participate in this hearing as an Intervenor. Being an Intervenor is the fullest way to participate in the hearing process. – see section 2.4.
List of Issues	The list of issues that the Board will consider in this hearing. - see Appendix II.
NEB Act	The *National Energy Board Act*, (R.S.C., 1985, c. N-7)

NGTL	NOVA Gas Transmission Ltd.
NGTL System	NGTL's natural gas pipeline system comprised of approximately 25,000 km of pipeline, associated compression, and other facilities located in Alberta and British Columbia; subject to federal jurisdiction and regulation by the Board.
Notice of Motion	A document used to raise a question of process or substance, or to ask the Board to do something. The Board makes a decision about any motions it receives by way of a Notice of Motion. – see sections 5.4 and 5.5
OPR	*National Energy Board Onshore Pipeline Regulations* (SOR/99-294)
oral portion of the hearing	The in-person portion of the hearing. - see section 4.7
Order	A Board order made under the NEB Act. See section 1.2 for those requested by NGTL for the 2021 System Expansion Project.
Participant	A person who has applied to participate in the hearing and whose application to participate has been approved by the Board. The term Participants includes NGTL, Intervenors, and Commenters
Participation Portal	An online system where participants can file ATP, view status and submit documents with the Board. – see section 5.2.
Process Advisor	Board staff who assist the public, Indigenous peoples and Participants to understand the process and how to participate in the hearing. - see section 6.3 and Appendix V

Project	NGTL's proposed project - see sections 1.1-1.4
public registry	An online document repository for the evidence filed in the hearing. It is the record that is available to the public. In most cases the public registry and the record include the same information. However, in exceptional circumstances, the Board may decide that certain information can be filed confidentially. That information is part of the record, but not available on the public registry.
record	The record includes all relevant evidence and submissions filed in writing or given orally in the proceeding, including documents such as the Application, the Hearing Order, Rulings, and procedural updates (if any).
Regulatory Officer	Board staff who assist Participants, manage documentation before, during and after the hearing, perform court clerk duties at the hearing, and manage the post hearing process. - see section 6.4
reply evidence	Additional information NGTL may file in reply to evidence filed by other Participants.
Report	A report prepared by the Board to the Governor in Council that includes the Board's recommendations and decisions as to whether the Certificate and requested Orders should be granted for the Project and the reasons for the recommendations and decisions.
serve	To officially provide a document to the applicable Participant, such as NGTL or Intervenors. Notice that the document is available on the public registry is usually provided electronically (by e-mail) but the document may need to be provided to NGTL or Intervenors by mail or fax. - see section 5.3

the Rules	The *National Energy Board Rules of Practice and Procedures, 1995* provide guidance on the Board's procedures. The Rules can be accessed on the Board's website.

Appendix II – List of Issues

The Board has identified the following issues for consideration in the hearing with respect to the construction and operation of the proposed 2021 System Expansion Project (Project). The Board expects that the Applicant will undertake consultation in relation to any of the Issues where there are potential impacts or where concerns have been raised by Parties.

1. The need for the Project.
2. The economic feasibility of the Project.
3. The potential commercial impacts of the Project, including potential economic impacts on Indigenous[4] peoples.
4. The appropriateness of the toll and tariff methodology of the Project.
5. The potential environmental and socio-economic effects of the Project, including any cumulative environmental effects that are likely to result from the Project as set out in the NEB's Filing Manual, as well as those to be considered under the *Canadian Environmental Assessment Act, 2012* (see Appendix III).
6. The appropriateness of the general route and land requirements for the Project.
7. Potential impacts of the Project on the interests of Indigenous peoples, including potential impacts on Indigenous and Treaty rights.
8. Potential impacts of the Project on owners and users of lands.
9. The suitability of the design of the Project.
10. Contingency planning for leaks, accidents or malfunctions, during construction and operation of the Project.
11. Safety and security during construction and operation of the Project, including emergency response planning and third-party damage prevention.
12. The terms and conditions to be included in any recommendation or approval the Board may issue for the Project.

[4] "Indigenous" has the meaning assigned by the definition of Aboriginal peoples of Canada in subsection 35(2) of the *Constitution Act, 1982*:

> (2) In this Act, "aboriginal peoples of Canada" includes the Indian, Inuit and Métis peoples of Canada.

Appendix III – Factors and Scope of the Factors for the Environmental Assessment (EA)*

*pursuant to the *Canadian Environmental Assessment Act, 2012* (CEAA 2012)

1.0 INTRODUCTION

On 20 June 2018, NOVA Gas Transmission Ltd. (NGTL) filed an Application with the National Energy Board (NEB) proposing to construct and operate the 2021 System Expansion Project. As the Project would require more than 40 kilometres of new pipeline and would be regulated under the *National Energy Board Act* (NEB Act), it is therefore a designated project under the CEAA 2012 and requires a CEAA 2012 EA for which the NEB is the Responsible Authority.

For the purposes of the EA, the designated project includes the various components and physical activities described by NGTL in its Application. The Project also includes non-designated project components.

The following section provides a description of the factors to be taken into account in the EA for the Project and of the scope of those factors.

2.0 FACTORS AND SCOPE OF THE FACTORS

2.1 Factors to be considered

The EA for the Project will take into account the factors for a designated project as described in paragraphs 19(1)(a) through (h) of the CEAA 2012:

(a) the environmental effects[6] of the designated project, including the environmental effects of malfunctions or accidents that may occur in connection with the designated project and any cumulative environmental effects that are likely to result from the designated project in combination with other physical activities that have been or will be carried out;

(b) the significance of the effects referred to in paragraph (a);

(c) comments from the public… or any interested party received in accordance with the CEAA 2012;

(d) mitigation measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the designated project;

(e) the requirements of the follow-up program in respect of the designated project;

(f) the purpose of the designated project;

[6] Note Section 5 of the CEAA 2012 further describes the environmental effects that are to be taken into account.

(g) alternative means of carrying out the designated project that are technically and economically feasible and the environmental effects of any such alternative means; and

(h) any change to the designated project that may be caused by the environment."

In addition, subsection 19(3) adds that the EA may take into account "community knowledge and Aboriginal traditional knowledge."

2.2 Scope of the Factors to be considered

The National Energy Board Filing Manual provides information about scoping. The EA will consider the potential effects of the Project within spatial and temporal boundaries within which the Project may potentially interact with and have an effect on components of the environment. These boundaries will vary with the issues and factors considered, and will include but not be limited to:

- construction, operation and maintenance, foreseeable changes, and site reclamation, as well as any other undertakings proposed by the proponent or that are likely to be carried out in relation to the physical works proposed by the proponent, including mitigation and habitat replacement measures;
- seasonal or other natural variations of a population or ecological component;
- any sensitive life cycle phases of species (e.g., wildlife, vegetation) in relation to the timing of Project activities;
- the time required for an effect to become evident;
- the area within which a population or ecological component functions; and
- the area affected by the Project.

Any works and activities associated with additional modifications or associated with the decommissioning or abandonment phase of the Project would be subject to a future application under the NEB Act and assessed in detail at that time. Therefore, at this time, any works or activities associated with these phases of the Project will be examined in a broad context only.

As indicated above, the EA will consider cumulative environmental effects that are likely to result from the Project in combination with effects from other physical activities that have been or will be carried out.

Subsection 2(1) of the CEAA 2012 provides definitions potentially relevant to the scope of the factors, including:

environment means the components of the Earth, and includes

(a) land, water and air, including all layers of the atmosphere;
(b) all organic and inorganic matter and living organisms; and
(c) the interacting natural systems that include components referred to in paragraphs (a) and (b).

and,

> ***mitigation measures*** means measures for the elimination, reduction or control of the adverse environmental effects of a designated project, and includes restitution for any damage to the environment caused by those effects through replacement, restoration, compensation or any other means.

Appendix IV – How can I find documents on the Board's website?

Website Navigation Tips:

1. You will find our website's home page at: www.neb-one.gc.ca

2. To find the Public Registry for the Application, go to the dark blue navigation bar at the top of our home page and under "Applications & Filings", select "View Regulatory Documents". Then click on "Active Hearings" and "NOVA Gas Transmission Ltd. – NGTL 2021 System Expansion Project – (GH-003-2018)".

   At times, recently filed documents may not be on the public registry as they are waiting to be filed. You will find these documents in the "Inbox". The Inbox is located under the NOVA Gas Transmission Ltd. – NGTL 2021 System Expansion Project – (GH-003-2018) tab.

3. If you are an Intervenor and you use your NEB Account to submit documents, your Participation Portal will keep a record of these documents.

4. To learn about hearings in general, go to the left side of our home page, and click "Participate in a Hearing".

5. For information on how to e-file documents, go to the left side of our home page, and click on "File Hearing Documents", then click "Submit Applications and Regulatory Documents" and on the right-hand side of the screen click on "Filers Guide to Electronic Submission" under "Related Links".

6. To find Acts and Regulations, under "About Us", click on "Acts and Regulations" then select "List of Acts and Regulations" to find the *National Energy Board Act* and the *Canadian Environmental Assessment Act, 2012*.

   To find *National Energy Board Rules of Practice and Procedure, 1995*, under "About Us", click on "Acts and Regulations" then select "List of Acts and Regulations". From the right hand column beside *National Energy Board Act* click "Regulations" then "*National Energy Board Rules of Practice and Procedure, 1995.*

Appendix V – Role of the Process Advisor

The Board has assigned Process Advisors for this Project.

If you are thinking about participating in the Board's hearing process for this Project, the Process Advisors can provide you with assistance.

Process Advisors <u>can</u>:

1. Answer your questions about the Board's hearing process;
2. Explain the different options of participation (Intervenor, letter of comment author) and what you can and cannot do in these roles;
3. Organize and run public information sessions and workshops;
4. Discuss how you can apply to participate in the process;
5. Provide samples and templates that can help answer your questions; and,
6. Explain your role in the hearing.

Process Advisors <u>cannot</u>:

1. Make your case for you. That means, he or she cannot:
    a. Interpret the evidence for you;
    b. Tell you what information you should give to the Panel Members or file with the Board;
    c. Tell you how to best present your information and evidence; or
    d. Write your questions or evidence or final argument.
2. Talk to the Panel Members on your behalf.
3. Talk to NGTL on your behalf.

Please contact a Process Advisor at 1-800-899-1265 or NGTLExpansion@neb-one.gc.ca if you have questions about the hearing for this Project, or if you would like help participating in this hearing. Process Advisors will generally be available during business hours and respond to enquiries the following business day.

Appendix VI – Timetable of Hearing Steps

Dates in relation to steps that have passed, lead up to and including the Conference, and two specific matters after the Conference

Steps	Reference (Letter or Hearing Order section)	Responsible Participant	Date or Deadline
Provide comments on the Preliminary List of Issues	Letter dated 20 Sept 2018	Interested persons	18 October 2018
Provide comments on the Preliminary List of Issues	Letter dated 20 Sept 2018	NGTL	25 October 2018
Letter of Determination of Project Application completeness and time limit, and of Lists of Issues and of Factors and Scope of Factors for the Environmental Assessment	Letter dated 3 Dec 2018	Board	4 December 2018
Release Hearing Order GH-003-2018 with List of Issues and cover letter	3.5	Board	4 December 2018
File additional written evidence, updated Project-related Issues Summaries, and updated consultation logs	3.6	NGTL	18 December 2018
File Notice of participation in Conference and comments in relation to the questions and topics	3.7	Intervenors and NGTL	10 January 2019
Initial Conference Summary Report release	3.7	Board staff	18 January 2019

Conference	**3.7**	**Board staff, NGTL and Intervenors**	**24 January 2019**
Draft Conference Summary Report for comment	3.7	Board staff	31 January 2019
Comments on Conference Report	3.7	Intervenors	7 February
Final Conference Summary Report release	3.7	Board staff	14 February 2018
File Information Requests to NGTL	3.8	Intervenors	21 February 2019
Respond to the Intervenor Information Requests	3.9	NGTL	7 March 2019

Timetable for the remaining hearing steps

These may or may not be modified after the Conference. Parties are reminded to be guided by the dates as presently set out below

Steps	**Hearing Order Reference**	**Responsible Participant**	**Date or Deadline**
Provide Notice of participation in sharing of oral Indigenous knowledge	4.1	Indigenous Intervenors	28 February 2019
Provide comments on updated consultation logs, and updated Project-related Issues Summaries	4.2	Intervenors	21 March 2019
File written evidence	4.3	Intervenors	11 April 2019

Steps	Hearing Order Reference	Responsible Participant	Date or Deadline
Sharing of oral Indigenous knowledge	4.1	Indigenous Intervenors	Week of 29 April 2019 in Grande Prairie (to include 4 May 2019 if required) Week of 6 May 2019 in Calgary
File Information Requests to Intervenors	4.4	NGTL, other Intervenors	16 May 2019
Respond to Information Requests	4.5	Intervenors	30 May 2019
File Letters of Comment and serve on NGTL	2.3	Commenters	30 May 2019
File reply evidence	4.6	NGTL	6 June 2019
Oral cross-examination *– Issues 5-12*	4.7	NGTL, Intervenors	Week of 24 June 2019 in Grande Prairie (to include 29 June if required)
Oral cross-examination *– Issues 1-4, 12*	4.7	NGTL, Intervenors	Week of 15 July 2019 in Calgary
Final Argument	4.7	NGTL, Intervenors	Immediately following the close of the second session of oral cross-examination

Board Report	4.8	Board	15 months after the completeness determination by the Board

National Energy Board | Office national de l'énergie

File OF-Fac-Gas-N081-2018-03 02
27 December 2018

Environment and Climate Change Canada
Environmental Assessment Division
Prairie and Northern Region, EA South
150 – 123 Main Street
Winnipeg, MB R3C4W2
Email/courriel: easouthpnr@ec.gc.ca

Dear Sir/Madam,

NOVA Gas Transmission Ltd. (NGTL)
NGTL 2021 System Expansion Project (the Project) Application of 20 June 2018
Potential Effect on Species Listed Under the *Species at Risk Act* (SARA)

Pursuant to the SARA, the National Energy Board (the Board or NEB) hereby advises the Minister of Environment and Climate Change Canada that the above-noted Project, if approved and constructed, may affect nine species listed on Schedule 1 of the SARA and/or their habitat.

The listed wildlife species that may be affected include:

- Northern myotis – Schedule 1 – endangered
- Little brown myotis – Schedule 1 – endangered
- Woodland Caribou - Schedule 1 – threatened
  - Little Smokey Range
- Grizzly bear – Schedule 1 – special concern
- Olive sided flycatcher - Schedule 1 – threatened
- Yellow rail - Schedule 1 – special concern
- Western toad - Schedule 1 - special concern
- Common nighthawk – Schedule 1 – threatened
- Rusty blackbird – Schedule 1 – special concern

In addition, NGTL identified several additional species at risk as having the potential to occur in the Local Study Area, but were eliminated from further assessment due to having a low probability of being affected by the Project. For additional information, please refer to Table 12.1-4, Section 12.1.5 of NGTL's Environmental Assessment Report. The listed wildlife species that were eliminated from further assessment include:

…/2

- Ord's kangaroo rat – Schedule 1 – endangered
- American badger – Schedule 1 – special concern
- Bank swallow – Schedule 1 – threatened
- Barn swallow – Schedule 1 – threatened
- Horned grebe – Schedule 1 – special concern
- Western grebe – Schedule 1 – special concern
- Short eared owl – Schedule 1 – special concern
- Peregrine falcon – Schedule 1 – special concern
- Northern leopard frog – Schedule 1 – special concern
- Western tiger salamander – Schedule 1 – special concern
- Dusky dune moth – Schedule 1 – endangered
- Pale-yellow dune moth – Schedule 1 – special concern
- Monarch – Schedule 1 – special concern

On 20 June 2018, NGTL applied to the NEB to build and operate approximately 344 km of 1,219 mm (NPS 48) outside diameter natural gas pipeline and associated facilities in northwestern Alberta, near Grande Prairie to north of Calgary, including three compressor station additions and a control valve. NGTL's application stated the Project was needed to transport natural gas from areas of increasing production in northwestern Alberta and northeastern BC to intra-Alberta and export markets. If approved, NGTL plans to begin operating the project by April 2021. More information on the Project can be found on the Board's website at http://www.neb-one.gc.ca/pplctnflng/mjrpp/2021nvgsxpnsn/index-eng.html.

The Project is subject to an environmental assessment under the *Canadian Environmental Assessment Act, 2012*. Additional information about the environmental assessment is available through the Canadian Environmental Assessment Registry using reference number 80153.

The Project passes through critical habitat identified in Environment Canada's *Recovery Strategy for the Woodland Caribou* (Rangifer tarandus Caribou), *Boreal Population, in Canada* (2012).

Please note the NEB previously notified Environment and Climate Change Canada, about this proposed Project through its 5 July 2018 Notice of Public Hearing. Should Environment and Climate Change Canada have specific advice related to the above matter, please file this information as part of your Intervenor evidence.

Further enquiries can be directed to Ms. Natalia Churilova, Process Advisor, toll free at 1-800-899-1265.

Yours truly,

Original signed by L. George for

Sheri Young
Secretary of the Board

National Energy Board | Office national de l'énergie

File OF-Fac-Gas-N081-2018-03 02
12 February 2019

To: **All Parties to GH-003-2018**

NOVA Gas Transmission Ltd. (NGTL)
Application for the 2021 System Expansion Project (Project)
Hearing Order GH-003-2018
Potential Conditions for Comment

Background

The National Energy Board (Board or NEB) is continuing its assessment of the Project application filed by NGTL on 20 June 2018. It issued a Hearing Order setting out hearing process on 4 December 2018 (A96357). At the end of the hearing process, the Board must submit a report with its recommendation to the Minister of Natural Resources Canada as to whether a Certificate of Public Convenience and Necessity (Certificate) should be issued for the Project. Regardless of the Board's recommendation, the *National Energy Board Act* (NEB Act) requires that any terms and conditions the Board considers necessary and desirable in the public interest, should the Project be approved by the Governor in Council, be included in its recommendation. If the Project is approved by the Governor in Council, the Certificate may be subject to conditions that must be satisfied prior to and during the construction and operation of the Project. Any Orders issued by the Board for the section 58 Facilities of the Project as applied for may also have conditions.

The potential conditions set out in Appendix I (section 52 Certificate) and Appendix II (section 58 Order) (Potential Conditions) are some of the conditions that the Board may include in any recommendation or decision it makes with respect to the Project under sections 52 and 58 of the NEB Act. This document does not include any conditions with respect to any authorization under Part IV (Traffic, Tolls and Tariffs) of the NEB Act. These Potential Conditions are based on the Board's initial assessment of the Project application and **should not be taken to imply that the Board has formed any opinions on**:

- whether to recommend that a Certificate should or should not be issued under section 52 of the NEB Act for the Project as applied for;
- whether the Board should approve or deny an Order pursuant to section 58 and other sections under the NEB Act in relation to facilities and activities of the Project as applied for; or
- whether the Board should grant the relief requested by NGTL under Part IV of the NEB Act.

…/2

Suite 210, 517 Tenth Avenue SW
Calgary, Alberta T2R 0A8

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Canada

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Telephone/Téléphone : 1-800-899-1265
Facsimile/Télécopieur : 1-877-288-8803

Opportunity to provide Comments on Potential Conditions

NGTL and Intervenors may provide comments and suggestions in relation to any or all of the Potential Conditions set out in Appendices I and II, as well as provide any additional conditions for the Board's consideration, by filing their comments and suggestions with the Board and serving a copy on all Parties by **4 pm (Mountain Time) on 28 February 2019**.

The Potential Conditions presented in Appendices I and II may be revised and further conditions may be added by the Board after it has considered the comments and suggestions filed by the Parties. The Board will provide a further opportunity for Parties to review and comment on the revised Potential Conditions during the hearing process.

Information about Conditions

A primary purpose of conditions is to mitigate potential risks and effects posed by a pipeline project throughout its lifecycle so that it is designed, constructed, operated and maintained, and abandoned in a manner that protects property and the environment and promotes the safety and security of the public. Conditions are important and indispensable tools in the responsible development of pipeline projects through all lifecycle phases (e.g., prior to and during construction, post-construction, operation and maintenance, and abandonment).

Conditions are legal requirements that a company must meet to be allowed to construct and operate a project. The Board has standard conditions that it uses in section 52 Certificates and section 58 Orders which require companies to implement all of the commitments and undertakings stated in its project application and subsequent filings in a given hearing. The Board usually includes additional conditions to address issues specific to each project. Conditions imposed by the Board are enforceable pursuant to the NEB Act.

For this Project, the Board has included two sets of Potential Conditions. The first is set out in the attached Appendix I and would apply to the Certificate under section 52 of the NEB Act should the Project be approved by Governor in Council. The second is set out in Appendix II and would apply to the Order issued under section 58 of the NEB Act. There are included in both Appendices a number of issue-specific conditions which the Board has included in previously-issued Certificates and Orders. These include Potential Conditions requiring NGTL to restore or offset critical habitat for boreal woodland caribou; to incorporate monitoring opportunities for potentially-affected Indigenous peoples; and to provide further information if additional temporary construction camps are required.

If there are any questions regarding this letter or the Board's hearing process, please contact the Board's Process Advisory Team for this Project at NGTLExpansion@neb-one.gc.ca or by telephone toll-free at 1-800-899-1265.

Yours truly,

Original signed by S. Wong

for
Sheri Young
Secretary of the Board

Attachments – Appendix I and Appendix II

IR Number: SCN 1.0

Topic: Construction Camps

Reference:

(i) Environmental and Socio-economic Assessment, June 2018, Section 13 –Aboriginal Engagement - A92619

(ii) Environmental and Socio-economic Assessment, June 2018, Section 3 –Consultation and Engagement - A92619

(iii) Gibson, G., K. Yung, L. Chisholm, and H. Quinn with Lake Babine Nation and Nak'azdli Whut'en. 2017. *Indigenous Communities and Industrial Camps:Promoting healthy communities in settings of industrial change.* Victoria, B.C.:

Preamble: The Applicant's Engagement Plans (reference i and ii) make no references to community safety with respect to the 120 person construction camp at Nordegg, especially in relation to gender based violence. Indigenous communities, particularly women and children, are the most vulnerable and at risk of experiencing the negative effects of construction camps (iii). In this regard, the Applicant should develop, in consultation with Samson Cree Nation (SCN) and other Indigenous groups, programs and services that address issues of community safety.

Request:

(a) Explain whether the Applicant has a policy in place to ensure the safety of SCN and other Indigenous Nations during Project construction, especially with respect to protecting women and children in areas where there will be an influx of workers. Please provide details on what measures the Applicant will take in order to specifically assess and address risks to SCN women and children related to operation of the Nordegg camp.

(b) Explain how SCN, particularly women, will be incorporated into developing and monitoring the implementation of the safety policies of the company.

Response:

(a) and (b)

NGTL developed an ESA that considered the assessment of the potential socio-economic effects from workers being accommodated at a temporary camp for the proposed Nordegg Compressor Station Unit Addition. Using this assessment, NGTL evaluated the potential impacts to all nearby residents, including Indigenous women and children, and provided specific mitigation to avoid and minimize any potential effects such as:

- requiring employees and contractors to adhere to TransCanada's Health, Safety and Environment Commitment Statement
- implementing Alcohol and Drug Policies
- requiring employees and Contractors to adhere to a Code of Conduct
- providing potentially affected Aboriginal groups with the proposed Project construction schedule and maps
- implementing a Traffic Control Management Plan
- requiring Project Contractors to have their own Site-Specific Safety Plans and Emergency Response Plans, and provide their own medical staff to address minor medical issues and first aid incidents

With the implementation of the socio-economic mitigation proposed in the ESA, the planned construction schedule, and the estimated size of the workforce to be housed at the Nordegg construction camp, NGTL estimates that there will be no significant adverse socio-economic effects to nearby communities.

NGTL is committed to its requirements that all personnel and contractors to conduct business activities with integrity, mutual responsibility and collaboration when working with Indigenous communities. In addition, NGTL will require the Prime Contractors for the Project to provide site-specific orientation where best practices and community engagement expectations are communicated to all personnel.

NGTL will continue engaging with Indigenous communities to identify potential issues and concerns, and if warranted, develop enhancements to the proposed socio-economic mitigation.

IR Number: SCN 2.0

Topic: Pipeline Routing

Reference:

(i) Nova Gas Transmission Ltd, 2021 NGTL System Expansion Application, June 2018, Section 7.1 Pipeline Routing - A6F4L4

(ii) Nova Gas Transmission Ltd, 2021 NGTL System Expansion Application, June 2018, Appendix 13-2 Aboriginal Relations Brochure - A6F4Q0

(iii) Nova Gas Transmission Ltd, Environmental and Socio-economic Assessment, June 2018, Section 2.3 Pipeline Routing - A6F4Q3

Preamble: Reference (i) notes that routing criteria includes, "considering input received from potentially affected landowners, stakeholders and Aboriginal groups through various engagement activities" (p. 7-2). Reference (ii) states that, "TransCanada works together with Aboriginal communities to identify impacts of company activities on the community's values and needs in order to find mutually acceptable solutions and benefits" (p. 2). NGTL also states in reference (iii) that, "NGTL will continue to refine the route for the Project based on detailed design, additional field studies and in consideration of input received through the stakeholder, landowner and Aboriginal engagement programs" (p. 2-1). Reference (i) makes no reference to engagement with SCN. SCN has not been adequately consulted on routing of the proposed 2021 NGTL Expansion Project. This is highly problematic because:

1) SCN's inherent and Treaty No. 6 rights and interests are in a sensitive state given the amount of existing oil and gas activities within their Territory, and any further oil and gas activities will highly constrain SCN's inherent and Treaty No. 6 rights and interests;

1) SCN Members actively use and value the areas proposed for the Project for traditional activities/rights-based practices;

2) Project disturbance areas likely overlap with highly valued SCN cultural sites and heritage resource values, including (but not limited to) areas the vicinity for the McLeod River, North Saskatchewan River and Wapiti River crossings;

3) 254.6 km of the Project will be built on purported Crown Land (471 Parcels) when the amount of land available in SCN territory

for members to retain their critical connection to lands and waters and can pass on traditional knowledge to future generations has shrunk massively since approximately 1900. This means that alienation of SCN lands has already surpassed a threshold of significance access to traditional territory, traditional hunting and harvesting areas, cultural and archeological sites, and other sites of significance, is now scarce, with remaining areas of increased importance to SCN culture and rights. SCN has not been provided with enough information to assess environment effects and impacts of the currently selected pipeline route on their Territory or inherent and Treaty No. 6 rights and interests within the project-affected area.

Request:

(a) Confirm whether, and how, the Applicant has engaged and adequately considered SCN perspectives and knowledge in any planning or preliminary design work of preferred pipeline routes to date;

(b) Describe any alternatives for the pipeline routing selection; and

(c) Please identify whether and where in the ESA, NGTL characterizes what proportion of territory in Eastern Alberta, the RSA and LSA, has been alienated from traditional use due to privatization, clearing or other means, in the pre-Project condition, and in the Project case.

Response:

(a) See Section 7.1.1 of the Project Application[1] for route selection criteria, which includes consideration of factors to avoid or reduce potential effects of the Project on the current use of lands and resources by Aboriginal groups.

Please refer to Appendix 6-1 of NGTL's Additional Written Evidence[2] for Aboriginal engagement logs[3], for details regarding how NGTL has considered SCN perspectives and knowledge in any planning or preliminary design work of the proposed pipeline routes to date.

(b) As described in Section 2.2 of the Application, NGTL followed its established System Design procedures for the Project including consideration of alternatives described in Section 4.4 of the Application.[4] NGTL's analysis of potential alternatives included a comparative analysis of increasing system capacity along

[1] NEB Filing ID: A92619-1, PDF pages 93-94.
[2] NEB Filing ID: A96812-1.
[3] NEB Filing ID: A96812-11, PDF pages 299-313.
[4] NEB Filing ID: A92619-1.

established NGTL System corridors both north and south from the Peace River Project Area (PRPA) towards the East Gate (EGAT) and other intra-basin delivery points. The south alternative was identified as having the lower Cumulative Present Value Cost of Service (CPVCOS), and by comparison the north alternative is shown to be economically not feasible.

Once the south alternative was identified as having the lower CPVCOS, NGTL considered facility alternatives along this path and identified locations where pipeline loops were required to overcome high frictional pressure losses. In areas where frictional losses were less constraining, compression was identified as the optimal facility to increase system capacity. This is described in Section 4.4.2 of the Application.

Following the determination of the south corridor as the better alternative, and determination of facility alternatives along the south corridor, local routing alternatives were considered, which include both significant changes to the proposed pipeline routes, as well as smaller refinements. Three significant route alternatives were considered for the Project: two alternative routes around the Little Smoky Caribou Range, and one alternative for the Elmworth Section.

The alternatives that proposed a route around the Little Smoky Caribou Range were not practical or feasible, and would be uneconomical to construct. The lengths of these two alternatives were approximately 84 km and 107 km long, respectively, compared to approximately 46 km for the proposed Project route. Each alternative is also less functional than the proposed route (i.e., each alternative added less capacity to the NGTL System than the proposed route).

The route alternative evaluated for the Elmworth Section was approximately the same length as the proposed route, and provided the same functionality and capacity; however, the evaluation of a trenchless crossing of the Wapiti River at the alternative location was determined to be less feasible than the proposed route.

(c) NGTL notes that request c) is for Eastern Alberta which is outside of the scope of assessment for the RSA because the Project is located in Western Alberta.

The Project is located on both private and Crown lands. The Project RSA totals 899,198 ha, of which approximately 78% (701,374 ha) was located on Crown land, which was available for the most part for traditional use (ESA Section 4.4.3.1).[5]

Approximately 38% of the RSA was affected by current land use (ESA Section 4.4.3.1). However, areas affected by current land use could be available for traditional use (e.g. existing ROWs which have already started to revegetate in areas creating a

[5] NEB Filing ID: A92619

forest edge that may be suitable habitat for traditionally hunted species [ESA Section 19.5.1]).[6]

Section 19.0 of the ESA for the Project acknowledges that past and existing projects and activities in the Local Study Area (LSA) have directly and indirectly affected TLRU. The construction of roads and industrial facilities, forestry, and agricultural activities, have contributed to incremental changes in traditionally used lands and resources as well as access to traditional sites and harvesting areas and this is reflected in the baseline TLRU conditions.[7]

[6] NEB Filing ID : A92619-11.
[7] NEB Filing ID: A92619-15, PDF page 57.

IR Number: SCN 3.0

Category Wildlife and Wildlife Habitat

Topic: Plains Bison

Reference:

(i) Nova Gas Transmission Ltd, Environmental and Socio-economic Assessment, June 2018, Section 11 –- A6F4Q6

(ii) Nova Gas Transmission Ltd. Environmental and Socio-economic Assessment, June 2018, Appendix A Environmental Protection Plans - A6F4Q9

(iii) Steenweg R, Hebblewhite M, Gummer D, Low B, Hunt B. 2016. Assessing Potential Habitat and Carrying Capacity for Reintroduction of Plains Bison (Bison bison bison) in Banff National Park. PLoS ONE 11(2): e0150065. doi:10.1371/journal. pone.0150065

(iv) Nova Gas Transmission Ltd, Environmental and Socio-economic Assessment, June 2018, Appendix J Preliminary Decommissioning and Abandonment Plan - A6F4R2

(v) Buffalo Treaty: A Treaty for Cooperation, Renewal, and Restoration.2014.

Available at:
https://programs.wcs.org/Portals/175/Documents/The%20Buffalo%20Treaty_2014.pdf?ver=2016-01-29-184835-080

Preamble: References (i) and (ii) fail to include a discussion of potential future bison habitat recovery and the Project's potential industrial cumulative effect(s) on bison habitat and planned bison restoration. Reference (i) provides habitat suitability for other species (e.g. moose) but not bison. Reference (iii) provides an example of *Bison bison bison* habitat suitability mapping in Alberta. Reference (iv) does not discuss Indigenous preferred future use as a decision-factor in decommissioning planning nor does NGTL provide a commitment in reference (iv) for including Indigenous groups in end land-use planning (i.e. bison habitat restoration). SCN and other Indigenous communities have recently made a formal commitment to restore bison to the region, and as a signatory to the "Buffalo Treaty: A Treaty for Cooperation, Renewal, and Restoration" (Reference v) SCN wishes to ensure the Project is supportive of future habitat restoration opportunities for bison.

Request:

(a) In relation to Bison Habitat, with input from SCN and other affected Indigenous groups, provide habitat suitability mapping for Bison bison bison within the LSA.

(b) In relation to Bison Habitat, provide supplementary analysis for the characterization and significance determination of the effects of the Project, taking into consideration the effects of certain and reasonably foreseeable projects and activities, on Bison habitat identified in (a).

(c) Provide details on opportunities for SCN and other Indigenous groups to participate in end-land use planning for decommissioning.

Response:

(a) Each wildlife and wildlife habitat indicator that was selected for the detailed assessment was chosen based on criteria presented in Section 11.1.3.1 of the ESA.[1] Specifically, only species that could occur within the Project regional study area (RSA) (range appropriate) based on current habitat mapping information were eligible for detailed assessment (e.g., Habitat Suitability Index [HSI] modelling). Based on government range mapping and status of the bison in the Alberta, free-ranging bison are only found in the far north of the province, outside of the Project RSA. Consequently, bison do not meet the criteria for detailed assessment and HSI modelling. The only free-ranging wild plains bison in Alberta are in fenced-in Elk Island National Park near Edmonton, and the McCusker River sub-population (in the boreal region, outside their normal range), which was a translocation in northern Saskatchewan from Elk Island, which also reside near Cold Lake (AEP and ACA 2017).

(b) As HSI modelling will not be completed for bison as this species does not meet the criteria for selection for detailed assessment above (see response to a), significance determination of effects of the Project cannot be analyzed and assessed for bison.

(c) At this time, there is no plan to decommission and abandon the Project. However, a preliminary decommissioning and abandonment plan is provided in Appendix J of the ESA.[2] At the end of the Project life, NGTL will file for the appropriate regulatory approvals to decommission or abandon necessary pipelines and facilities, as applicable, according to the regulations in force. As part of the application preparation, NGTL will engage Aboriginal groups according to the nature, location and potential effects of the decommissioning and/or abandonment activities, to the identified interests, information needs and concerns of Aboriginal groups and regulations at that time.

[1] NEB Filing ID: A92619.
[2] NEB Filing ID: A92619-19, PDF pages 408-429.

Reference:

Alberta Environment and Parks, and Alberta Conservation Association (AEP and ACA). 2017. Status of the American Bison (Bison bison) in Alberta: Update 2017. Alberta Environment and Parks. Alberta Wildlife Status Report No. 38. Edmonton, AB. 134 pp.

IR Number: SCN 3.1

Category Wildlife and Wildlife Habitat

Topic: Grizzly bear

Reference:

(i) Alberta Environment and Parks. 2016. Alberta Grizzly Bear (Ursus arctos) Recovery Plan, AEP Alberta Species at Risk Recovery Plan No. 38. Edmonton, AB. 85 pp.

(ii) NOVA Gas Transmission Ltd. 2021 June 2018. NGTL System Expansion Project Environmental and Socio-economic Assessment A92619-14 14 NGTL 2021 ESA Sections 12 to 16 - A6F4Q7 PDF pages 12-16 to 12-83

(iii) McKay, Tracy, Ellinor Sahlen, Ole-Gunnar Stoen, Jon Swenson, & Gordon Stenhouse. (2014). Wellsite selection by grizzly bears Ursus arctos in west-central Alberta. Wildlife Biology. 20(5). 310-319. http://dx.doi.org/10.2981/wlb.00046

Preamble:

Grizzly bears are a critically important cultural species for SCN and listed as threatened under the Alberta Wildlife Act. NGTL has identified that the Project construction will remove approximate 936 ha of moderate to high quality grizzly bear habitat (reference ii p. 12-16).

The applicant identifies that the project footprint runs through grizzly bear management zones as identified in the current Alberta Grizzly Bear Recovery Plan (reference i). SCN notes that support zones are located adjacent to identified Core and Secondary Recovery Zones; they are intended to support the population of grizzly bears in adjacent Recovery Zones by creating a priority area for improving survival rates, particularly for females with cubs (reference i).

While it is possible that, as the Applicant notes, grizzly bears may be attracted to the disturbed areas and associated vegetation, reference (iii) McKay et al (2014) found that “In areas with human access, grizzly bears attracted to anthropogenic features are at a higher risk of human-caused mortality” and as such SCN is concerned that the pipeline with it’s adjacent disturbance area may perpetuate an existing mortality sink.

Our review of the ESA has identified numerous flaws and deficiencies in the Applicant’s methodology and approach to assessing effects related to grizzly bear in particular in relation to the determination of significance and cumulative effects. SCN members concerns regarding sustaining local grizzly bear populations (currently in decline) require

taking a very precautionary approach to assessment. This means selecting a conservative threshold for assessment of significance of project effects to grizzly bears. Change in suitable wildlife habitat and change in wildlife effectiveness must consider the impacted context and sensitivity of the local populations and already impacted baseline.

Request:

(a) Please describe how SCN was consulted regarding the methodologies that will be employed and thresholds for assessing impacts for grizzly bear. How was the status as a threatened species within a special management zone considered in assessing significance?

(b) Applicant should be required to provide a map of the project in relation to Alberta Grizzly bear Conservation and Recovery Zones.

(c) How was the existing highly impacted baseline for grizzly bear within the identified LAA and RAA considered for each Project component, and including construction, operation and closure?

(d) How was SCN knowledge about grizzly bear use and impacts within the project area considered in the assessment?

(e) Given that available literature indicates that pipeline corridors can function as mortality sinks, please provide additional detail on how Project related attractants, including newly created early seral habitat, and the interaction with mortality risk was considered in the assessment, particularly during operations.

(f) The Applicant should explain how the best practices and mitigations outlined in reference 1 for grizzly bear will be adopted and at where.

(g) SCN requests that the Applicant undertake the following: Work with SCN to develop a Grizzly Bear Mitigation and Monitoring Plan for the Project area supplemental to the bear-human conflict management plan already included in Appendix 1J, including the following points:

- Include SCN environmental monitors in gathering baseline data on health and sustainability of local bear populations including a properly conducted SCN traditional knowledge study that looks at how grizzly bear habitat has been incrementally removed over time?

- Explore opportunities to work with DNA researchers from University of Alberta to develop a baseline of current and historical grizzly bear DNA for local populations within the project RSA;
- Implement the precautionary guidelines for access management as outlined in the Grizzly bear Recovery Plan Guidelines for access and land use inside Grizzly Bear Priority areas (reference i AEP 2016).
- Work with SCN and regional conservation managers to mitigate dumping of road kill such that it does not become an attractant, especially near human development.
- Describe potential areas for restoration or offset of grizzly bear habitat impacts within the impacted support zone (spatial and temporal scope for this discussion to be developed in collaboration with affected Indigenous groups);
- Clarify recommendations for habitat reclamation and recovery to address anticipated impacts to grizzly bear habitat with reference to reference 1;
- How will SCN be involved in monitoring and reporting grizzly bear observations during operation, particularly with respect to considering the effects of sensory disturbance from the new units in each of the compressor stations on grizzly bears;
- Share information with SCN and other Indigenous groups and take an adaptive management approach with clear and reliable action thresholds that result in additional mitigation or offsetting as needed.

Response:

(a) NGTL has been sharing information with SCN related to the Grande Prairie South Area (Colt Section) component of the Project since August 21, 2017. The results of the SCN Traditional Knowledge (TK) literature review, which included TK information and relevant source data, were shared with SCN and they were invited to review and provide NGTL with feedback. To date, NGTL has not received any response from SCN to that request. On April 25, 2018, NGTL informed SCN that the information would be considered in the TK report and in the Project's ESA. The results of the literature review for SCN was included in the ESA TK Report,[1] however, the results do not include information on methodologies or thresholds associated with grizzly bear impacts. As stated in NGTL's Additional Written

[1] NEB Filing ID: A92619; ESA Appendix K, Section 1.6.27.

Evidence,[2] to date, SCN has not completed a TK study for the Project, however NGTL understands that SCN's TK study is currently in progress and the final TK report is expected by the end of February 2019. Upon receipt, the findings of SCN's TK study will be reviewed in the context of the ESA and consideration in Project planning, as appropriate. NGTL will continue to address questions and concerns identified to NGTL by SCN through its ongoing engagement efforts, should any arise.

Species at Risk were assessed in Section 12.0 of the ESA.[3] As noted in Section 12.6.10 of the ESA, the regional landscape is managed by the province through federal, regional, municipal and watershed management plans which support the present and reasonably foreseeable types of activities occurring within the Project regional study area (RSA). These plans have policies that promote resource conservation and the protection of significant environmental features; however, most do not have specific requirements for the management of wildlife at the landscape level. The determination of significance was informed by the relevant federal, regional and municipal development plans and regulatory guidelines. Consequently, the cumulative effects of the Project, combined with the effects of other reasonably foreseeable projects and ongoing activities on Species at Risk, were predicted to be not significant, with the exception of woodland caribou.[4]

(b) The Project Footprint in relation to Alberta Grizzly Bear Conservation and Recovery Zones can be found in Attachment SCN 3.1-1.

(c) Project effects to all selected wildlife species were assessed in relation to the existing baseline conditions (i.e., including natural habitat availability, existing disturbances etc.). In the case of the grizzly bear, the existing baseline conditions were delineated by the provincially designated grizzly bear zones (i.e., Yellowhead, Grande Cache, and Clearwater), which identify high and good quality habitat for grizzly bears.[5] Project component effects were considered based on the overlap with these zones of the Project Footprint, local study area (LSA), and RSA (e.g., clearing required for construction, pipeline noise levels during operation). An assessment of Project effects during or after decommissioning was presented in Appendix J of the ESA,[6] however, NGTL will meet regulatory requirements at the time of decommissioning or abandonment of the pipeline sections or facilities, and anticipates conducting an ESA at that time that will describe the baseline conditions, potential effects, mitigation measures and predicted residual effects, as well as a cumulative effects assessment. Therefore, no further assessment of the potential effects on VCs for decommissioning and abandonment was included in the ESA.[7]

[2] NEB Filing ID: A96812-1, PDF page 62.
[3] NEB Filing ID: A92619.
[4] NEB Filing ID: A92619, ESA Table 12.6–1.
[5] NEB Filing ID: A92619, ESA Section 12.3.9.
[6] NEB Filing ID: A92619.
[7] NEB Filing ID: A92619, ESA Section 4.1.

(d) See the response to a).

(e) The Project Footprint parallels existing disturbances for 86% of its length. During operation, the Project Footprint would be allowed to naturally revegetate with the exception of approximately 10 to 12 m centered over the buried pipelines where larger trees and shrubs will be periodically managed for operational access.[8] Since the right-of-way (ROW) will revegetate overt time, the residual effect of the early seral forest stage was not deemed likely to occur and thus additional mortality effects were not predicted. No residual effects are anticipated during operation because no additional clearing of suitable habitat will be required and human activity will be low or absent on the ROW that would cause bear-human interactions.

(f) NGTL has developed a Bear Management Plan as part of the Environmental Protection Plan (EPP),[9] which aims to reduce human-bear interactions and prevent direct and indirect mortality of bears. The Bear Management Plan incorporated best management practices and mitigations for working in bear country, including from the Alberta Environment and Parks (AEP) Alberta Grizzly Bear (*Ursus arctos*) Recovery Plan (Reference 1). For a complete list and description of these, please refer to the Bear Management Plan. Measures included:

- reducing human-bear conflict by managing attractants (including around construction camps and construction sites)
- consulting AEP to identify areas of bear activity near the ROW
- ensuring all workers will receive Bear Awareness Training (as described in the EPP)[10]

Through the development of the ESA and Project EPP, NGTL has developed tools that incorporated grizzly bear mitigation and monitoring elements as suggested by SCN. NGTL and its contractors team will implement the *Bear Management Plan*, *Access Management Plan* and *Wildlife Species of Concern Discovery Contingency Plan* to reduce or avoid adverse effects to grizzly bears that may result from the Project during construction and operation. Environmental Inspectors (EIs) will monitor construction activities to ensure compliance with environmental commitments with respect to grizzly bears, and provide expert guidance on decisions to deal with further environmental issues that may arise.

(g) NGTL will be developing an Aboriginal Construction Participation Program (ACPP) for the Project which will provide opportunities for community members to develop an understanding of construction and environmental protection activities through observation and discussion of Project construction activities.

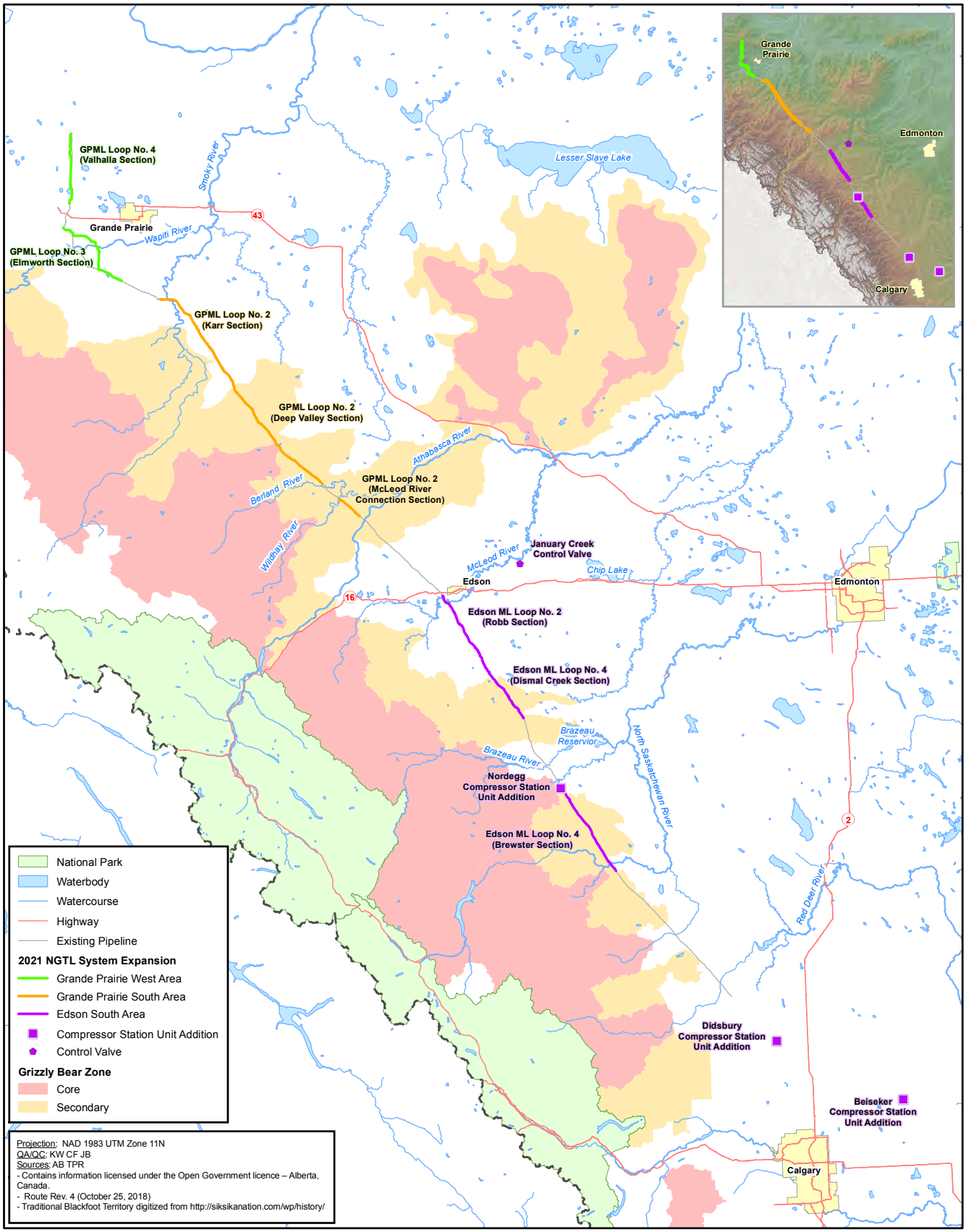
[8] NEB Filing ID: A92619, ESA Section 12.2.
[9] NEB Filing ID: A92619, ESA Appendix 1.1 F.9.
[10] NEB Filing ID: A92619-16.

SCN's TK study is currently in progress and the final TK report is expected by the end of February 2019. Upon receipt, any findings relating to grizzly bears will be reviewed in the context of the ESA and consideration in Project planning and mitigations, as appropriate.

With respect to SCN's suggestions regarding gathering baseline and DNA data of current and historical grizzly bear location populations, as well as any potential mitigations for dumping of road kill, NGTL submits these are outside of the Project scope, and are more appropriately managed through other forums or initiatives.

Reference:

National Energy Board (NEB). 2017. *National Energy Board Filing Manual*. Release 2017-01. Available at: https://www.neb-one.gc.ca/bts/ctrg/gnnb/flngmnl/flngmnl-eng.pdf.



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TransCanada
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2021 NGTL System Expansion Project

2021 NGTL System Expansion Grizzly Bear Zones

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N

wood.

February 2019

Figure SCN 3.1

IR Number: SCN 3.2

Category Wildlife and Wildlife Habitat

Topic: Woodland (Boreal) Caribou Impacts Within the Little Smoky Range

Reference:

(i) Environment Canada. 2012. Recovery Strategy for the Woodland Caribou (Rangifer tarandus caribou), Boreal population, in Canada. Species at Risk Act Recovery Strategy Series. Environment Canada, Ottawa. xi + 138 pp.

(ii) Government of Alberta 2016. DRAFT Little Smoky and A La Peche Caribou Range Plan. June 2, 2016. URL: http://aep.alberta.ca/fish-wildlife/wildlifemanagement/ caribou-rangeplanning/documents/LittleSmokeyAlaPecheRangePlan-Draft-Jun2-2016.pdf (iii) Lesmerises, R., J. Ouellet, C. Dussault, & M.H. St-Laurent. 2013. The influence of landscape matrix on isolated patch use by wide-ranging animals: conservation lessons for woodland caribou. Ecology and Evolution 3:2880-2891.

(iv) Liatila, J., A. Moilanen and F. M. Pouzols, 2014. A method for calculating minimum biodiversity offset multipliers accounting for time discounting, additionality and permanence. Methods in Ecology and Evolution 2014, 5, 1247- 1254.

(v) Moilanen, A., A.J.A. van Teeffelen, Y. Ben-Haim, and S. Ferrier. 2009. How much compensation is enough? A framework for incorporating uncertainty and time discounting when calculating offset ratios for impacted habitat. Restoration Ecology 17:470-478.

(vi) Curran, M., S. Hellweg and J. Beck, 2014. Is there any empirical support for biodiversity offset policy? Ecological applications, Vol. 24, No. 4, 617-632.

(vii) Poulton, D. W. 2018. Offsetting for caribou: an assessment framework for the Northwest Territories. Poulton Environmental Strategies Inc., Feb. 2018.

(viii) Nova Gas Transmission Ltd, Environmental and Socio-economic Assessment, June 2018, Appendix I Preliminary Caribou Habitat Restoration and Offset Measures Plan - A6F4R2

Preamble: Given the existing conditions within the Little Smoky boreal (woodland) caribou range, it is SCN's perspective that no development should be

approved within the Little Smoky range until habitat is sufficiently recovered to support woodland caribou without additional interventions (i.e., predator control, fencing). The proposed pipeline intersects boreal caribou habitat and will further reduce habitat suitability, which is already far below the disturbance threshold (65% undisturbed habitat is the threshold for achieving a 60% chance of a self-sustaining population based on reference i; Little Smoky currently has 5% undisturbed habitat). In this context, any further disturbance must be considered significant. It is assumed that without other interventions, given the habitat conditions in this range, the entire Little Smoky range is a population sink for woodland caribou. Ongoing predator control (undertaken since 2005) is maintaining caribou populations in this area, but the costs in the absence of strong measures to reverse habitat impacts are considerable.

Reference (viii) describes the Caribou Habitat Restoration and Offset Measures Plan (CHROMP). SCN has opted to focus attention on the CHROMP; there are problems with how impacts to woodland caribou are presented in the main body of the ESA, which should be addressed but are less critical than the key issues at hand: ensuring caribou habitat is restored in the Little Smoky range within the proposed timeline laid out in the range plan, and gradually reducing the need for predator control in this area to maintain caribou populations.

Based on SCN's review of the CHROMP (reference viii), we do not agree with the use of 30.8 ha as the amount of new habitat that will be disturbed (Table 2-1), nor do we agree with the Initial Offset Value calculation of 14.7 ha. Given the current context in the Little Smoky range (95% disturbed) and the uncertainty with respect to the effectiveness of habitat restoration for improving survival of woodland caribou, using an IOV of 14.7 ha, when the total proposed project footprint within the Little Smoky range is 186.2 ha, puts the Applicant and the project at a very high risk of failing to fully offset the impact to woodland caribou from the proposed pipeline. The applicant has calculated an IOV that is less than 8% of the total project footprint, by assuming other mitigation measures (e.g., building on existing footprint, planting in disturbed areas) will fully mitigate impacts across the remaining 92% of the proposed pipeline route. There are a number of reasons why we do not agree with these assumptions and the resulting IOV calculation:

1. The CHROMP (reference viii) states that 87.9 ha of the proposed pipeline overlaps with existing disturbance (primarily NGTL GPML) and should therefore not be considered for offsetting. However, regardless of the condition of the "existing disturbance

area", the entire Little Smoky range is designated as critical habitat for woodland caribou. Based on how critical habitat is defined in the 2012 Recovery Strategy (reference i), none of the habitat within the range is currently suitable. However, it is all capable of becoming suitable woodland caribou habitat, given enough time to recover. This proposed construction will push the restoration timeline back by at least 25 years within the entire footprint of the pipeline, particularly within the area that will be maintained in an early seral condition.

2. It is not clear what the current degree of recovery is on the "existing disturbance area"; regeneration of greater than 0.5 m in height may provide some benefit to woodland caribou.

3. Confidence in offsetting is low, and an abundance of literature supports this uncertainty:

   - Reference (iv) notes that offsets exchange certain losses for uncertain gains; too often offsetting is only partially successful or it may be impossible to truly recover losses; it is often impossible to guarantee that offsetting areas will be protected from other disturbances or in perpetuity.
   - In their comparative modelling exercise, Curran et al. (2014) (reference vi) show that with passive restoration of second growth, species richness (one measure of recovery) takes more than a century to converge with the expected species richness in old growth forests. Other measures of recovery take even longer (e.g., species similarity takes about twice as long to converge, assemblage composition can take up to an order of magnitude longer). Based on their results, active restoration can accelerate the process but the long-time lags, uncertainty, and risk of restoration failure require much larger offset ratios than what is currently applied in practice. Their analysis suggests that current restoration offset policy (i.e., the accepted 3 or 4 to 1 ratios typically used to offset development) leads to a net loss of biodiversity.
   - Reference (v), Moinlanen et. al. (2009) suggest higher ratios should be used as a precaution.
   - Reference (vii) Poulton (2018) suggests that uncertainty of offsetting should be used to determine the set of multipliers to consider in different conditions.

4. The proposed pipeline will indirectly affect habitat within at least 500 m of the proposed route, rendering adjacent habitat unsuitable for woodland caribou for an additional 25 years;

5. The entire footprint within the Little Smoky range is 186.2 ha; however, construction of the pipeline outside of the range, within the area designated as Zone 2 in reference (ii), will affect predator-prey dynamics within the range itself (reference (iii) Lesmerises et al. 2013); therefore this area should be included in the offsetting calculation;

Given these considerations, it is SCN's position that the applicant has seriously underestimated the amount of habitat required for offsetting.

The approach for calculating the IOV as described in Annex A will always be less when a project is proposed in highly disturbed habitat—in other words, under the exact conditions where a higher mitigation ratio should be required because of baseline habitat conditions. Looked at in this way, the applicant's approach for calculating the IOV is deeply flawed and must be reconsidered. Both the governments of Alberta and Canada have clearly stated that the objective within the Little Smoky range is to recover habitat to the minimum threshold of 65% undisturbed. Alberta's Little Smoky and A La Peche Range Plan (reference ii) involves a phased approach towards habitat recovery in the range to 65% undisturbed habitat within 40 years. Predator control is currently used in the range to maintain caribou populations; this approach is being used to stabilize the caribou population over the short term. The long term goal of the Little Smoky range plan is "to achieve a level of habitat that will enable self-sustaining caribou populations without the need for direct actions to reduce predation" (reference ii, p. 2-3). The phased approach is described in Section 4.1 of the report, and includes an initial intent (0-5 years) to minimize and mitigate new development, while restoring all historical footprint, to establish a trajectory towards 65% undisturbed habitat and manage biophysical habitat attributes (reference ii, p. 5).

Request:

(a) What is the amount of critical caribou habitat that will be impacted by the proposed project? This is critical to clarify because it is the basis for establishing the offsetting requirement. To accurately determine how much habitat should be considered as the basis for calculating offsetting, we request that the applicant:

- Provide an estimate of the amount of "existing disturbance area" that currently has tree or shrub regeneration at greater than 0.5 m in height, to determine whether these areas should

be considered to be providing reduced predator access into intact woodland caribou habitat; any areas that meet this minimum regeneration requirement should be considered as additional areas of impact to be included in the IOV calculation. Note that this information will also be useful for identifying areas where HDD or other measures should be considered to reduce the impact to woodland caribou from the proposed construction;

- Provide the total footprint area outside of the Little Smoky range but within Zone 2, as impacts within this area will affect predator-prey dynamics within the range and should be considered as part of the offsetting measures;
- Provide a rationale for why the entire footprint falling within the Little Smoky range should not be designated for offsetting, given that habitat disturbance will push the restoration time frame back by a least 25 years. At a minimum, any portion of the footprint that will be maintained in an early seral condition should be considered for the maximum offsetting ratio (i.e., up to 12 m width over the entire pipeline length, including the length of the pipeline that falls within Zone 2). With 43.9 km of pipeline falling within the Little Smoky Range, and 12 m width maintained in early seral, the absolute minimum habitat to be considered for the maximum offsetting ratio should be 526,800 m^2 or 52.68 ha.

(b) Given the existing state of the habitat (95% disturbed) and the targets within the DRAFT Government of Alberta range plan for the Little Smoky range (reference ii), SCN requests that the applicant use and provide a more robust framework for calculating the offsetting requirement, such as the following:

- the total footprint within the range that will be maintained in an early seral condition to be offset at a minimum 4:1 ratio;
- the total footprint within the range that will be impacted by construction to be offset at a minimum 3:1 ratio;
- the total footprint outside the range but within Zone 2 to be offset at a minimum 2:1 ratio.1 These numbers may be reduced if the applicant agrees to reducing the footprint of the proposed pipeline by using horizontal directional drilling (HDD) to selectively maintain habitat in areas where adjacent habitat is intact.

(c) Given the fact that the proposed project is adjacent to an existing active pipeline (GPML), the Applicant should clarify how targeting the GPML for restoration will improve habitat condition overall for woodland caribou. SCN is requesting:

- A clearer rationale explaining how offsetting the proposed pipeline by restoring along the adjacent GPML pipeline will reduce habitat disturbance within the range;
- A list of other areas that could be put forward for restoration, which would result in an improvement in overall habitat condition within an area of the Little Smoky range that is currently highly used by boreal caribou and can be protected from further impacts, based on management objectives defined by the provincial government.

(d) To reduce the effects of the Project on boreal caribou habitat, the applicant has suggested four possible project specific mitigations that may be considered. SCN is requesting much more detail about these project specific mitigations to understand how project effects may be reduced. In particular, SCN requests the following:

- That the applicant consider use of HDD to reduce the effects of the pipeline on woodland caribou habitat. To guide where HDD could be used during construction to reduce project effects, SCN requests that the applicant put together the following information:
  - provide a map showing areas adjacent to the proposed pipeline route that currently have intact habitat or regeneration that is greater than 0.5 m in height and of sufficient density to be limiting line of sight and/or predator access along the existing line;
  - develop a plan to include HDD in these areas for pipeline construction, to reduce habitat fragmentation.
- That the applicant include much more detail in the CHROMP about proposed habitat restoration / tree planting outside of the 12 m wide operational ROW.
  - Provide site-specific prescriptions for upland sites and lowland sites, describing what species will be planted in what density;
  - Provide the timeline and trajectory for vegetation recovery in upland sites and lowland sites, including summarizing the risk of failure / likelihood of success for speeding up regeneration in these areas;

- Describe how regeneration success will be monitored over time to ensure regeneration is occurring, and how areas will be in-filled as necessary to ensure recovery outside of the 12 m operational ROW.

(e) SCN requests that the applicant provide a rationale for any proposed construction that will occur within the critical timing window for woodland caribou. In the absence of a strong rationale, SCN recommends that all construction occur outside of the critical timing window for woodland caribou.

(f) In Section 5.0 of the CHROMP (reference viii), the applicant has provided a theoretical summary of what they will include in the Caribou Habitat and Offset Implementation Report and Monitoring Program (CHOIRMP).

- SCN requests that the Applicant develop a detailed monitoring and adaptive management plan at this time, including an explanation of how additional measures will be used where restoration and offsetting goals are not being achieved. This information is necessary to evaluate whether sufficient effort is being placed on monitoring restoration success, and is critical for determining whether the risk to woodland caribou is sufficiently reduced to allow this project to be approved.

Response:

NGTL notes the conclusion in No. 4 of the preamble is inaccurate because the habitat is in use now both on and off the right-of-way (ROW) according to the published telemetry data from the Province of Alberta's information which includes recently cleared areas. NGTL is also unclear on the background and/or rationale for the stated timeline of 25 years associated with the indirect disturbance. The 500 m buffer mentioned is incorporated into the disturbance calculations in the Project's Caribou Habitat Restoration and Offset Measures Plan (CHROMP).[1]

(a) Pipeline planning and routing is a key tool to minimize the amount of new disturbance in sensitive areas. For the Project, routing focused on maximizing the amount of overlap between the Project ROW and previously disturbed land within the Little Smoky Caribou Range (Range).

As stated in Section 12 of the ESA, all undisturbed habitat in the range was considered critical habitat.[2] This was incorporated into the quantification of disturbance and calculation of offsets. The Project's total habitat disturbance was quantified using a

[1] NEB Filing ID: A92619-19.
[2] NEB Filing ID: A92619-13.

method consistent with the Recovery Strategy for the Woodland Caribou (*Ranger tarandus caribou*), Boreal Population, In Canada (Environment Canada 2012). As described in the Project CHROMP,[3] the result was that of the 186.2 ha total Project construction footprint area within the Range, 87.9 ha of the Project ROW overlapped existing disturbances (NGTL's Grande Prairie Mainline (GPML), cutlines, seismic lines, roads, cutblocks and wellsites). This results in the Project directly affecting 98.3 ha of habitat within the Range and indirectly affecting 0.5 ha of habitat in the Range (when applying a 500 m buffer around all disturbances within the Range). This considered the construction and operational footprint of the Project, and accounted for overlap with existing disturbances.

NGTL agrees that research indicates reduced predator movement is caused by regenerating vegetation at heights as low as 0.5 m (Dickie et al. 2017). Further, many of the mitigation, restoration, and offset methods employed by NGTL (e.g., minimal surface disturbance tree planting, snow ramping, etc.) accelerate revegetation of the construction footprint to heights that may be effective in this way. For the purposes of calculating offset values to align with the Federal Recovery Strategy (Environment Canada 2012) and the Draft Provincial Range Plan (AEP 2017) areas with such vegetation heights are considered to be disturbed. As such, NGTL's restoration and offset measures incorporate temporal multipliers to account for the delay of revegetation after restoration and offset measures are applied. For these reasons, an assessment of lower height and/or regenerating vegetation is not considered to be beneficial.

NGTL will implement mitigation in the new disturbance areas to reduce the effect of the Project. Offsetting is based on the residual effect of the Project, after the implementation of mitigation. As shown in Table 4-1 of the CHROMP, the residual effect after mitigation, including uncertainty and time lag of the mitigation, is expected to be 14.7 ha.[4] The final offset value will be calculated after the actual construction footprint has been determined and once restoration activities, offset locations and offset measures have been identified.

(b) NGTL's method for offset valuation, as presented in the CHROMP, is a defensible approach that has been accepted by the NEB for previous NGTL projects including:

- 2017 NGTL System Expansion Project (Northwest Mainline Loop - Boundary Lake Section)[5]
- NGTL Smoky River Lateral Loop[6]

[3] NEB Filing ID: A92619-19, ESA Appendix I.
[4] *Ibid*
[5] NEB Filing ID: A77316.
[6] NEB Filing ID: A96356.

- NGTL Leismer Kettle River Crossover Project[7]

The offset valuation method includes the use of several multipliers to account for delivery, spatial and temporal risks specific to the proposed offset habitat and habitat restoration measures, as well as an inherent effect multiplier. The rationale for each multiplier was provided in Annex A of the CHROMP.

As noted in the NEB Report for the 2017 NGTL System Expansion Project, a fixed ratio (e.g., 4:1) does not consider any variables or specific risks associated with different conditions. The Board's Report also expressed concern that a fixed ratio may remove incentive for the proponent to avoid new cut and parallel existing disturbance, or to ensure that the offset measures selected would be effective, or incorporate the timing of implementation or proximity of offsets. NGTL's approach is more considerate of site-specific circumstances reflected by a wide variety of mitigation and habitat-related variables.[8]

Zone 2 is identified in the Draft Little Smoky A La Peche Caribou Range Plan (Draft Plan) (AEP 2016) where it may be used in the future for coordinated access management purposes as part of large land use planning initiatives. NGTL will be implementing access control on its ROW in the range and will align with this Draft Plan by implementing its access control on the Project Footprint, as well as on the parallel NGTL dispositions in woodland caribou range to apply corridor-level management.

(c) Rationale for implementing woodland caribou habitat offsets on the existing GPML was detailed in Section 4.2 of the Project CHROMP (ESA Appendix I).[9] As a result of recent work and consultation with Alberta Environment and Parks (AEP), NGTL offset planning now focuses on existing NGTL and TransCanada ROW features that were not actively restored in the past. AEP and Environment and Climate Change Canada (ECCC) have both supported restoration of existing pipeline disturbances as offsets.

Developing offsets along the adjacent GPML provides NGTL an excellent opportunity to implement corridor-level restoration activities in conjunction with construction and restoration of the Project. Coordinating restoration activities along the GPML with Project construction provides NGTL an opportunity to initiate restoration prior to and early in the Project construction period, where feasible, rather than waiting until construction and clean-up activities are complete. NGTL will aim to implement certain offsets prior to construction of the Project and in coordination with the Smoky River Lateral Loop Project. Early implementation of offset measures assists in minimizing temporal lag and has been supported by ECCC in consultation with the Project. Being under NGTL operational control provides reasonable assurance that the offset measures

[7] NEB Filing ID: A42334.
[8] NEB Filing ID: A91997-2 at PDF pages 217 to 223.
[9] NEB Filing ID: A92619-19.

will be protected in the long-term on the GPML. Applying corridor-level restoration and offsets allows for a group of linear disturbances to be treated at once. For these reasons and those detailed in the CHROMP, GPML is the focus of detailed restoration and offset planning for the Project.

(d) Four Project-specific restorations and offset measures were presented in Section 3.3 of the CHROMP (ESA Appendix I),[10] and a description of each is provided in Table 3-1, Annex A:

- access management
- habitat restoration/tree planting
- natural revegetation snow ramping, extension of bore crossings and shrub staking.

The CHROMP documents early planning procedures and approaches, decision logic and rationale, as well as initial estimations of the areas of habitat disturbance, restoration and offsets. As Project planning progresses, pending regulatory approvals, NGTL will continue to incorporate additional information into the detailed, site-specific planning of habitat restoration and offsets. Additional information to be considered will include, for example:

- Information gathered from regulatory consultation and engagement with Aboriginal groups
- Site-specific conditions, including vegetation types, state of vegetation re-growth, and restoration practices to best fit the sites and logistical constraints
- Construction method and footprint information (e.g., locations of grading, mulching and minimum surface disturbance construction techniques, or areas with stability or erosion concerns)
- Remote camera data including human and incidental wildlife movement and access.

Horizontal directional drilling (HDD) and other trenchless methods of pipe installation capable of crossing large distances require significant workspace near the drill entry and exit locations for drill pads, drilling equipment, mud handling, mud disposal, and pipe set up area. Trenchless methods also require access to large amounts of water, which can be limited during winter months. Furthermore, the typical duration for trenchless pipe installation is much longer than for trenched methods. For these reasons, HDD will not be included as an effective mitigation measure for pipeline construction in woodland caribou range.

[10] NEB Filing ID: A92619-19.

The approach to restoration was provided in Section 3.2 of the CHROMP (ESA Appendix I)[11], including how site-specific prescriptions would be applied using decision frameworks. Detailed restoration and offset mapping would be conducted based on the final construction footprint.

Risks associated with time lag and success/failure of restoration and offset measures were discussed in the CHROMP and incorporated into the multipliers used in quantifying offset values. As a result, this risk was built into the planning and implementation of restoration and offset measures.

The final CHROMP will include a detailed offset plan, including the final plan for the GPML offset measures, and will be implemented once the plan has been finalized through ongoing engagement with regulators and stakeholders.

Success of restoration and offset measures will be monitored based on the detailed monitoring plan to be filed with the National Energy Board (NEB; the Board) as per the schedule laid out in the CHROMP and/or NEB conditions for the Project (see Section 5 of the CHROMP [ESA Appendix I])[12]. NGTL has existing woodland caribou habitat monitoring activities designed to ensure long term success of restoration and offsets previously filed with the Board. Adaptive management of restoration and offset measures will be implemented according to the monitoring plan to ensure appropriate corrective actions are taken, where required. The most recent example of NGTL's woodland caribou monitoring plan is Liege Lateral Loop No. 2 – Revised Monitoring Program.[13] The monitoring program for the Project will incorporate lessons learned from ongoing monitoring efforts and be incorporated into NGTL's woodland caribou monitoring activities.

(e) The Caribou Protection Plan Guidelines and Caribou Calving Information (GOA 2012) recommends a timing restriction of February 15 to July 15 to reduce impacts to pregnant cows and their calves, and encourages companies working in woodland caribou range to plan for early entry and exit dates to avoid the sensitive timing window. The Government of Alberta's Master Schedule of Standards and Conditions (2018) identifies the following timing considerations for pipeline construction and operation in woodland caribou range:

- The disposition holder shall not conduct any site preparation or construction on any of the lands within woodland caribou range between February 15 and July 15, with the following exceptions:
    - Site preparation, construction or operational work/maintenance initiated on a disposition between July 15 and February 15 can continue if adverse ground conditions are not encountered.

[11] NEB Filing ID: A92619-19.
[12] NEB Filing ID: A92619-19.
[13] NEB Filing ID: A93698-1.

- Site preparation must be at least 50% completed prior to February 15 to continue with the construction of the activity.
- All activities contained within 100 m of existing arterial all-weather roads can be initiated at any time (including after February 15) provided ground conditions are favourable, and adverse ground conditions are not encountered.

There are no federal requirements specific to timing windows for activity within boreal woodland caribou ranges.

As shown in Figure 2.6-1 (Section 2.6) of the ESA,[14] pipeline construction is proposed to start in Q3 2020 and be completed in Q1 2021. To minimize work within the critical timing periods in woodland caribou ranges, clearing and construction of the Project is scheduled to begin as soon as regulatory approvals are received, pre-construction compliance has been completed, and frozen ground conditions allow. In general, construction activities will be sequenced to include activities with the highest level of disturbance to caribou (e.g., clearing, grading and trenching) prior to February 15.

The current schedule, mitigation, restoration, and offset plans for the Project have been developed to protect woodland caribou and their habitat without compromising safety. The Project aligns with the provincial "early in, early out" recommendations, avoiding the February 15 to July 15 timing window as much as practical and completing the activities with the highest potential for sensory disturbance prior to the timing window. However, there is potential that some activities could extend past February 15. The alternative would involve suspending activities within the woodland caribou range after February 15 and resuming activities to complete construction the following winter.

Completing all construction activities within a single winter season will result in less sensory disturbance to wildlife than the alternative of completing construction over two consecutive winter seasons. In addition, it would delay the implementation of caribou habitat restoration.

If construction should extend into the critical timing period for woodland caribou, NGTL will implement the following mitigation measures to minimize potential adverse effects:

- initiate activity as early as possible in the winter to limit late winter activities in the range
- consult with AEP should construction activity occur in caribou range between February 15 and July 15
- NGTL representatives will maintain an open line of communication with the appropriate regulators prior to and for the duration of the Project

[14] NEB Filing ID: A92619.

- establish and enforce speed limits on all access used for the Project to reduce the risk of wildlife/vehicle collisions
- stop vehicles/equipment and allow the caribou to move through the area undisturbed and report the sighting to the Environmental Inspector who will contact AEP, if caribou are encountered. Advise others working nearby of the presence of caribou in the area and refer to the Wildlife Species of Concern Discovery during Construction Plan.
- mitigate sensory disturbance by ensuring activities occur along and within existing roads and ROW wherever feasible
- prohibit Project personnel from harassing or feeding wildlife
- increase workforce resources in construction to increase productivity, to the extent feasible
- begin hydrostatic testing of welded pipe as soon as feasible
- complete clean-up and reclamation the following season, outside of the critical timing period.

f) The CHROMP documents early planning procedures and approaches, decision logic and rationale, as well as initial estimations of the areas of habitat disturbance, restoration and offsets. As Project planning progresses, pending regulatory approvals, NGTL will continue to incorporate additional information into the detailed, site-specific planning of habitat restoration and offsets. The final CHROMP will include a detailed offset plan, including the final plan for the GPML offset measures, and will be implemented once the plan has been finalized through ongoing engagement with regulators and stakeholders.

The CHROMP included an outline of what information will be included in the Caribou Habitat and Offset Implementation Report and Monitoring Program (CHROIRMP).[15] The monitoring program was discussed in Section 6.1, and included Tables 6-1 and 6-2, which contained the proposed monitoring performance indicators.

See response to part (e) for details on NGTLs caribou habitat monitoring activities and adaptive management.

Reference:

Dickie, M., R.S., Serrouya, C. DeMars, J. Cranston. and S. Boutin. 2017. *Evaluating Functional Recovery of Habitat for Threatened Woodland Caribou*. Ecosphere. 8(9): e01936. 10.1002/ecs2.1936.

[15] NEB Filing ID: A92619-19, Appendix I, Section 5.2.

Environment Canada. 2012. Recovery Strategy for the Woodland Caribou (Rangifer tarandus caribou), Boreal Population, in Canada. Species at Risk Act Recovery Strategy Series. Environment Canada. Ottawa, Ontario. xi + 138 pp.

Alberta Environment and Parks (AEP). 2016. Draft Little Smoky and A La Peche Caribou Range Plan. Alberta Government. 21 pp.

Alberta Environment and Parks (AEP). 2017. Draft Provincial Woodland Caribou Range Plan. Alberta Government. 212 pp.

Government of Alberta (GOA). 2018. Master Schedule of Standards and Conditions. December 2018. Available at website: https://open.alberta.ca/dataset/133e9297-430a-4f29-b5d9-4fea3e0a30c2/resource/aa3e5504-22c8-472d-8ab5-35b99c07b74a/download/masterschedstandardsconditions-dec18-2018.pdf

NOVA Gas Transmission Ltd., Environmental and Socio-economic Assessment, June 2018, Appendix I Preliminary Caribou Habitat Restoration and Offset Measures Plan – NEB Filing ID: A92619-19.

IR Number: SCN 4.0

Category Water Quality and Quantity

Topic: Potential Surface Water Contamination During Construction

Reference:

(i) Nova Gas Transmission Ltd, Environmental and Socio-economic Assessment, June 2018, Section. 8.5.2, Surface Water Quality, p. 8-52 - A6F4Q4.

(ii) Canadian Council of Ministers for the Environment (CCME). 2015. Water Quality Guidelines for the Protection of Aquatic Life, Summary Table. Winnipeg, MB.

(ii) Alberta Environment and Sustainable Resource Development (ESRD). 2014. Environmental Quality Guidelines for Alberta Surface Waters. Water Policy Branch, Policy Division. Edmonton. 48 pp

Preamble: Watercourses within the RSA are important drinking water sources for SCN members when out on the land. SCN members are concerned that current drinking water sources in the RSA may be contaminated during construction operations. Reference (i) indicates that the magnitude of predicted residual effects for surface water quality is low, however this assessment is based upon guidelines specific to the health of aquatic life (references ii, iii) which does not assume human consumption. It is also not clear whether surface water quality assessments have taken into consideration human health or the possibility of contamination from accidental release of deleterious substances during construction and operation (e.g., hydrostatic test water additives, herbicides, gasoline, diesel fuel, oil or lubricant).

Request:

(a) Please describe how human health has been considered in the assessment of residual effects of surface quality water.

(b) Please outline how contamination of surface water by deleterious substances will be monitored during construction and whether ongoing assessments of surface water quality will take into consideration effects on human health.

Response:

(a) Section 20.2 of the ESA[1] provided an assessment of the potential effects from the Project to human health. This assessment included an evaluation of the potential

[1] NEB Filing ID: A92619-15, PDF page 129.

impacts to human health from potential effects to surface water quality. The assessment found that, given the implementation of the mitigation in the Project Environmental and Protection Plan (EPP),[2] the predicted residual effects to surface water quality would be not significant as the extent of these effects were within the local study area (a localized impact), low in magnitude (i.e., predicted to be within the range of baseline values and regulatory guidelines), and immediate to short-term in duration (e.g., majority of potential increases in suspended solids following construction activities is unlikely to exceed one week). Therefore, a change in human health to reduced water quality beyond guideline values was not expected to occur and residual effects to human health were not predicted.

(b) The ESA found that there will be no changes in human health related to water quality beyond guideline values. The implementation of the mitigation in the EPP will reduce the duration and magnitude of predicted residual effects to surface quality from construction activities. The majority of releases on a construction project are categorized as small or low impact. In the event of an accidental release (i.e., spill), the Release Contingency Plan will be applied, as described in Appendix 1E of the EPP.[3] As stated in Section 4 of the EPP, all releases will be reported according to federal and/or provincial requirements.

Mitigation measures for Release Prevention and Containment were provided in Section 8 of the EPP and included the following:

> *68. In the event of a release of any size, the Contractor shall immediately report the release to the Environmental Inspector(s) or designate(s).*
>
> *69. Appropriate release prevention and response, containment and recovery equipment will be maintained at all work sites, in accordance with the Chemical and Waste Management Plan (Appendix 1F).*
>
> *70. If an accidental release does occur, measures to control, contain, recover and clean up the release are to be implemented immediately to reduce the potential for adverse environmental and human health effects, or to ensure the release does not spread or increase in size. Refer to the Release Contingency Plan (Appendix 1E).*
>
> *71. All equipment shall arrive on the Project free of leaks and in good working condition. Any equipment which does not arrive free of leaks and in good working condition shall not be allowed on the construction footprint until it has been repaired, re-inspected by the Environmental Inspector(s) or designate(s), and deemed suitable for use.*
>
> *72. The Contractor will ensure equipment is monitored regularly and free of fluid leaks.*

[2] NEB Filing ID: A92619-16.
[3] NEB Filing ID: A92619-16, PDF pages 183-187.

73. Do not wash equipment or machinery within 30 m of watercourses or waterbodies.

74. Equipment to be used in or adjacent to a watercourse or waterbody will be clean or otherwise free of external grease, oil or other fluids, mud, soil and vegetation, prior to entering the waterbody.

75. Bulk fuel trucks, service vehicles, and pick-up trucks equipped with box-mounted fuel tanks shall carry release prevention, containment, and clean-up materials that are suitable for the volume of fuels or oils carried, in accordance with the Chemical and Waste Management Plan (Appendix 1F).

76. Release contingency material carried on bulk fuel and service vehicles, stationed near watercourses or waterbodies, or in environmental response units shall be suitable for use on land and water.

77. Conduct refuelling at least 100 m away from any watercourse or waterbody, when feasible.

78. Employ the following measures to reduce the risk of fuel releases into water. Where equipment refuelling is required within 100 m of a watercourse or waterbody, ensure that:

- *All containers, hoses, nozzles are free of leaks;*
- *All fuel nozzles are equipped with automatic shut offs; and*
- *Always have operators stationed at both ends of the hose during fuelling.*

79. In the event of a release, refer to the Release Contingency Plan (Appendix 1E).

IR Number: SCN 4.1

Category Water Quality and Quantity

Topic: Potential for Recurring Erosion and Sedimentation Issues

Reference:

(i) Nova Gas Transmission Ltd, Environmental and Socio-economic Assessment, June 2018, Section. 9.5.2.3 Introduction of Sediment into Watercourses during Construction or Reclamation and Operation, p. 9-39 - A6F4Q5.

(ii) Nova Gas Transmission Ltd, Environmental and Socio-economic Assessment, June 2018, Section. 9.3 Potential Effects, p. 9-19 - A6F4Q5

Preamble: Reference (i) states that "the introduction of sediment into watercourses could have adverse effects to surface water quality and fish habitat" (p.9-39) and is of particular concern at proposed crossings of class B watercourses due to their sensitivity to disturbance. While reference (i) indicates sedimentation would be short-term, reference (ii) states 'inadequate reclamation and stabilization of banks and riparian vegetation, may result in ongoing or recurring erosion issues' (p. 9-19) which could lead to continuing issues with increased sedimentation and TSS above baseline levels.

Request:

(a) Please outline how post-construction monitoring for the effectiveness of reclamation and erosion mitigation will ensure sedimentation and TSS do not exceed baseline during Project operations. Outline how post-construction monitoring of surface water quality will address the potential for recurring erosion to adversely affect sensitive fish habitat.

(b) The prevention of recurring erosion and sedimentation issues is dependent on effective rehabilitation of disturbed riparian areas. Please outline how affected First Nations will be involved in the post-construction monitoring and adaptive management program for effective revegetation of disturbed riparian areas, and how to ensure monitoring will address re-disturbance by post-construction routine maintenance and recreational users of the ROW.

Response:

Regarding the statement above in the preamble that "the introduction of sediment into watercourses could have adverse effects to surface water quality and fish habitat" (p.9-39) and is ***of particular concern*** at proposed crossings of class B watercourses due to their

sensitivity to disturbance" (emphasis added), "of particular concern" appears to be an error in reference to the ESA, Section 9.5.2.3 – Introduction of Sediment into Watercourses During Construction or Reclamation and Operation.

(a) Seasonal variability in TSS from year to year is high due to changes in flow levels, precipitation and land uses, making such measurements unsuitable as baseline data for site-specific construction activities. The water quality guideline for the protection of aquatic life for suspended sediment is expressed as a relative increase from background (i.e., upstream) concentrations (CCME 2002). When the monitoring of suspended sediment is warranted during pipeline construction, downstream suspended sediment concentrations (usually measured as turbidity) are compared to instantaneous upstream concentrations at the site, as these data best reflect the potential effect of the Project activity on water quality.

Following final construction cleanup, Post-Construction Monitoring (PCM) activities[1] will be conducted for the Project to identify any unresolved environmental issues and, where warranted, supplemental or remedial measures will be developed in consultation with regulatory agencies and implemented to resolve any outstanding issues. The Project will follow TransCanada's PCM methodology as outlined in the ESA and/or other Project-specific environmental documents, which ensures compliance with specific reclamation performance expectations and applicable regulatory requirements. Mitigation methods will be based on the principle that success of land reclamation is measured against adjacent representative site conditions while taking into consideration the status of reclamation of the time of assessment. This typically involves monitoring the banks and approach slopes of the watercourse crossings for environmental issues which could potentially affect fish or alter fish habitat, such as, bank stability, morphology, invasive species, revegetation success, soil erosion and sedimentation, as well as the evaluating the effectiveness of post-construction erosion and sediment control measures.

(b) Planning for the PCM activities involves post-construction consultation with relevant regulatory authorities, Aboriginal groups, and stakeholders within the construction footprint after final clean-up in order to address and/or resolve any concerns. NGTL will remain available to discuss and, where possible, address any concerns Samson Cree Nation may have during operation and maintenance of the Project.

Information gathered through on-going engagement will be considered in Project planning, including Environmental Alignment Sheets, as appropriate, and NGTL will further incorporate input or issues identified during construction into the PCM methodology. For example, sites or resources of concern will be appropriately mitigated during construction, clean up and reclamation, and success will be measured in following growing seasons. In addition, NGTL will continue to respond

[1] NEB Filing ID: A92619-15, Section 25.0 and NEB Filing ID: A92619-16, EPP.

to any Aboriginal group concerns post-construction, and address potential issues on a case-by-case basis, should any arise.

The scope and nature of a project must be considered when determining the need for and/or scope of Aboriginal involvement in PCM activities. NGTL's understanding of Aboriginal involvement in post-construction monitoring activities is that it should be fit-for-purpose, focused on addressing outstanding issues and be specific to the phase of the project most appropriate for addressing the issue. A tailored program for Aboriginal involvement in PCM helps ensure meaningful participation by aiming for issue resolution and alignment with groups' specific protocols, reduce unnecessary capacity or resource constraints on Aboriginal groups that could arise from blanketed or 'token' involvement and avoid increasing potential interactions that may affect of impede reclamation success. NGTL requires additional information from Aboriginal groups to understand the interest in and specific issues to be addressed by involvement in post-construction monitoring programs before it can determine Aboriginal involvement opportunities to best address post-construction specific issues, if any.

Reference

Canadian Council of Ministers of the Environment. 2002. Canadian water quality guidelines for the protection of aquatic life: Total particulate matter. In: Canadian environmental quality guidelines, 1999, Canadian Council of Ministers of the Environment, Winnipeg.

IR Number: SCN 4.2

Category Water Quality and Quantity

Topic: Indigenous Engagement for Beaver Trapping

Reference: (i) Nova Gas Transmission Ltd, Environmental and Socio-economic Assessment, June 2018, Section. 8.4, Mitigation Measures, p. 8-38 - A6F4Q4

Preamble: In the event that beaver dams or lodges will be disturbed or removed during construction, reference (i) indicates that a registered trapper should be engaged. Beavers are ecological keystones to wetland function and culturally important to SCN members and other Indigenous Groups. SCN and other Indigenous Groups should be involved in co-managing trapping efforts with first opportunity to undertake trapping required for mitigation measures during construction operations.

Request: (a) Please describe opportunities for affected Indigenous Groups to work with NGTL to develop a beaver management plan including the process for engaging trappers in removal of beavers and beaver dams and lodges.

Response:

(a) In the event that beaver dams or lodges will be disturbed, NGTL is committed to working with the registered trapper with the trapping rights to the area where dam removal might be necessary, to assist in the harvesting of beavers and removal of dams. If the local registered trapper or the adjacent trappers decline the opportunity for beaver removal, then NGTL expects to engage the nearby potentially-affected Aboriginal group to arrange beaver removal. NGTL will continue to address questions and concerns from Aboriginal groups through its ongoing engagement efforts, including regarding beaver management, should any arise.

IR Number: SCN 4.3

Category Water Quality and Quantity

Topic: Physical Disturbance or Damage to Stream Bed or Banks

Reference:

(i) Nova Gas Transmission Ltd, Environmental and Socio-economic Assessment, June 2018, Section. S. 9.4.1.3, Trenchless Crossings, p. 9-35 - A6F4Q5

(ii) Nova Gas Transmission Ltd, Environmental and Socio-economic Assessment, June 2018, 9.5.2.1, Physical Disturbance or Damage to Stream Bed or Banks, p. 9-38 - A6F4Q5

(iii) Nova Gas Transmission Ltd, Environmental and Socio-economic Assessment, June 2018, S. 9.3 Potential Effects, p. 9-19 - A6F4Q5

Preamble: Reference (i) indicates trenchless crossing methods may be considered for watercourses with sensitive and/or high-value fisheries. In reference (ii) a total of 15 of the 157 potential watercourses for the Project are class B (i.e., watercourses that have high sensitivity from instream activity), but only 7 crossings (Wapiti River, Smoky River, Simonette River, Little Smoky River, McLeod River, Pembina River, North Saskatchewan River) are proposed to use trenchless methods.

Request:

(a) Please indicate whether trenchless methods will be employed at the proposed class B watercourse crossings. If this is not possible at specific crossings, please indicate why.

(b) Reference (iii) indicates recurring erosion and sedimentation may persist or develop after completion of construction and site reclamation activities. For any class B watercourses that are proposed to be trenched, please outline how post-construction monitoring and adaptive management strategies will ensure the ongoing protection of sensitive fish habitat at these crossing sites.

Response:

NGTL has reviewed the preamble to the request and advises Samson Cree Nation that the number of proposed crossings using a trenchless method has been reduced to six with the removal of the Simonette River from the list which as part of NGTL's Additional Written Evidence on December 18, 2018.[1]

[1] NEB Filing ID: A96812-1.

In addition, NGTL would like to clarify the Class B designations. The Province of Alberta has designated the Little Smoky River and two unnamed watercourses (crossing #DV-WC27 and DV-WC34) as Class B streams. The remaining un-named tributaries in this area are assumed to be Class B based on their proximity to these Provincially Designated Class B streams (as defined in the CoP section 7(4)(b)(ii).

(a) One Class B stream will be crossed using a trenchless technique while the remaining 8 will use a trenched, isolated method if water is present at the time of Project construction. Of the original 15 Class B watercourses, seven were determined through field surveys to have no visible channel and were classified as drainages that do not support fish or fish habitat. These seven drainages will be crossed using a trenched method. Watercourse DV-W31A, was omitted from the Aquatics technical data report submitted as part of the September 2018 supplemental filing but was corrected as errata as part of NGTL's Additional Written Evidence filing. For the remaining Class B watercourse crossings (nine in total) NGTL applied the watercourse crossing framework as outlined in Figure 9.4-1, Section 9 of the ESA.[2] Using this framework, only the Little Smoky River was determined to be a candidate for a trenchless crossing. Fish and fish habitat assessments were completed for these watercourses upstream and downstream of the selected crossing locations and additional information is available in the Table 3.3-4 for the Deep Valley, Section 3.3.2 of the Aquatics technical data report.[3] These remaining eight watercourses have relatively narrow channel widths (< 3m), and shallow depth (<0.75 m) and can be crossed with the proven isolated trenched crossing method. The fish habitat assessments completed showed that the majority of these crossings had poor to moderate rearing, spawning and overwintering habitat, with substrates having a high degree of fines. Of these watercourses, two have historic records of forage species being present (i.e., longnose sucker), one forage species (brook stickleback) was captured at one watercourse crossing, and the remaining four have no records nor were fish captured at the crossing, further supporting the NGTL decision to use a trenched isolated method of crossing for these watercourses. NGTL's watercourse crossing decision process is consistent with the Alberta Water Act Code of Practice for Pipelines and Telecommunication Lines Crossing a Water Body crossing hierarchy for crossing of Class B watercourses. Additional information on watercourse crossings including decision matrices are available for download in the Canadian Energy Pipeline Association's recently updated 5th Edition of its Pipeline Associated Watercourse Crossings Fish and Fish Habitat Impact Assessment Tool.[4]

(b) The Post Construction Monitoring (PCM) activities for the Project are described in Section 25 of the ESA. These include the assessment of watercourses post-construction to ensure the effectiveness of erosion and sediment control measures and

[2] NEB Filing ID: A92619-12.
[3] NEB Filing ID: A94156-5.
[4] Available at: https://cepa.com/en/resources/technical-publications/.

of riparian vegetation establishment. PCM activities are completed for all watercourses, including Class B watercourses.

IR Number: SCN 4.4

Category Water Quality and Quantity

Topic: Permanent Disturbance to Wetland Cover

Reference:

(i) Nova Gas Transmission Ltd, Environmental and Socio-economic Assessment, June 2018. Section 10.5.1, Wetland Cover Type Distribution, p. 10-51 - A6F4Q5

(ii) Alberta Environment and Sustainable Resource Development (ESRD). 2013. Alberta Wetland Policy. Available at: http://aep.alberta.ca/water/programs-andservices/ wetlands/documents/ AlbertaWetlandPolicy-Sep2013.pdf.

(iii) Nova Gas Transmission Ltd, Environmental and Socio-economic Assessment, June 2018, Appendix J Preliminary Decommissioning and Abandonment Plan, 1.1 Assessment Scope p. 1 - A6F4R2

(iv) Candler, C. (2012). MCFN Indigenous Knowledge Study for Shell Jackpine Mine Expansion, Pierre River Mine, and Redclay Compensation Lake. Prepared with The Firelight Research Cooperative and the Mikisew Creen First Nation. Edmonton: NP.

Preamble: Reference (i) states that "clearing and stripping for the Project is predicted to result in the alteration of 260 ha of wetland cover". A significant portion of this wetland cover (i.e., treed wetlands in forested areas managed over the 12m wide maintenance width within the ROW centred over the Project pipeline and compressor unit station addition sites) is not expected to fully recover until after the life of the project (undetermined).

According to the Alberta Wetland Policy (ii) a 'temporary wetland impact' is defined as "a negative effect on wetland function that can be restored to predisturbance conditions within a reasonable time frame, as established by regulatory mechanisms". Reference (iii) states that cessation of Project operations "will occur many years in the future…e.g., >25 years". Based on our understanding of 'temporary wetland impact' as defined in the Alberta Wetland Policy (ii), wetland recovery expected "after the life of the project" (i) does not constitute a reasonable time frame and should be considered a permanent loss of wetlands. Furthermore, due to the expected time lag between wetland cover alteration and expected recovery (>25 years), there will likely be considerable loss of ecological and habitat function in the affected areas.

Given the projected time lag for restoration it is anticipated that loss of cultural knowledge transmission and practice associated with these lost wetlands would also be considered permanent (reference iv).

Request:

(a) Please determine the coverage area for wetland cover not expected to be fully recovered until after the life of the Project and develop appropriate offset measures assuming permanent disturbance of these wetlands due to Project activities.

(b) Please describe how climate change has been considered in the assessment of cumulative effects for wetlands.

Response:

(a) Approximately 284 ha (1% of local study area [LSA]) of wetland cover would be affected by the Project Footprint (Additional Written Evidence, Appendix D).[1] Permanent wetland impacts were not anticipated within the pipeline right-of-way (ROW); however, 3 ha of wooded coniferous swamp would potentially be permanently affected by the proposed Nordegg Compressor Station Unit Addition (Additional Written Evidence, Appendix D, Annex C, Section 1.4.1, Table 1.4-1.[2] Alberta Environment and Parks (AEP) has classed wetland disturbances associated with construction of pipeline ROWs and associated pipeline infrastructure as temporary disturbance and *Water Act* Approval can be granted (with an option for extension) for up to 25 years before reclamation commences (GOA 2018, GOA 2019). NGTL believes wetlands will start to revegetate through natural successional processes from existing wetland species seed and plant propagules in the surface organics after construction is completed. For wetlands occurring within the ditchline, natural revegetation of tree species within treed wetlands will occur after decommissioning or abandonment (ESA Section 10.6).[3] Appropriate mitigation or offset measures for wetlands affected by the Project Footprint were fully discussed within the EPP.[4]

(b) NGTL has not evaluated the sensitivity of wetlands within the Project area to climate changes that might be predicted from published climate models and believes that this would be a purely hypothetical exercise. The information on climate change is subject to a large degree of uncertainty and current debate. Most climate change models discuss climate changes over much longer periods than the life of the Project. The incremental loading of greenhouse gases to the atmosphere as a result of the Project were discussed in Section 14.0 of the ESA.[5] Potential changes in climate conditions are not likely to be an issue during the construction phase of the Project.

[1] NEB Filing ID: A96812-14.
[2] NEB Filing ID: A96812-14.
[3] NEB Filing ID A92619.
[4] NEB Filing ID: A94156.
[5] NEB Filing ID A92619.

Over the life of the Project, increases in temperature, rainfall and evaporation as a result of climate change may affect the near surface water table. A hydrological model (Golder 2009) for the Lower Athabasca Regional Plan area estimated the average change in mean annual precipitation would vary from -1 to +7% in the 2010s and from +2 to +13% by the 2050s (Golder 2009). The average increase in mean annual temperature was estimated to vary from 0.66 to 1.52°C in the 2010s and from 1.77 to 4.35°C by the 2050s. It is expected that any predicted increase in precipitation could be offset by the concurrent predicted increase in temperature and evaporation.

In NGTL's view, the level of study and assessment for this Project has been appropriate and sufficient for the NEB to make an informed decision about the likely effects of climate change on the Project.

Reference:

Government of Alberta (GOA). 2018. Wetland Assessment and Impact Form (WAIF). Available at: http://aep.alberta.ca/water/programs-and-services/wetlands/documents/WetlandAssessmentImpactForm-Jul16-2018.pdf. Accessed February 2019.

Government of Alberta (GOA). 2019. Environmental Approvals System (EAS). Initiate New Water Act Application – General Application. Available at: https://www.alberta.ca/assets/documents/eas-water-act-general-guide.pdf. Accessed February 2019.

Golder Associates (Golder). 2009. Hydro-climate Model Selection and Application on the Athabasca and Beaver River Basins. Prepared for Oil Sands Environmental Management Division, Alberta Environment. Calgary, AB.

IR Number: SCN 5.0

Category Environmental Effects on Aborginal People (CEAA S.5(1)(C)

Topic: Inadequacies of Assessment for Current use of Lands and Resources for Traditional Purposes

Reference:

(i) NEB Letter - NGTL - 2021 System Expansion - Notice of Public Hearing and Application to Participate, 5 July 2018, Appendix D: Factors and Scope of the Factors for the Environmental Assessment (EA) pursuant to the Canadian Environmental Assessment Act, 2012 (CEAA 2012) - A6F7S6

(II) Canadian Environmental Assessment Act, 2012. S.C. 2012, c. 19, s. 52. Available at: https://laws-lois.justice.gc.ca/PDF/C-15.21.pdf.

(iii) Nova Gas Transmission Ltd, Environmental and Socio-economic Assessment, June 2018, Section 19 –Traditional Land and Resource Use- A92619

(iv) Nova Gas Transmission Ltd, Environmental and Socio-economic Assessment, June 2018, Appendix K Traditional Knowledge (TK) Report – A6F4R2.

(v) Nova Gas Transmission Ltd, ESA Supplement for Additional Written Evidence 2021 NGTL System Expansion Project, December 2018, Appendix E Supplemental Traditional Knowledge Report - A6Q2Y7.

(vi) Technical Guidance for assessing the Current Use of Lands and Resources for Traditional Purposes under the Canadian Environmental Assessment Act, 2012. December 2015

Preamble: On 5 July 2018 (reference I) the Board released the Factors and Scope of Factors for the Environmental Assessment pursuant to Canadian Environmental Assessment Act 2012 (including s. 5(1)(c)) after receiving NGTL's Application and ESA in June 2018. Section 5(1)(c) in reference II describes environmental effects to be taken into account for Indigenous people:

(c) with respect to aboriginal peoples, an effect occurring in Canada of any change that may be caused to the environment on

- (i) health and socio-economic 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.

Our review confirms that the Application and ESA have substantial gaps in information related to SCN in regards to potential effects of the Project. Specifically, in relation to 5(1)(c)(iii), the limited information related to SCN traditional use of lands and resources within references (iii, iv, and v) precludes the Applicant from identifying interactions between the Project's effects and SCN traditional use as required under section 5(1)(c)(iii), CEAA 2012. Furthermore, references (iii, iv, and v) do not indicate how SCN's forthcoming TUS will inform the assessment of SCN specific 5(1)(c) effects.

References (iii, iv, and v) also take a pan-aboriginal aggregated approach in assessing Traditional Land and Resource ignoring best practice guidance like reference (vi) that requires that, "Information that is gathered from Aboriginal groups by practitioners throughout the five steps [Scoping, Analysis, Mitigation, Significance, Follow-up] needs to be assessed and presented in a manner that reflects each group's individual concerns, issues and interests in relation to the current use of lands and resources for traditional purposes" (p.8). Separate, stand-alone assessments, within each category of effects, for SCN is required to meet federal statutory requirements.

Request:

(a) Please provide a supplemental filing for the assessment on effects of the Project on SCN for5(1)(c) effects, including incorporation of SCN's TUS and provide an updated assessment, using the information provided in SFN TUS, on the valued components identified in the following ESA sections:
- 7.0 Vegetation
- 8.0 Water Quality and Quantity
- 9.0 Fish and Fish Habitat
- 10.0 Wetlands
- 11.0 Wildlife and Wildlife Habitat
- 12.0 Species at Risk
- 17.0 Heritage Resources
- 18.0 Navigation and Navigation Safety
- 19.0 Traditional Land and Resource Use

(b) SCN requests a commitment from the Applicant to consult with SCN regarding the methodologies that will be employed prior to the assessment completed in (a). At minimum, assessments of cultural heritage and Traditional Use should include substantive, interview based data collection for the purposes of establishing a baseline of current conditions and identification of key trends for valued components related to each category.

Response:

(a) As stated in NGTL's Additional Written Evidence,[1] to date, Samson Cree Nation (SCN) has not completed a Traditional knowledge (TK) study for the Project; however, NGTL understands that SCN's TK study is currently in progress and the final TK report is expected by the end of February 2019. Upon receipt, the findings of SCN's TK study will be reviewed in the context of the ESA and considered in Project planning, as appropriate. NGTL will continue to address questions and concerns identified to NGTL by SCN through its ongoing engagement efforts, should any arise.

(b) The Project's assessment methodology complies with the requirements of section 52, NEB Filing Manual guidance, including Table A-3: Filing Requirements for Socio-Economic Elements, and followed standard assessment methods appropriate for the scope and nature of the Project.

The varying nature, scale and setting of each project determine not only the relevant regulatory requirements but are also key considerations in the design of proponent-led engagement programs, the identification of project interactions and potential effect pathways. As part of the iterative five steps in the environmental assessment framework (i.e., scoping, analysis, mitigation, significance, and follow-up) discussed in reference vi (above), NGTL's engagement process for the Project included consultation with SCN and other Aboriginal groups.

[1] NEB Filing ID: A96812-1, PDF page 62.

IR Number: SCN 6.0

Category Environmental Effects on Aborginal People (CEAA S.5(1)(C)

Topic: Lack of SCN Culture and Heritage Resource Data

Reference:

(i) Nova Gas Transmission Ltd, Environmental and Socio-economic Assessment, June 2018, Section 17 -Heritage Resources – A92619

(ii) Nova Gas Transmission Ltd, Environmental and Socio-economic Assessment, June 2018, Section 13 Aboriginal Engagement - A92619

(iii) Nova Gas Transmission Ltd, 2021 NGTL System Expansion Project – Response to NEB IR No. 1, Response to NEB IR 1.29 - A6Q2W8

Preamble: SCN has not been meaningfully included in baseline data collection for the assessment of effects on our Cultural and Heritage resource as evidenced by SCN specific data and information gaps in reference (i) and (ii). Reference (iii) notes that Indigenous groups were not involved in additional heritage studies in October 2018 nor are any additional field studies planned. In addition, the analysis of impacts to Heritage Resources (reference i) in the Environmental and Socio-economic Assessment has been conducted without the benefit of SCN Traditional Knowledge. A robust SCN specific baseline for Culture and Heritage resources must be researched and assessed, including field studies, in order to inform the assessment of s. 5(1)(C) effects.

Request:

(a) Please outline how SCN Culture and Heritage Resource data has been incorporated in the assessment to-date.

(b) Provide details on how gaps in the Application and ESA for SCN specific Culture and Heritage resources will be addressed through opportunities for future heritage field surveys and Culture and Heritage data collection including but not limited to the identification of burial sites, trails, buffalo pounds and other critical SCN culture and heritage locations.

Response:

(a) and (b)

NGTL has been sharing information with Samson Cree Nation (SCN) with respect to the (Grande Prairie South Area [Colt (formerly McLeod River Connection) Section]) component of the Project since August 21, 2017. The results of the Traditional

knowledge (TK) literature review, which included TK information and relevant source data, were shared with SCN and they were invited to review and provide NGTL with feedback. NGTL did not receive any response to that request. On April 25, 2018, NGTL informed SCN that the information would be considered in the TK report and in the Project's ESA. The results of the literature review for SCN were included in the ESA TK Report (ESA Appendix K, Section 1.6.31. TK information from this report has been integrated into the overall ESA and was considered in the identification and assessment of key indicators for traditional land and resource use (ESA Section 19.0), including habitation, spiritual or cultural sites. As stated in NGTL's Additional Written Evidence,[1] to date, SCN has not completed a TK study for the Project, however NGTL understands that SCN's TK study is currently in progress and the final TK report is expected by the end of February 2019. Upon receipt, the findings of SCN's TK study will be reviewed in the context of the ESA and consideration in Project planning, as appropriate. NGTL will continue to address questions and concerns identified to NGTL by SCN through its ongoing engagement efforts, should any arise.

[1]NEB Filing ID: A96812-1, PDF page 62.

IR Number: SCN 6.1

Category Environmental Effects on Aborginal People (CEAA S.5(1)(C)

Topic: Culture and Heritage Mitigation and Monitoring

Reference:

(i) Nova Gas Transmission Ltd, Environmental and Socio-economic Assessment, June 2018, Section 17 -Heritage Resources – A92619

(ii) Nova Gas Transmission Ltd, Environmental and Socio-economic Assessment, June 2018, Section 13 Aboriginal Engagement - A92619

(iii) Nova Gas Transmission Ltd, Environmental and Socio-economic Assessment, June 2018, Appendix A. Environmental Protection Plan for the Proposed NovaGas Transmission LTD 2021 NGTL System Expansion Project, June 2018. A92619

Preamble: SCN has not been adequately incorporated into future Cultural and Heritage Mitigation plans (references i, ii, and iii). In section 17.1.4.1 "Previous Historic Resources Impact Assessments" (reference i) it states that "NGTL has extensive experience working with heritage consultants to manage heritage resources in the region with 31 of the projects listed…" (p. 17-8); however, there is no mention of the involvement of SCN in the development of management plans for heritage resources.

There is no reference to the involvement of Indigenous monitors in the future management plans for Heritage resources. For example, the EPP (reference iii) notes that "supplemental field work will be completed for heritage resource" and that "Results of the field studies will provide site-specific information that may refine mitigation measures included in this EPP" (p. 2); however, there has been no follow-up on the outcome of these plans and how this has led to the incorporation of Indigenous knowledge into the EPP, including SCN knowledge and engagement.

The Cultural Resource Discovery Contingency Plan (iii) does not adequately involve the relevant Indigenous Nation throughout the Plan. For example, the relevant Indigenous Nation should be informed of the find at Step One "Encounter"; however, in the Plan the Nation is not informed of the find until Step Three "Consultation and Engagement". The relevant Nation should be involved in the Plan as one of the consulting specialists in instances of finds in their territory.

Request:

(a) Describe how and when SCN will be involved in developing relevant mitigation for the protection of our Culture and Heritage Resources including the process for incorporation of our input into a Culture and Heritage Resource Plan.

(b) Explain whether and how the EPP will incorporate the use of SCN Indigenous monitors and consultants in the development of additional mitigation measures for Heritage Resources through ongoing field work and engagement programs.

(c) Outline whether and how, in the case of a chance find relevant to SCN, SCN will be informed as soon as the find is made (Step One) and how SCN will be consulted on the approach as a specialist (e.g. as an Indigenous monitor) throughout the Plan.

Response:

(a) through (c)

NGTL has been engaging SCN since August 2017 regarding the Colt Section and since February 2018 concerning the overall Project. In April 2018, NGTL requested input from SCN on the community-specific Traditional Knowledge (TK) literature review completed for the Project's ESA. NGTL did not receive any response from SCN. In addition, in May 2018 NGTL provided funding to assist SCN to conduct their own community directed TK study for the Project.

NGTL will continue to address questions and concerns from SCN regarding cultural and heritage resources through its ongoing engagement efforts, should any arise. Upon receipt of the findings from SCN's TK study for the Project NGTL will review the information in the context of the ESA and consideration in Project planning, including the EPP, as appropriate. NGTL will also provide SCN with responses and proposed mitigations measures to any concerns SCN raises and offer to answer any questions or discuss concerns, if any. See NGTL's response to NEB 1.29.[1]

In the unlikely event cultural resources are identified during Project construction, NGTL confirms that SCN will be informed in the case of a find relevant to SCN upon completion of the initial assessment (Step 2), which is necessary to confirm a find and document information relevant to facilitate clear and meaningful information to Aboriginal groups during Step 3. Should a member of SCN be participating in the Aboriginal Construction Participation Program (ACPP) during the discovery, the participant will observe and assist in the implementation of the contingency plan, including working with the ACPP Coordinator to notify the appropriate lands

[1] NEB Filing ID: A96810.

department of its discovery and follow the steps outlined in the Cultural Resource Discovery Contingency Plan to determine appropriate mitigation measures.

Engagement between SCN and NGTL for the Project is ongoing and will continue to provide further opportunities to share information about SCN's interests in the Project area, including cultural and heritage resources, and any potential issues, concerns or recommendations that SCN may have about the Project.

IR number: SCN 7.0

Category Environmental Effects on Aborginal People (CEAA S. 5(1)(C))

Topic: Indigenous Navigation

Reference:

(i) Nova Gas Transmission Ltd, Environmental and Socio-economic Assessment, June 2018, Section 18 –Navigation and Navigation Safety- A92619

(ii) Nova Gas Transmission Ltd, Environmental and Socio-economic Assessment, June 2018, Section 19 –Traditional Land and Resource Use- A92619

(ii) Candler, C., R. Olson, S. DeRoy and the Firelight Group Research Cooperative, with the Athabasca Chipewyan First Nation. 2010. As Long As The Rivers Flow: Athabasca River Use, Knowledge and Change. ACFN Community Report.

Preamble:

Section 18, Navigation and Navigation Safety (reference i), and Section 19, Traditional Land and Resource Use (reference ii), make minimal reference to Indigenous Navigation and Indigenous use of watercourses. The baseline for navigation conditions within the LSA was developed without the benefit of SCN Traditional Knowledge and Traditional Use Data. Reference (i) states that "Navigation and navigation safety were selected as VCs because … navigation has been identified as an important local traditional land use (see also Section 19.0)" (p. 18-3); however, no information is provided on how indigenous navigation and use of waterways was considered in the effects assessment or mitigation plans (reference i). Additionally, there is also no reference to how SCN was involved in setting or evaluating mitigation plans.

Reference (iii) proposes two thresholds (an aboriginal base flow, and an aboriginal extreme flow) for use in understanding the effects of water levels and the ability of Indigenous Nations to access their territories, and it makes recommendations for implementing and refining management. This is a fundamental concept for the Applicant to consider in its baseline studies, effects assessments, and future mitigation plans in relation to Navigation.

Request:

(a) Provide details on how SCN Traditional Knowledge was incorporated in setting baseline conditions with respect to navigation including a description of what opportunities were provided for SCN input on and evaluation of baseline conditions within the LSA.

(b) Provide details on how SCN's forthcoming TUS will be incorporated into the ESA prior to completion of the assessment process.

(c) Provide details on how SCN will be incorporated in future monitoring and evaluation with respects to waterways and navigation during construction and cleanup.

(d) Identify whether and how aboriginal base flow (reference iii) was considered for understanding the effects of water levels on the ability of SCN to access their territories. Explain how this will be incorporated into future studies and mitigation plans including opportunities for SCN involvement.

Response:

(a) NGTL has been engaging SCN since August 2017 regarding the Colt Section and since February 2018 concerning the overall Project. The results of the SCN Traditional Knowledge (TK) literature review, which included TK information and relevant source data, were shared with SCN and they were invited to review and provide NGTL with feedback. NGTL did not receive any response to that request. On April 25, 2018, NGTL informed SCN that the information would be considered in the TK report and in the Project's ESA. The results of the literature review for SCN was included in the ESA TK Report,[1] however, the results do not include information on navigation. As stated in NGTL's Additional Written Evidence,[2] to date, SCN has not completed a TK study for the Project; however, NGTL understands that SCN's TK study is currently in progress and the final TK report is expected by the end of February 2019. Upon receipt, the findings of SCN's TK study will be reviewed in the context of the ESA and consideration in Project planning, as appropriate. NGTL will continue to address questions and concerns identified to NGTL by SCN through its ongoing engagement efforts, should any arise.

(b) Upon receipt, the findings of SCN's TK study will be reviewed in the context of the ESA and consideration in Project planning, as appropriate. NGTL will continue to address questions and concerns identified to NGTL by SCN through its ongoing engagement efforts, should any arise.

(c) NGTL will be developing an Aboriginal Construction Participation Program (ACPP) for the Project which will provide opportunities for community members to grow their skills and understanding of NGTL's construction activities and environmental protection measures, which, in NGTL's view, fosters lasting and mutually beneficial relationships. The ACPP Plan is informed by results of the biophysical field programs

[1] NEB Filing ID: A92619-19, Appendix K, Section 1.6.27.
[2] NEB Filing ID: A96812-1, PDF page 62.

for the Project, engagement with Aboriginal groups, engagement with federal and provincial government agencies, feedback obtained from participants in monitoring activities on past NGTL projects, experience gained from other pipeline projects, industry accepted best practices and procedures.

(d) Each watercourse and drainage crossed by the Project was assessed for potential navigability at the crossing area in the Navigation and Navigation Safety section of the ESA (Section 18.0) and this assessment was updated in the Supplemental Studies Report for the Proposed 2021 NGTL System Expansion Project, Appendix C.[3] For Aboriginal groups, the ESA baseline assumes these watercourses could be used for traditional purposes such as fishing, hunting and travel (ESA Section 19.0).

The NEB defines a navigable waterway as follows: "a navigable water is considered as any body of water capable, in its natural state, of being navigated by floating vessels of any description for the purpose of transportation, recreation or commerce" (NEB 2017). Based on this definition, the following criteria were used for a watercourse to be considered non-navigable (Transport Canada 2010) (Supplemental Studies Report for the Proposed 2021 NGTL System Expansion Project, Appendix C, Section 2.2):

- average depth measured at high-water level is <0.3 m; or
- average width measured at high-water level is <1.2 m.

If the average width over a 200 m long section is greater than 1.2 m, but not greater than 3.0 m, and one of the following conditions are true, the watercourse may be considered non-navigable:

- average bankfull depth is <0.60 m
- watercourse slope >4%
- sinuosity ratio >2
- there are >2 natural obstacles

The reference cited in (iii) above is specific to the Athabasca River and the particular thresholds mentioned are specific to flows on the Athabasca River that provide the ability of Athabasca Chipewyan First Nation (ACFN) members to access their traditional territories, and to practice Aboriginal and Treaty rights by water. The Project will not be crossing the Athabasca River and Project-related residual effects on water quantity were predicted to be within the LSA (ESA Section 8.0. It would therefore not alter flow conditions nor navigability on the Athabasca River.

In terms of navigation on the watercourses that are crossed by Project, the Navigation and Navigation Safety section of the ESA (Section 18.0) determined that residual effects on navigation were short term with a low likelihood, negative direction, low

[3] NEB Filing ID: A94156.

magnitude, multiple irregular frequency, and reversible. Based on the criteria set out in the ESA (Section 4.3.3), Project effects were predicted to be not significant. No residual effects on navigation safety were predicted. With the implementation of the proposed mitigation identified in Table 18.4–1, the potential residual effect on the safety of users of navigable watercourses was avoided.

Reference:

National Energy Board (NEB). 2017. *Filing Manual*. Available at: https://www.neb-one.gc.ca/bts/ctrg/gnnb/ flngmnl/index-eng.html. Accessed 26 March 2018. Transport Canada. 2010. *Minor Waters User Guide* – TP 14838.

IR Number: SCN 7.10

Category Vegetation

Topic: Indigenous Navigation

Reference:

(i) EPP Appendix 1E; A92619-11 11 ESA Section 7 Vegetation pages 7-1 to 7-90

(ii) Alberta Sustainable Resource Development, Public Lands and Forests Division, Forest Management Branch. Version 4.1. April 2006. Alberta Forest Management Planning Standard Annex 4 Performance Standards. Accessed February 29,2019 https://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/formain15749/$FILE/ForestManagementPlanningStandard-2006.pdf

(iii) Ollerton, Jeff. November 2017. Pollinator Diversity: Distribution, Ecological Function, and Conservation Annual Review of Ecology, Evolution, and Systematics Vol. 48:353-376

Preamble:

SCN knowledge holders are concerned about impacts to culturally important plants and associated plant communities and to biodiversity, including the critical ecological role of bees and other invertebrates. Maintaining a diversity of culturally important plant species requires healthy and functioning ecological communities. SCN knowledge holders are concerned about Project contributions to loss of biodiversity, including culturally important plants, and resulting ecological impacts on other living beings. Recent work confirms that pollinators provide a critical ecosystem function (reference iii). Loss of pollinators in Alberta are likely a result of a combination of factors including the loss of diversity of plant species. Maintaining a diversity of plants is a key component of maintaining healthy pollinator populations (in particular wild bees) and vice versa. Currently pollinators are declining at local, regional, and global scales, in both diversity and abundance (reference iii). Without healthy and diverse populations of culturally important plants, and of pollinators, SCN is concerned that many culturally important plants will not propagate naturally, with resulting ecological impacts, and impacts on SCN way of life.

In addition, SCN members are concerned that culturally important plants and ecosystems including grasslands, wetlands, and mature or old forest are already limited in the LSA. SCN is concerned that the current assessment does not clearly identify strategies for retaining an adequate representation of sensitive ecosystem types or attributes to support the

cultural and ecological function of grasslands, wetlands, habitat for pollinators and mature or old growth forest. These ecosystems are of disproportionately high value for wildlife, culturally important plants and cultural use.

According to reference (ii) the Alberta Forest Management Planning Standards (2006) The plan for retaining structure must be reported in the EMP; and "Targets and seral stage definitions shall be based on sound science, ecological considerations, wildlife zones, and disturbance regimes. Target shall ensure representation of natural range of ecosystem attributes (e.g., productivity class)" page 95.

In addition SCN members have identified a concern regarding Project related impacts on SCN confidence in wild foods, including food plants, resulting from increased industrial footprint and reduced confidence in harvesting of wild foods in the vicinity of pipelines. Increased risk of exposure to contaminants, uncertainty regarding the use of herbicides and increased industrialization of indigenous landscapes resulting in impacts to SCN sense of place.

Request:

(a) How was the historical distribution (pre-development) of plants and plant communities and the natural disturbance regime considered in the impact assessment for this study? How were conditions and resources necessary for SCN exercise of inherent and Treaty No. 6 rights considered in developing the impact assessment for vegetation?

(b) What are the restoration targets for these sensitive seral stages, plants and ecosystems and how have SCN's inherent and Treaty No. 6 rights been considered in developing these targets?

(c) How has ecological function for the plant communities considered the potential project and cumulative effects on pollinators.

(d) How has the Applicant addressed best practices for ROW management to increase confidence of SCN members in harvesting culturally important plants in the vicinity of the project? For example, using manual brushing and avoidance of all broadcast spraying of herbicides in the Project area. Where herbicide spot spraying is required for invasive species, has the Applicant developed management protocols such as: clear durable delineation of the sprayed area with clear signage in Cree and English with required removal of fencing and signage at the end the treatment.

(e) How will the community be engaged in a culturally appropriate program to enhance SCN confidence in berries, medicines and other harvest resources along or in the vicinity of the ROW?

Response:

(a) The Project ESA[1] followed the requirements of the NEB's Filing Manual and *Canadian Environmental Assessment Act* (CEAA) 2012, which are intended to evaluate the potential for, and avoid, significant adverse effects of a designated project. Pre-development conditions may be completely unrelated to the Project and go beyond the scope of an assessment required by the NEB and CEAA 2012.

The natural disturbance regime within the vegetation valued component (VC) was considered in the ESA in the context of forest pests, (Section 7.0) and the effects of flooding and forest fires (Section 22.0).[2] The historical distribution of rare plant species within the Project local study area (LSA) was identified using the Alberta Conservation Information Systems (ACIMS) database (Section 7.1.4.5) and a representative list of existing plant species within the LSA was provided in the Supplemental Studies Report for the Project, Appendix E.[3] Traditional plant species harvested within the LSA, were identified through traditional knowledge (TK) studies completed for the Project and review of existing data sources (ESA Appendix K, TK Report), are listed in Section 7.1.4, Table 7.1-23.

Project effects on vegetation were assessed in ESA Section 7.0.[4] Effects on vegetation key indicators (e.g., vegetation cover types and observed rare plants and tracked ecological communities) were presented in Table 7.5-1 and described in Section 7.5.[5] Project effects on vegetation were considered in the assessment of the traditional plant harvesting key indicator in Section 19.5.4 of the Traditional Land and Resource Use (TLRU) assessment (ESA Section 19.0)[6] as related to potential disturbance to plant harvesting areas, access to areas and species availability and quality. Project effects on traditional plant harvesting activities were predicted to be low in magnitude, short-to long-term and irreversible to reversible. Based on the criteria set out in the ESA (Section 4.3.3),[7] Project and cumulative effects were predicted to be not significant.

(b) After construction on Crown lands, the Project right-of-way (ROW) will be allowed to revegetate through natural succession to an earlier seral stage in forested areas,

[1] NEB Filing ID: A92619.
[2] NEB Filing ID: A92619.
[3] NEB Filing ID: A94156.
[4] NEB Filing ID: A92619.
[5] NEB Filing ID: A92619.
[6] NEB Filing ID: A92619.
[7] NEB Filing ID: A92619.

supplemented by seeding of sensitive areas such as watercourse banks and slopes where required. The edge of the ROW on the side abutting the remaining forested areas is allowed to naturally revegetate which, over time allows for an incursion of local species of shrubs and large diameter woody vegetation creating a diverse edge effect. However, the large diameter woody vegetation (tall growing tree and shrub species) is controlled periodically within the 12 m wide maintenance zone over the buried pipeline. To date, Samson Cree Nation (SCN) has not completed a TK study of the Project. Upon receipt, the findings of SCN's TK study will be reviewed in the context of the ESA and consideration in Project planning, as appropriate.

(c) Project effects on vegetation cover types were assessed in ESA Section 7.0. Predicted residual effects for vegetation, including loss or alteration of vegetation cover types were presented in ESA Section 7.5, Table 7.5-1, and based on the criteria set out in the ESA (Section 4.3.3), were predicted to be not significant.

The cumulative effects assessment for vegetation was addressed in Section 7.6.[8] The results were provided in Table 7.6-1 and discussed in Section 7.6.1. Based on the criteria set out in the ESA (Section 4.3.3), cumulative effects were predicted to be not significant. Restoration of natural vegetation communities along the ROW will also restore natural ecological function, including the distribution of natural pollinators (e.g., bees) in the LSA.

(d) Vegetation management will be implemented in accordance with the TransCanada Integrated Vegetation Management Program (TransCanada 2009) and TransCanada's Procedure for Invasive Vegetation Weed Control Management Canada (TransCanada 2013) during the construction and operations of the Project. As outlined in the Project Environmental Protection Plan (EPP) (ESA Appendix A),[9] the general application of herbicide near rare plants or rare ecological communities will be prohibited. Spot spraying, wicking, mowing, or hand-picking are acceptable measures for weed control in these areas. The use of herbicides within 30 m of an open body of water will be prohibited, unless the herbicide application is conducted by ground application equipment, or otherwise approved by the appropriate regulatory agency. In order to commit to restricting the general application of herbicides near traditional land use sites, NGTL requires specific locations of traditional land use sites that are located on or adjacent to the Project Footprint and that can be clearly delineated and mapped. NGTL will consider information gathered during ongoing engagement with SCN in Project planning, including the EPP and Environmental Alignment Sheets (EAS) filed prior to construction, and will continue to address questions and concerns from SCN regarding vegetation management through its ongoing engagement efforts should any arise.

[8] NEB Filing ID: A92619.
[9] NEB Filing ID: A92619.

(e) As stated in the Application,[10] upon completion of construction, the Project will be transitioned to TransCanada's Public Awareness (PA) Program which includes sharing information related to TransCanada's Integrity Management Program and Emergency Management Program. One of the goals of the PA Program is to maintain contact with Aboriginal groups, landowners, community groups, contractors and emergency service agencies that might be directly affected by NGTL facilities or operations. The PA Program is designed to increase awareness of pipeline safety, which includes providing safety messaging on special incident response notification and/or evacuation procedures, as appropriate. Aboriginal groups are encouraged to contact NGTL if they have any questions or concerns about the safety of the pipeline or permitted activities on the ROW, and NGTL will coordinate with the group to arrange appropriate methods of information sharing.

Reference:

TransCanada 2009, TransCanada Integrated Vegetation Management Program TransCanada 2013, TransCanada Operating Procedure for Invasive Vegetation Weed Control Management Canada

[10] NEB Filing ID: A92619-1; Section 10.1.6.

SAMSON CREE NATION

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FILE No:

April 18, 2019

National Energy Board
Suite 210, 517 Tenth Avenue SW
Calgary, Alberta T2R 0A8
Attn: Sheri Young, Secretary for the Board

Re: Nova Gas Transmission Line (NGTL) 2021 Project – April 18, 2019 NEB Filing deadline to submit written evidence

Samson Cree Nation and NGTL concluded a TK Study Protocol. In order to carry out the plan set out in the TK Study Protocol and meet the deadline we are filing 1. Preliminary TK Study Report which a copy will be sent to the NGTL Project team directly from Samson Cree Nation and 2. A Cumulative Effects Assessment Report prepared for Samson Cree by and in consultation with technical experts the Firelight Group.

Once Samson Cree Nation and NGTL have had the ability to discuss the preliminary TK Study Report, Samson Cree will be submitting the full TK Study Report, through a motion, with the hope that the Board considers it during the hearing.

Furthermore, that Samson Cree Nation has provided list of participants for the Oral Traditional Evidence (OTE) Hearing whereby one of our participants intends on submitting further evidence on Samson Cree's relationship to the Little Smoky Caribou Herd at that hearing.

With that, I trust this shall suffice. Should you require further information please feel free to contact via email to Kaylyn@samsoncree.com.

Respectfully,

Kaylyn Buffalo
Samson Cree Nation
Consultation Project Officer
/klb

1. INTRODUCTION

This technical memorandum (the "Memo") provides a high-level summary of Samson Cree Nation (SCN) traditional knowledge and use data documented in the vicinity of Nova Gas Transmission Ltd.'s (the "Proponent") 2021 NGTL System Expansion Project (the "Project"). This Memo details the limitations of the analysis, methods of analysis, a summary of initial findings including key SCN concerns, and concludes with a recommendation for next steps.

As mentioned in SCN's Comments on Updated Consultation Logs, dated March 21, 2019 (A98447 – 1), SCN and the Proponent concluded the TK Study Protocol. In accordance with the TK Study Protocol, SCN agreed to provide to the Proponent an interim TK Study report. The Parties agreed to follow up on queries by the Company and provide supplementary information as required and request. SCN agreed to finalize the TK Study report and incorporate relevant Company feedback.

In order to complete this process, SCN has delivered a copy of this Memo or interim TK Study report, and concurrently filing a copy with the Board. Once the TK Study review process is completed, SCN intends to file a copy of the full report to the Board through a motion and proper regulatory procedures.

The final TK Study report will assess the seriousness of the potential impacts that the Project activities may cause to SCN's Inherent and Treaty No. 6 rights and interests.

There is additional field work that we had hope to reflect in this Memo, including work relating to SCN's relationship with caribou and the Little Smoky caribou herd.

1.1 LIMITATIONS

Limitations of this Memo include the following:

- The information presented in this Memo is limited to the current Project Study Area (the Project Footprint, Local Study Area [LSA], and Regional Study Area [RSA] combined and as defined in Section 2) and should be considered preliminary and subject to revision. A more complete characterisation of SCN knowledge and use values in the area of the Project, and the Project's likely effects on SCN rights and interests (including use of lands and resources) will require further analysis.

- An important limitation is that mapped data included in this Memo were not collected for this specific study or Project, and not all SCN knowledge holders are represented in these data.

- Data reported in this Memo are limited by what participants were able and willing to report.

- Site-specific mapped values (e.g., cabins and kill-sites) reflect particular instances of knowledge or use that anchor wider practices of culture, livelihood, and other Treaty and Aboriginal rights within a particular landscape. For example, a single moose kill-site may be mapped with a precise point, but that point does not capture the network of hunting trails used by the hunter in order to

make that kill, nor the areas of good quality habitat needed to sustain moose populations. Therefore, the area demarcated by mapped site-specific knowledge and use values should be understood to be a small portion of the actual area required for the meaningful practice of a SCN way of life, as well as Treaty and Aboriginal rights.

- Due to a lack of accompanying methodological documentation and metadata, precise information about the number of individuals represented by the data, time of data collection, and data reliability and validity cannot be verified. The qualitative and site-specific data can only be used to provide a preliminary indication of SCN values present in the Study Area.

It is important to note that this Memo does not reflect all SCN current knowledge and use in the vicinity of the Project, and **an absence of data does not signify an absence of use or value.**

This Memo is based on the understandings and analyses of the authors and is not intended as a complete depiction of the dynamic way of life and living system of use and knowledge maintained by SCN members.

This Memo is non-confidential and intended for consideration by the community and by the Proponent within the Project regulatory process. However, all data included in this Memo is the property of the SCN, and may not be used or reproduced outside the Project regulatory process without the written consent of the SCN.

Nothing in this Memo should be construed as to waive, reduce, or otherwise constrain SCN rights within, or outside of, regulatory processes. Nor should this Memo be construed to define, limit, abrogate, derogate or otherwise constrain the Inherent or Treaty No. 6 rights of other First Nations or Aboriginal peoples. It should not be relied upon to inform other projects or initiatives without the written consent of the SCN.

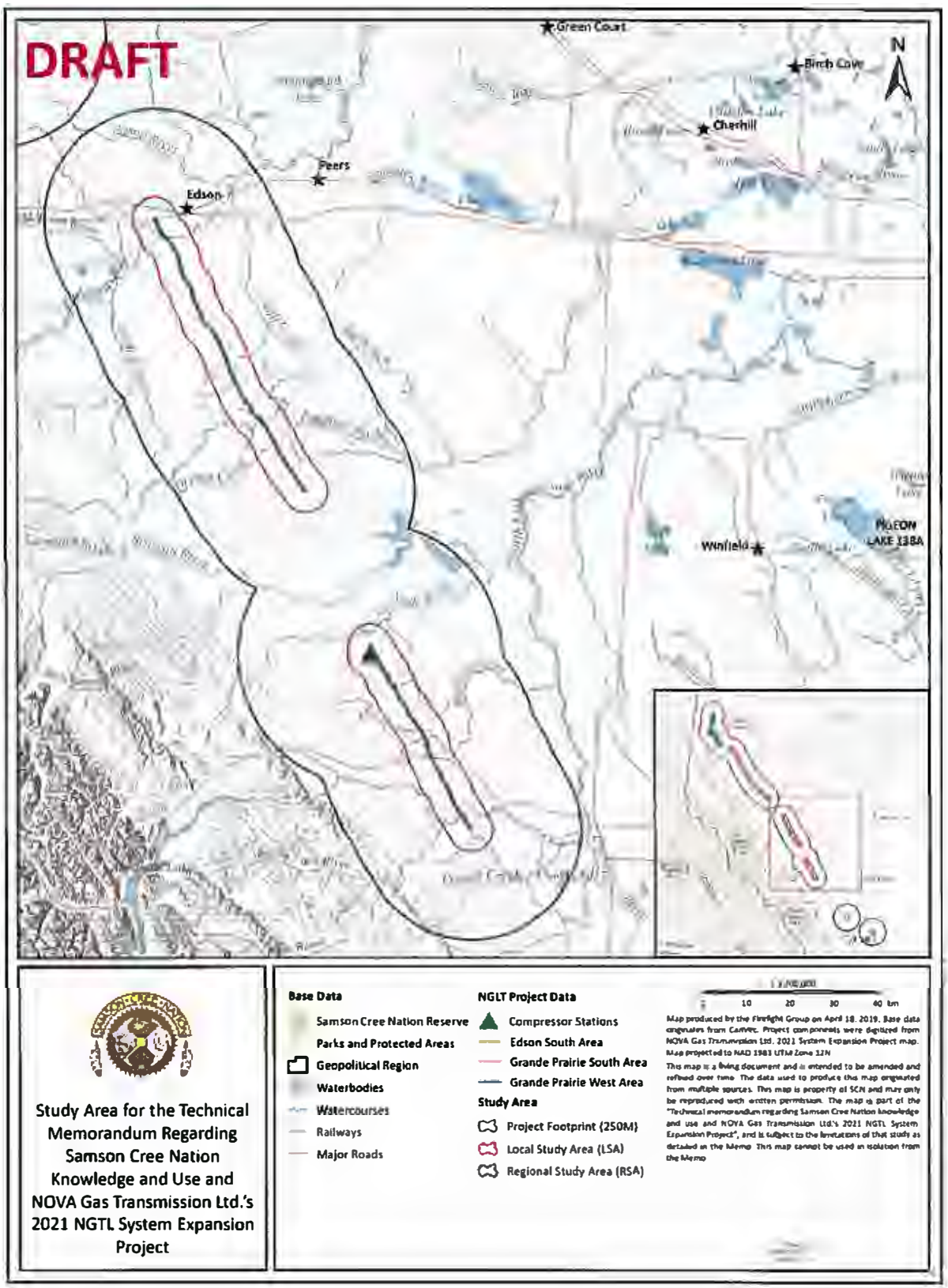

Figure 1: NOVA Gas Transmission Ltd.'s 2021 NGTL System Expansion Project with the Project Footprint, LSA, and RSA.

2. METHODS

The knowledge and use data contained within this Memo represent incidental mapped information collected by SCN hunters while out on the land in the winter of 2018-2019, and qualitative data from hunter reports, and qualitative data from SCN elders from a Project engagement efforts conducted internally by SCN on November 28, 2018. Mapped data collected by SCN hunters were recorded using electronic tablets (Kyra Northwest, pers. comm.), while qualitative data collected from elders and hunters were provided in written form.

For the purpose of this Memo, *site-specific data* are knowledge and use values reported by SCN members that are specific, spatially distinct, and that may be mapped (however, exact locations may be treated as confidential). Maps of site-specific values presented in this Memo are generated from incidental data mapped during SCN hunting excursions. For this Memo, points have been randomised within a 250 m radius and then buffered by one kilometre. Buffering is done to account for a margin of error and to protect information confidentiality.

The data reported in this Memo are focused around the proposed Project Footprint (within 250 m of the Project, and where available, related physical works, access routes, and activities)[1], Local Study Area (LSA; within 5 km of the proposed Project)[2], and Regional Study Area (RSA; within 25 km of the proposed Project)[3]. The Footprint, LSA, and RSA combined are henceforth referred to as the Study Area. See Figure 1 for a map of the Project Study Area.

Site-specific data are organised according to five 'Activity Class' categories that are designed to capture multiple aspects of SCN values:

- Habitation values (including temporary, occasional, seasonal, permanent camps and cabins, etc.);
- Cultural and spiritual values (including burial sites, ceremonial areas, community gathering areas, etc.);
- Subsistence values (including harvest and kill-sites, plant collection areas, trapping areas, etc.);

[1] To designate the Project Footprint, a 250 m zone of influence (ZOI) around the Project's physical footprint is used to document the Project's impacts, based on evidence that this distance is a reasonable approximation of a zone within which the abundance of wildlife and land use by humans may be altered (MSES 2010).

[2] Five kilometres is an approximation of the distance easily travelled in a day from a point of origin (e.g., a cabin, camp, or other location), by foot, through bush, and back again, as when hunting (Candler et al. 2010). It is used as a reasonable spatial approximation of use surrounding a given transportation or habitation value. Direct and indirect Project effects may interact with SCN values in this area.

[3] The RSA is a broad area within which direct and indirect effects of the Project, such as noise, dust, odours, access management activities, traffic, effects on water, and other forms of disturbance, may be anticipated to interact with cumulative effects, causing additive or synergistic effect with impacts to community values.

- Environmental feature values (including specific, highly valued habitat for moose, elk, and deer, visual sightings of wildlife, animal tracks and trails, etc.); and

- Transportation values (including trails, water routes, navigation sites, etc.).

Importantly, the mapped data captured by SCN hunters were not originally organised using the Activity Class categories above. For the purposes of this analysis and presentation, the mapped data were condensed and reclassified where defensible (see Appendix 1 for specifics). Where mapped points contained insufficient information to be categorised by Activity Class, they were kept separate.

Due to a lack of accompanying methodological documentation and metadata, precise information about the number of individuals represented by the data, time of data collection, and data reliability and validity cannot be verified. The qualitative and site-specific data can only be used to provide a preliminary indication of SCN values present in the Study Area.

3. RESULTS

As noted in Section 1.1 of this Memo, **an absence of data does not signify an absence of use or value**. In addition, not all SCN knowledge holders are represented in the data. The above limitation is a necessary consideration when interpreting the geographic distribution and quantity of mapped values. It is possible that new information regarding use by SCN members will become available in the future.

The site-specific data clearly demonstrate that SCN members continue to occupy and extensively use or have used the Study Area. Additionally, the Study Area contains numerous important sites including environmental features as well as subsistence values. These include, but are not limited to:

- Evidence of wildlife including visual sightings, tracks and trails, and habitats;
- Plant gathering sites; and
- Sites used for harvesting wildlife.

In total, 102 site-specific values were reported in the Study Area (see Table 1 and Figure 2).

Table 1: SCN site-specific values reported within the Footprint, LSA, and RSA of NOVA Gas Transmission Ltd.'s 2021 NGTL System Expansion Project. Numbers are cumulative with increasing spatial scales (i.e., RSA includes LSA and Footprint).

Site-Specific Value Category	Within 250 m of the Footprint		Within 5 km of the Footprint		Within 25 km of the Footprint	
	# of reported values	% of reported values	# of reported values	% of reported values	# of reported values	% of reported values
Environmental Feature	85	95.5%	89	92.7%	91	89.0%
Subsistence	4	4.5%	5	5.2%	9	8.9%
Undefined Ungulate	-	-	2	2.1%	2	2.0%
TOTAL	**89**	**100%**	**96**	**100%**	**102**	**100%**

3.1.1 Site-Specific Values Reported in the Footprint

Within the Footprint, SCN members reported 89 site-specific values. Site-specific values reported in the Footprint include:

- **Environmental Feature** values, including: tracks from animals including deer, moose, elk, wolf, fox, and rabbit; rub marks from elk; bedding areas; a nest; scratch marks from black bear; wildlife trails used by elk, deer, wolf, moose, and rabbit; and sightings of ravens, deer and mallard duck; and
- **Subsistence** values, including: kill sites for fox and wolf; and gathering sites for sweet pine.

3.1.2 Site-Specific Values Reported in the LSA

Within the LSA, SCN members reported 96 site-specific values. In addition to the site-specific values described for the Footprint, SCN members also reported the following site-specific values in the LSA:

- **Environmental Feature** values, including: tracks from bobcat and elk, and sightings of moose;
- **Subsistence** values, including: a moose kill site; and
- **Undefined Ungulate** values, including: for moose and deer.

3.1.3 Site-Specific Values Reported in the RSA

Within the RSA, SCN members reported 102 site-specific values. In addition to the site-specific values described for the Footprint and LSA, SCN members also reported the following site-specific values in the RSA:

- **Environmental Feature** values, including: wolf tracks and visual sightings of lynx and wolf; and
- **Subsistence** values, including: kill sites for spruce grouse, deer, elk, and moose.

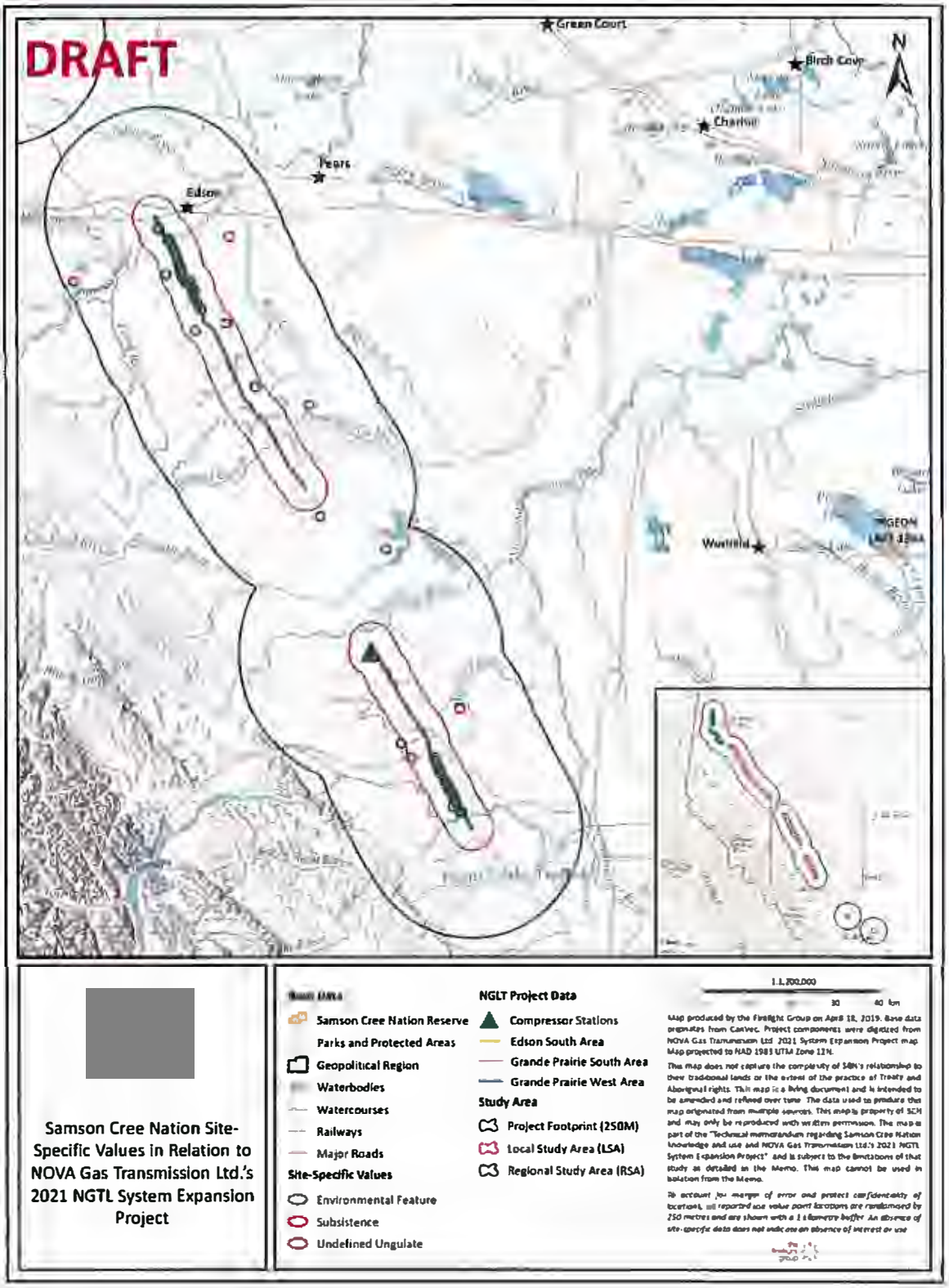

Figure 2: SCN reported site-specific values within the Footprint, LSA, and RSA of NOVA Gas Ltd.'s 2021 NGTL System Expansion Project.

4. KEY SCN CONCERNS

Samson's inherent and Treaty No. 6 rights are highly constrained and in a sensitive current state. In and around the Project area is of critical importance to SCN and SCN members' ability to meaningfully exercise their rights.

High constrained means that access and harvest is not possible in some years, and/or otherwise constrained below the level desired to meet the need of SCN and SCN members. The sensitive current state refers to the current state of the ability of SCN's members' to meaningfully exercise rights at the territorial scale.

The mapped site-specific data, as reviewed in Section 3.1, suggest that the Study Area is of ongoing importance for SCN members and supports SCN cultural knowledge and use values. These values include those for water and fish, the harvesting and use of plants and medicines, hunting and trapping, and cultural continuity (e.g., knowledge transmission, sense of place, and identity).

However, SCN hunters and elders have expressed a number of concerns regarding the Project, and in particular, potential effects of the Project on plants (both food and medicinal), water and fishing resources, and terrestrial wildlife (for both hunting and trapping). In many instances, SCN concerns were provided in the context of broader environmental changes and impacts on Treaty rights.

4.1.1 Water and Fishing

One of the chief concerns among SCN members appears to be the safety of water for wildlife and human consumption. In response to questions about the Project, SCN respondents identified lakes and rivers as being at risk, and also described water as their "life blood" and important for Treaty rights. A number of SCN members noted the reliance of fish, terrestrial wildlife, plants (aquatic and terrestrial), and people on water, and many elaborated on the poor state of water in their territory on and off-reserve due to contamination.

4.1.2 Plant and Medicine Gathering

Samson Cree Nation members also expressed concerns about the potential Project effects on plants and medicines that they rely on for food and health. In particular, SCN members identified raspberries, saskatoon berries, goose berries, cedar, and sweet pine being at risk, as well as berries, roots, and medicines more broadly. In their responses to questions on potential Project effects, SCN members described how plant and medicine resources are already in decline, including in abundance and quality. For instance, SCN members described being unable to find sweetgrass, and dying and declining abundances of plants and medicines.

4.1.3 Hunting and Trapping

In carrying out our fieldwork, SCN members harvested various ungulates in and around the Project area. SCN is deeply concerned that its **ability to meaningfully exercise** its explicit right to hunt and trap will be **impaired and unjustifiably infringed** should the Project proceed without proper mitigation and accommodations.

Wildlife that are part of SCN diets, livelihoods, and culture are also potentially at risk from the Project, including large-game species, such as **moose**, **elk**, and **deer**, as well as smaller game such as rabbit and grouse. For instance, the Project Footprint is projected to cross through **the Little Smoky boreal caribou range**, which would lead to habitat fragmentation and animal dispersal, among other potential effects. The Project thus has the potential to disrupt animal habitats, hunting areas, and trapping areas, including from Project construction and increased human activity (e.g., in the form of traffic and land clearing). Moreover, Samson Cree members noted how animals in the region were already getting sick, and have observed the effects of traffic and industrial activity in the form of road kill and a lack of game in areas near to the Study Area (e.g., Grande Cache).

Nonetheless, recent excursions in the winter of 2018 into the Study Area and nearby locations indicate the presence of hunting resources that may be disrupted as a result of the Project. For instance, SCN members reported successfully hunting deer near Edson and Hinton, and also spotting elk, deer, lynx, and other wildlife in other locations such as off Highway 11 and near Harlech. "Bush chickens" were also successfully hunted in the region in the winter of 2018.

4.1.4 Caribou

Any attempts to assess or manage caribou without SCN's involvement is deeply concerning for a number of reasons. It goes without saying that the protection, management, and recovery of caribou in and around SCN's Territory are of serious interest and concern to SCN and our members.

Given its importance, SCN plans on reviewing forthcoming evidence from Environment Climate Change Canada, and submitting Oral Traditional Evidence on caribou.

4.1.5 Cultural Continuity

The cultural persistence of the SCN relies, in large part, in the ability and opportunity of members to transmit cultural knowledge and values to future generations. For the SCN community, being on the land and engaging in fishing, hunting, trapping, camping and travel, and other cultural land uses are essential components of knowledge transmission. In addition, oral histories are often tied to specific places. The disruption of natural resources relied on by the community, and access to those resources in the Study Area can thus affect SCN knowledge transfer and cultural continuity.

The Study Area, and SCN territory more generally, also embody and contribute to SCN sense of place and identity values. Sense of place, also known as place attachment, refers to the subjective meaning and experience of physical locations. For the SCN, the Study Area possesses many valued place characteristics that can contribute to the unique functional, emotional, and psychological bonds between people and place. These valued place characteristics include natural resources (e.g., wildlife), manmade features (e.g., trails and camp structures), and intangible features such as place names, which enable cultural experiences and are linked with place meanings fostered by past and ongoing experiences.

4.1.6 Cumulative Effects on SCN Knowledge and Use

The Project needs to be assessed in light of the Crown's legacy of natural resource management and infrastructure. To date, Canada has not initiated consultations with SCN on the Project. SCN is seeking consultation and accommodation on strategic, high level issues that the Proponent (and NEB) cannot address.

As mentioned above, SCN's inherent and Treaty No. 6 rights, **including governance and environmental stewardship rights**, are highly constrained and in a sensitive current stated.

The available qualitative data further elaborate on the already impacted state of natural resources and linked cultural practices within and around SCN territory, which includes the Study Area. Samson Cree Nation members identified numerous sources of environmental stress and related impacts and that may be exacerbated (additively or synergistically) by the Project.

Samson Cree Nation members articulated how oil and gas development, such as pipelines, have led to contamination and unsafe water supplies. Members also described the abundance of oil wells, both active and abandoned, and the presence of carcinogens in the environment from oil wells. As a result SCN members are concerned about land contamination, as well as contamination of plants and wildlife and the potential consequences for human consumption.

Pipeline construction and land clearing from forestry and other developments have also led to the loss of animal habitat (e.g., shelter and calving areas) and habitat fragmentation. Samson Cree Nation members have observed a lack of wildlife in and around clear cut areas. On top of local and discrete stressors in the form of industrial developments, climate change is also noted by SCN members as affecting plants and animals.

These aforementioned change agents have collectively reduced the amount of space and opportunities available for SCN members to practise their culture, and by corollary opportunities for the transmission of knowledge central to SCN identities and cultural persistence.

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5. CONCLUSION

A preliminary review of existing SCN knowledge and use data in the vicinity of NOVA Gas Transmission Ltd.'s 2021 NGTL System Expansion Project suggests **potentially highly significant impacts to SCN's Inherent and Treaty No. 6 rights**. Additionally, based on the available data, it is possible to conclude that the Project Study Area is of cultural importance to SCN members. As such, **mitigation measures and accommodations are likely required**.

It is also important to recognise that SCN knowledge and use values in and around their territory, which includes the Study Area, have been and are already subject to numerous cumulative effects with ongoing impacts. The ability of SCN members to maintain and engage in their traditional activities and culture is thus vulnerable to further disturbance.

As mentioned above, further work is required to provide a more comprehensive understanding of potential Project effects on SCN knowledge and use, and ultimately, culture and Treaty and Inherent rights.

In accordance with the TK Study Protocol, SCN intends on finalizing this work and submitting it to the Board for consideration during the NEB hearing process, in due course. SCN will be mindful of timeliness, and welcome any early direction that the Board may have in this regard.

SCN intends on scheduling a meeting with the Proponent in order to review this interim TK Study report.

SCN's conclusions will be updated based on our discussion with the Proponent, and hopefully with Canada, including MMPO ECCC, should Canada initiate consultation with us.

5.1 CLOSURE

Should you wish to discuss any aspect of this Memo further, please do not hesitate to contact Kyra Northwest (kyra@consultsamson.com).

Sincerely,

Ms. Kyra Northwest
Samson Cree Nation, Traditional Land Use Lead

CITATIONS

Candler, Craig, Rachel Olson, and Steven DeRoy. 2010. As Long as the Rivers Flow: Athabasca River Knowledge, Use and Change. Edmonton: Parkland Institute, University of Alberta.

DeRoy, Steven. 2012. Using geospatial and network analysis to assess accessibility to core homeland areas of the Athabasca Chipewyan First Nation (ACFN) in the context of increasing oil sands development. Dissertation for Masters of Geographic Information Science. University College London.

Hegmann, George, Chris Cocklin, Roger Creasey, Sylvie Dupuis, Alan Kennedy, Louise Kingsley, William Ross, Harry Spaling, and Don Stalker. 1999. Cumulative Effects Assessment Practitioners Guide. Hull, Quebec: Canadian Environmental Assessment Agency.

MSES (Management and Solutions in Environmental Science). 2010. Effects on Traditional Resources of the Athabasca Chipewyan First Nation: The Joslyn Creek Project Specific and Cumulative Effects in the Oil Sands Region. Prepared for the Athabasca Chipewyan First Nation.

Tobias, Terry. 2010. Living Proof: The Essential Data-Collection Guide for Indigenous Use-and-Occupancy Map Surveys. Vancouver: Ecotrust Canada and the Union of British Columbia India Chiefs.

APPENDIX 1: SITE-SPECIFIC VALUE RECLASSIFICATION TABLE

The table below details how SCN site-specific values were reclassified according to Activity Class. Reclassification was done based on the original attributes attached to the SCN site-specific data, specifically the "Label" and "Evidence" properties. Below, the Label and Evidence columns indicate the original descriptors provided for various site-specific values, while the Activity Class column indicates its newly assigned designation. Note that a single row may represent multiple site-specific values (i.e., there is not a 1:1 relationship between rows and values). In addition original Labels have been truncated in order to preserve SCN member anonymity and for concision.

Label	Evidence	Activity Class
Black Bear Marking	Scratch marks	Environmental Feature
Bobcat	Tracks	Environmental Feature
Buck Rub	Scratch marks	Environmental Feature
Cow *[note: assumed moose]*	Animal Sighted	Environmental Feature
Deer	Animal Sighted	Environmental Feature
Deer Tracks	Tracks	Environmental Feature
Deer Tracks	Tracks; Wildlife Trail	Environmental Feature
Deer Trail	Tracks; Wildlife Trail	Environmental Feature
Ducks	Animal Sighted	Environmental Feature
Elk Tracks	Tracks	Environmental Feature
Elk Tracks	Tracks; Wildlife Trail	Environmental Feature
Elk Tracks	Wildlife Trail	Environmental Feature
Fox Tracks	Tracks	Environmental Feature
Game Bed	Animal Clearings	Environmental Feature
Game Trail	Tracks	Environmental Feature
Game Trail	Tracks; Wildlife Trail	Environmental Feature
Game Trail	Wildlife Trail	Environmental Feature
Lynx	Animal Sighted	Environmental Feature

Label	Evidence	Activity Class
Moose	Animal Sighted	Environmental Feature
Moose Tracks	Tracks	Environmental Feature
Moose Tracks	Tracks; Wildlife Trail	Environmental Feature
Nest	Nest	Environmental Feature
Rabbit Tracks	Burrow; Tracks; Wildlife Trail	Environmental Feature
Rabbit Tracks	Tracks	Environmental Feature
Rabbit Tracks	Tracks; Wildlife Trail	Environmental Feature
Raven	Animal Sighted	Environmental Feature
Wolf Tracks	Animal Sighted/Tracks	Environmental Feature
Wolf Tracks	Tracks	Environmental Feature
Wolf Tracks	Tracks; Wildlife Trail	Environmental Feature
Deer	Captured	Subsistence
Elk	Captured	Subsistence
Fox Kill	Captured	Subsistence
Harvested Sweet Pine		Subsistence
Moose	Captured	Subsistence
Moose Kill	Captured; Remains	Subsistence
Spruce Grouse	Captured	Subsistence
Wolf Kill	Captured	Subsistence
Deer		Undefined Ungulate
Moose		Undefined Ungulate

CUMULATIVE EFFECTS ON THE ABORIGINAL RIGHTS AND INTERESTS OF SAMSON CREE NATION

A preliminary desktop analysis of Valued Components in the project affected area of NOVA Gas Transmission Ltd. (NGTL) – 2021 System Expansion Project

April 18, 2019 Draft

Prepared for the Samson Cree Nation in collaboration with the Samson Cree Consultation Office.

Prepared by Carolyn Whittaker (M.Sc.), Katy Dimmer (B.A), Alistair McDonald (M.A), and Firelight Research Inc.

the firelight group

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List of Acronyms

ABMI	Alberta Biodiversity Monitoring Institute
ACA	Alberta Conservation Association
AEP	Alberta Environment and Parks
AER	Alberta Energy Regulator

AGBRP	Alberta Grizzly Bear Recovery Plan
AGLA	Alberta Grazing Leaseholders Association
ASRD	Alberta Sustainable Resource Development
AWA	Alberta Wilderness Association
AWQI	Alberta River Water Quality Index
BMA	Bear Management Areas
BS	Shrubby bogs
BWc	Coniferous wooded bogs
CEA	Cumulative Effects Assessment
CHROMP	Caribou Habitat Restoration and Offsetting Measures Plan
CIP	Culturally Important Plants
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
EA	Environmental Assessments
EINP	Elk Island National Park
ESA	Environmental and Socio-economic Assessment
FWc	Coniferous wooded swamps
IKT	Indigenous Traditional Knowledge
ILI	In-line inspection
LSA	Local Study Area
LSM-ALP	Little Smoky – A La Peche
MG	Graminoid marshes
MPWA	Mighty Peace Watershed Alliance
NEB	National Energy Board
NGTL	NOVA Gas Transmission Ltd.
NSR	Natural subregions
PA	Proportional Abundance

PRPA Peace River Project Area

ROW Right of Way

RSA Regional Study Area

SARA Species at Risk Act

SCN Samson Cree Nation

SS Shrubby swamps

SWd Deciduous wooded swamps

SWm Mixedwood wooded swamps

TLU Traditional Land Use

TLRU Traditional Land and Resource Use

TWS Temporary Work Spaces

VCs Valued Components

W Shallow open water

Section 1: BACKGROUND AND METHODS

PURPOSE OF THE REPORT

> *"And the best analogy I could use, was talking about if I was to sit here and somebody came up and started pinching me – and they just started pinching me, but there was no law in place for them to let me know they were going to start pinching me; they could just do it, so they came up and they started pinching me. And suddenly there was a law in place that said, "You have to notify the person before you pinch them." And then they came up and they said, "Okay. Well, we've already been pinching you, so we're going to grandfather this in and we're going to start pinching you again." And they start pinching me again and then they say, "All right, this time we're going to hear you out. We want to know how does this affect you?"*
>
> *And I start saying, "Well, my arm was fine before you started pinching." "No, it was pre-existing; we were already pinching you before that law came into place. You can't go as far back and tell us how it was before we started pinching. We have to know how does this affect you right now."*
>
> *And to me that just, you know, it sounds ludicrous. And it's funny that I have to put it in such an analogy to be understood. But these lands were used for our ceremonies. We went out, we found specific ceremonies to pass on stories, to pass on traditions, to pass on the pipe. These are very important to us." (Councillor Katherine Swampy, Samson Cree Nation NEB Westpath Delivery Project Oral Testimony - A6I9Y8, line 267 2018a)*

The Firelight Group Research Inc ("Firelight") was retained by Samson Cree Nation ("SCN") to undertake a technical review of the cumulative effects assessment ("CEA") carried out by NGTL (the "Proponent") as part of the NGTL 2021 application (the "Project").

Samson Cree Nation is seriously concerned with the cumulative effects occurring in the Nation's traditional territory, especially in the Project area (Figure 1) as this area includes some of the last corners of relatively pristine lands in the territory. As stewards of their land, SCN wants to ensure that lands and waters in the territory are healthy for future generations. The Nation cannot rely on proponents or the government to undertake a comprehensive review of cumulative effects that includes impacts to SCN rights and therefore SCN is undertaking this review, with support from Firelight. SCN is frustrated at seeing environmental reports issued in a piecemeal manner for individual projects with no thought for cumulative or regional impacts. SCN members are frustrated that their territory, their harvesting and cultural activities and their treaty and Aboriginal rights being "pinched" without the calculation of the damage of every individual pinch and all the pinches in sum being considered in decisions about what is acceptable in the future.

This Report:

- Identifies key gaps and deficiencies with the Proponent's CEA; and
- Develops a preliminary alternative assessment of cumulative effects of the Project in combination with past, present and reasonably-foreseeable future developments on the

SCN member's Aboriginal rights and interests.

An "enabling factors approach" is used to assess cumulative effects. This approach identifies that the focus of assessment should be on maintaining the minimum quality and quantity of land and resources among other key factors required for the full practice of Samson Cree Nation culture, mode of life, and Aboriginal rights. These quality and quantity criterion are discussed qualitatively regarding specific valued components with the exception of wildlife VCs where quantitative thresholds have been established. Adverse effects on these "enabling factors" will limit or prevent SCN members from meaningfully exercising their Aboriginal rights, for example by not having an adequate land base to pursue seasonal rounds or not having adequate preferred harvesting species in their traditional territory in order to conduct successful harvests.

THE PROJECT

NOVA Gas Transmission Ltd. (NGTL) is looking to construct and operate the 2021 NGTL System Expansion Project (see Figure 1). The proposed Project is an extension of the NGTL System and aims to increase pipeline capacity to transport gas from areas of increasing natural gas production in the Peace River Project Area (PRPA) to intra-basin and export markets (NGTL 2018b, ESA Section 1).

The Project consists of approximately 344 km of 1,219 mm pipeline loops in eight section loops, three compressor station unit additions, a control valve, mainland valve sites, construction related temporary infrastructure such as access roads, borrow pits/dugouts and stockpile sites, a cathodic protection system, temporary access roads and other miscellaneous works, such as pipeline warning signs and aerial markers (NGTL 2018b, ESA Section 1).

The Project application involves the following main components and sections (NGTL 2018b, ESA Section 1, p. 1-1 and1-2):

1. Approximately 344 km of 1,219 mm (NPS 48) pipeline loops in eight sections:

Grande Prairie West:

- Grande Prairie Mainline Loop No. 4 – Valhalla Section - 36 km
- Grande Prairie Mainline Loop No. 3 – Elmworth Section - 46 km

Grande Prairie South:

- Grande Prairie Mainline Loop No. 2 – Karr Section - 57 km
- Grande Prairie Mainline Loop No. 2 – Deep Valley Section - 69 km
- Grande Prairie Mainline Loop No. 2 – McLeod River Connection Section - 14 km

Edson South:

- Edson Mainline Loop No. 4 – Robb Section - 42 km
- Edson Mainline Loop No. 4 – Dismal Creek Section - 32 km
- Edson Mainline Loop No. 4 – Brewster Section - 49 km

2. Three (3) compressor station unit additions at the following existing NGTL sites:

- Nordegg Compressor Station (Nordegg Unit C6 Addition)
- Didsbury Compressor Station (Didsbury Unit B7 Addition)
- Beiseker Compressor Station (Beiseker Unit A3 Addition)

3. Launcher and receiver facilities for cleaning and in-line inspection (ILI)

4. A control valve (January Creek control valve) and associated pipeline tie-ins to safely facilitate the flow of gas from the January Creek Lateral to the Western Alberta System

The minimum construction Right of Way (ROW) and Temporary Work Spaces (TWS) is approximately 32 m for the majority of the length of the pipeline components.

The proposed Project would be located in the western portion of SCN territory (see Figure 1), an area already subject to relatively high levels of industrial forestry, land privatization, and landscape fragmentation.

GAPS IN NGTL'S ASSESSMENT OF CUMULATIVE EFFECTS

In the Proponent's Cumulative Effects Assessment inadequate attention has been given to total cumulative effects of the Project *in combination with* already significant cumulative effects from past, current, and reasonably foreseeable development, and other changes in the environment (e.g. climate change, forest fires) in the the Project ares and SCN's traditional territory. Impacts such as privatized land and industrial development and deforestation, among other land uses, have ongoing impact on the lands and waters that SCN members rely on for cultural and rights-based practices, and the pace of development and resulting alienation is increasing.

SCN knowledge and experience indicates that existing levels of impact in the Project area of SCN territory already severely constrain and *significantly impact* SCN access to preferred places and resources where SCN members practice rights, maintain critical connections to land, and pass on knowledge to younger generations. For SCN members, cumulative effects reduce access to traditional territory, traditional hunting and harvesting areas, oral history and heritage or archeological sites, and other sites of significance. Given this context, a robust cumulative effects assessment is required for the Project. This assessment has not considered the current and likely future sufficiency of access to places and resources important to SCN rights or mitigation of Project effects.

The Proponent's Application/ESA has a finding of no significant cumulative effects (NGTL 2018a,14-6). However, the Application and ESA's cumulative effects assessment exhibits substantial gaps as against best practice. As one example, the temporal scope for Cumulative Effects Assessment proposed by the Proponent does not follow best practice. Section 4.2 in NGTL 2018c identifies the temporal setting for baseline conditions: "the baseline setting describes the environment as it currently exists (i.e., in 2018) prior to any potential changes that may occur" (4-8). Furthermore, section 4.4.2 identifies the temporal scope for cumulative effects assessment for the Project: "The temporal scope of the cumulative effects assessment includes the construction and operation of the Project, which is expected to operate for more than 25 years" (4-33). Hegmann et

al. (1999 15) explain that temporal boundaries for analysis of change over time require an appropriate historical baseline. Working from a degraded baseline minimizes actual impacts.

The Proponent states throughout the Environmental and Socio-economic Assessment (ESA) (NGTL 2018c; NGTL2018d; NGTL 2018e; NGTL 2018f) that the criteria for determining significance was weighted on the magnitude of the Project, and Ongoing & Reasonably Foreseeable Projects and not the magnitude of Past and Existing Projects. This weighting ignores that the magnitude for past and existing projects assigned by the Proponent - rated moderate to high. Best practice dictates the importance of past and existing disturbance in determining total effects loading (Duinker and Greg 2006; Hegmann et al. 1999; MacDonald 2014). Ignoring a degraded baseline ignores vulnerable values with higher sensitivity to change. For example, the Project will remove 6,100 ha of provincial Crown land from SCN use in their traditional territory – which may seem small, until you consider that more than 63% of SCN territory lands are disturbed or converted to industrial landscapes.

In the Cumulative Effects Assessment methods described in Volume 4 of the ESA, the Proponent makes the assumption that the current level of disturbance in the Regional Study Area (RSA) will remain the same for the life of the Project (NGTL 2018c, 4-44). This assertion does not fit with future population increases or a predicted future that includes increased forest fires associated with climate change in the region (See Summary of Impact Causing Agents or Stressors). The proponent has also emphasized that reclamation in the province will also factor into this "sustained" level of disturbance but has not provided evidence beyond number of reclamation certificates applied for. Further evidence is required to substantiate the statement that: "As pressure increases for industries to step up reclamation activities, the amount of area being reclaimed may become equal to or greater than the area with new disturbance on an annual basis" (NGTL 2018c, 4-44). This is an entirely speculative statement not based on data or track record. Cumulative effects assessment does not work on the basis of wishful thinking.

The Proponent's ESA also puts greater emphasis on land cleared in determining cumulative effects versus consideration of other potential impacts such as access and alienation or development of a zone of influence as advised on page 15 of Heggman et al. (1999). This likely underestimates the area functionally alienated from traditional use/Treaty rights practices for SCN. Based on its narrowed definition, the Proponent assumes cumulative impacts to traditional use are limited given the percentage of vegetation cleared in the RSA and the expectation that vegetation will regrow.

Best practice also promotes the comparison of effects to thresholds as part of analysis (Heggman et al. 1999, 2). Limited evidence is provided that thresholds were identified or included in the proponent's cumulative effects assessment for Valued Components (VC). The Proponent did note looking for existing Provincial standards (NGTL 2018c), however, Samson Cree Nation has not been engaged in determining SCN thresholds with the Proponent.

The Proponent does not provide a cumulative effects assessment specific to Samson Cree Nation Current Use of Lands and Resources or impacts to Aboriginal Rights or Title. The Proponent instead takes a Pan-Aboriginal approach using other Indigenous Groups as Proxy. Indigenous groups are unique, with one group's use not representative of another's. Groups can differ in geographic scope for the practice of their rights or hold different priorities for values. An assessment for each group is also a requirement of the *Canadian Environmental Assessment Act* (*CEAA) 2012* section 5(1)(c).

NGTL have not conducted appropriate baseline data collection to inform residual project effects first. The Proponent has not responded adequately to SCN IR 1.5 concerning this inadequate baseline collection and assessment for SCN for the Project case (NGTL 2019). No meaningful

Nation-specific cumulative effects assessment can be conducted until such baseline and trend over time data is collected.

NGTL'S cumulative effects assessment for Current Use of Lands and Resources for Traditional Purposes also relies inappropriately on biophysical proxies. For example, cumulative effects on fishing was determined solely on fish habitat alteration and fish populations, which is not adequate to determine the significance of cumulative effects on SCN fishing (see page 19-47) as there may be a range of impact pathways whereby the Project impacts fishing other than presence of fish themselves such as:

- peace and quiet;
- perceived risk of contamination;
- aesthetic and other sensory changes to the landscape; and
- increased competition or activity around a fishing area;

all of which can reduce peoples' abilities and willingness to access and harvest fish from a particular location.

Utilizing best practice available from Cumulative Effects Assessment (CEA) literature,[1] ten principles for CEA in relation to Indigenous Culture and Rights were also identified against which the adequacy of the Proponent's CEA was compared. This comparison informed the identification of key gaps summarized in Table 1-1 below.

[1] Duinker and Greig (2006), Hegmann et al. (1999), Noble (2013; 2014), and the Forest Practices Board (2011), were among the sources used to generate the list of best practice principles. See MacDonald (2014) for a fuller consideration of the principles and the literature behind them. In addition, Principle 8 of the First Nations Major Projects Coalition's Major Projects Assessment Standard (FNMPC 2019), identifies expectations for meaningful cumulative effects assessments of major projects.

Table 1 Gaps in NGTL's CEA for SCN Culture and Rights including Traditional Land and Resource Use

CEA Principle	NGTL's CEA	Gap
1. **CEA must be done at the proper scale, and must:** • Be conducted for the entire territory of each affected Indigenous Nation; • Include consideration of wildlife and fish trends at the stock range; • Take into account the quality of fish and wildlife stocks and change over time; and • Cover an area large enough to assess accumulated environmental conditions;	CEA was not conducted specifically for SCN TLRU, or Aboriginal rights and interests. Baseline data and trends in disturbance for habitat and wildlife populations in regional RSAs overlapping parts of SCN territory was undertaken (to a limited degree) by NGTL, however, past effect and VC vulnerability were not heavily weighted inputs in determining significance.	No consideration of total cumulative effects loading on Aboriginal people within their own territories, including Traditional Land and Resource Use (TLRU), Aboriginal rights, and related biophysical VCs.
2. **CEA must be in the proper context – reflective of the values and valued components of the affected parties, including:** • Traditional knowledge inputs, description, observations, stories and narratives of change, gain, and loss; and Key values for each region and culture group.	CEA was not conducted specifically for SCN TLRU or, Aboriginal rights and interests. The application provides no evidence of integration of Samson Indigenous Traditional Knowledge, and key SCN values are <u>not</u> represented in the ESA. The Proponent also did not engage with SCN on, or adequately represent, the Nation's history and worldview therefore the assessment is missing key narratives of change.	No characterization of SCN values, worldview, history and priority VCs. Determination of impacts to SCN TLRU and Aboriginal Rights was inappropriately done through proxy in NGTL's CEA. No collection of data on SCN's TLRU was conducted within the footprint, LSA or RSA for the proposed Project.

CEA Principle	NGTL's CEA	Gap
3. **Cumulative effects must be measured against an appropriate temporal backcast – a pre-disturbance baseline context, and must:** • Not use the current or accumulated state, which represents a damaged baseline; • Describe historical trends to clearly describe the sensitivity and resilience of the VC; and • Use an agreed upon suitable past starting point for assessing total cumulative impacts to date.	Baseline was not back-cast at all; tied to current (2018) conditions. Proponent ignored "damaged" baseline in significance determination. No historical information pertaining to SCN incorporated.	No calculation of pre-disturbance / pre-contact – or even, pre-2018 – baseline for any VCs. VC status and change over time doesn't have adequate time depth
4. The scope of assessment must consider all past, present, and reasonably foreseeable change agents impacting on the VCs and indicators, including: • The combined, persistent, and legacy effects of human activities on the environment, economy, and society; and • Effects from other non-human cumulative-effects-causing agents.	Proponent has assumed that the current level of disturbance in the RSA will remain the same for the life of the Project thereby ignoring non-human cumulative effects-causing agents and future development stressors.	Underestimation of likely cumulative effects given faulty assumptions concerning foreseeable human disturbance and lack of consideration of non-human cumulative effects-causing agents.

CEA Principle	NGTL's CEA	Gap
5. CEA must focus on total effects on VCs over time, not the individual Project's likely contributions, and must consider: • The overall capacity of an area or region to sustain values in the face of all human activities; • The sustainability of VCs over time in the face of the full range of human-generated stresses; and • The sum total of changes over time.	No historical or future consideration of total effects loading. Assumptions made that reclamation will greatly reduce existing damage over time.	No calculation of existing stressors on SCN TLRU or Aboriginal rights whatsoever. No calculation of total effects on wildlife, fish, forests or available land for SCN Aboriginal rights practice. Underestimation of likely cumulative effects given faulty assumptions concerning the likelihood and rate of reclamation activities in the Province of Alberta compared to development.
6. **CEA must look to change over time and trends in VCs, and must include consideration of:** • Trends in changes over time to a VC, including trend analysis and rates of change; and • Trends over time across a series of resources required to practice Indigenous rights (e.g. acceleration of deceleration of land fragmentation and alienation).	CEA was not specifically conducted for SCN TLRU or, Aboriginal rights and interests. Trend over time and rates of change were not provided for wildlife, vegetation, and fish VCs as baseline was established at 2018.	Complete lack of assessment for SCN TLRU and Aboriginal rights and interest. Quantitative data for effects for other VCs is deficient given temporal scope (inadequate time depth to data).

CEA Principle	NGTL's CEA	Gap
7. Multiple VCs and indicators may need to be assessed in combination to understand total effects loading. Thus, CEA must consider that: • The cumulative effect of stressors on the environment may be more than the simple sum of the individual stressors; and • Impact-causing agents may act in mutually reinforcing ways to compound effects (e.g. climate change has more rapid and extreme effects outcomes on already fragmented or degraded ecosystems).	Enabling factors for Aboriginal rights practice were not considered. Determination of vulnerability and/or resilience of VCs was not part of the Proponent's assessment. Proponent did not adequately factor in impact-causing agents such as climate change.	No assessment conducted re: enabling factors for meaningful practice of Aboriginal rights. Lack of consideration of vulnerability/resilience of VCs can lead to substantial underestimation of the ability of the VC to take additional incremental adverse effects, which are predicted for wetlands, vegetation, wildlife and wildlife habitat.
8. **Thresholds of acceptable change must be defined and agreed upon by all affected Parties. Thresholds should be conservative and/or precautionary and should:** • Be defined in a manner that allows cumulative change and the significance/seriousness of cumulative effects can be assessed. • Include a threshold of maximum allowable change for all VCs, including for resources that underlie Aboriginal and treaty rights.	Limited evidence that thresholds were identified or developed by the Proponent. Any thresholds that were developed by and interpreted by the Proponent were done so without engagement with SCN or the Crown. CEA was not specifically conducted for SCN TLRU or Aboriginal rights and interests. No thresholds specific to SCN or TLRU were identified and SCN was not engaged by NGTL on this topic.	Thresholds of acceptable change relevant to SCN territory are not defined for any VCs or indicators. Thresholds for threatened species such as Grizzly bear are not addressed. Thresholds for water quality and quantity in watersheds intersected by the Project are not identified.

CEA Principle	NGTL's CEA	Gap
	No thresholds were developed or identified for water quality and quantity. No thresholds for key species, such as Grizzly bears.	
9. **CEA must entertain the possibility that there are already "pre-project" significant adverse impacts or serious infringements in existence. Thus, CEA must consider:** • A pre-Project contextual significance estimation for each VC; and • Screening criteria that include pre-existing significant adverse effects adding to total effects loads.	CEA was not specifically conducted for SCN TLRU or, Aboriginal rights and interests. VC pre-existing disturbance was rated as moderate to high in magnitude but was barely considered in significance determination.	Given no CEA specific for SCN TLRU or Aboriginal Rights, the possibility of pre-existing significant adverse effects for SCN is never actually entertained. The Proponent has not considered the regional declines of species highly valued by SCN such as Caribou and Grizzly bear.
10. **CEA merits the same type of effort and rigour as Project-specific effects assessment, and:** • Sufficient evidence and analysis must be provided to support conclusions about potential cumulative effects and their significance.	No effort in specifically assessing TLRU or Aboriginal Rights for SCN as CEA as proxies were used for SCN TLRU and Aboriginal rights and interests. Cumulative Effects Assessment focused primarily on clearing rather than determining a zone of influence.	Proponent conducted no CEA on TLRU or Aboriginal right specific to SCN. In addition, no Indigenous group territories-specific CEA on any biophysical VCs was undertaken.

The Proponent in this instance failed to complete a meaningful cumulative effects assessment across a broad spectrum of best practice considerations. Of primary concern is the Proponent's faulty assumptions and subsequent lack of consideration for SCN's specific rights and Traditional

Land and Resource Use. Given these gaps SCN has taken on their own preliminary cumulative effects assessment through development of this document.

SAMSON CREE NATION BACKGROUND

The Samson Cree Nation, also known as Nipisihkopahk (willow meadows), is one of four band governments that belong to the Crees of Maskwacis ("Bear Hills" in Cree). The other three Maskwacis communities are Ermineskin Cree Nation, Louis Bull Tribe and Montana First Nation (Johnson 2017; Olson et al. 2015). The Maskwacis Cree[2] are a distinct part of the Plains Cree Nation and have occupied the region since time immemorial (Olson et al. 2015). The SCN is a signatory to Treaty 6 signed between the Plain, Wood Cree and Queen Victoria in Central Alberta and Central Saskatchewan. The Maskwacis Cree language is part of the Plains Cree dialect and is a Central Algonquian language that is closely tied to Ojibwa, Fox and Menominee (Olson et al. 2015).

Samson Cree Nation is located approximately 90 kilometers south of Edmonton, Alberta, near the Queen Elizabeth Highway. Three reserves make up SCN, including Samson IR 137, Samson IR 137A, and Pigeon Lake 138A. In 2015, the population of SCN was registered at 8067 members, with approximately 5728 members living on reserve (Olson et al. 2015).

Today, Samson Cree Nation work is guided by the principles of Pimachihowin (way of life), Wahkohtowin (kinship), Sakitowin (love), and Tapwewin (honesty). These principles are informed by the knowledge of the Elders and shape the way the community thinks, speaks and lives (Samson Cree Nation 2013). With this in mind, Samson Cree Nation aims to collectively promote healthy socio-economic growth within the community and for future generations that sustains healthy lands and waters to enable the full and meaningful practice of culture and rights.

SCN HISTORY AND TERRITORY

History

Samson Cree Nation belong to the Maskwacis Cree, which are part of the Plains Cree. Long before European contact, the Plains Cree inhabited the areas now known as Alberta, Saskatchewan, British Columbia and parts of Montana. For thousands of years before contact, the plains people hunted buffalo and relied on seasonal fruits, vegetables and other game for subsistence (Brasser 2015).

The immense herds of buffalo were central to the economy and culture of the Plains societies. The buffalo hunt promoted cooperation among Plains peoples (Miller 2004). Cooperation was needed to locate, pursue, and harvest the buffalo (Miller 2004). The buffalo hunt transformed and became even more efficient with the introduction of horses to the continent in the 16th century. The hunt changed further with the introduction of rifles in the 1860s and the increased involvement of the Plains people in the fur trade.

In the late 1600s, the Hudson Bay Company claimed a third of what is now Canada as its exclusive commercial domain. The Hudson Bay Company dominated the fur trade and the Plains people

[2] In January 2014 the name officially changed from Hobbema to Maskwacis (See http://samsoncree.com/name-change).

these "enabling factors" is arguably an adverse impact on SCN citizens' meaningful practice of Aboriginal rights.

For the purposes of this assessment, the following rights "enabling factors" were considered:

- Healthy populations of fish, game and culturally important plants in preferred harvesting areas;
- Ability to maintain traditional land tenure and governance systems;
- Clean and plentiful water from natural sources on the land;
- Adequate, safe and well-known routes of access and transportation;
- An adequate land base within which to pursue seasonal rounds;
- Freedom from competition for access to and harvesting of resources;
- Confidence in the quality of country foods;
- Healthy cultural and spiritual relationships with the land;
- Abundant berry, other food crops and medicines in preferred harvesting areas;
- Adequate experience of remoteness and solitude on the land;
- Adequacy of – and access to – known and preferred habitation sites on the land;
- Feelings of safety and security on the land;
- High levels of traditional knowledge of specific locations and ability to pass this knowledge on across generations;
- A relatively unchanged visual landscape;
- A relatively "natural" non-visual sensory environment, including smell, taste, and noise sensory conditions; and
- Reasonable access to lands and resources accessible within constraints of time and cost.

A Samson Cree VC will be considered to be in a pre-existing state of significant adverse effects if one or more of the following applies:

    - The stock and/or health/status trend for that VC within SCN territory has noticeably declined between 1900 and today; or
    - The stock or health status is below a threshold identified as adequate to sustain the associated SCN rights; or
    - Those declines have created heightened vulnerability for that VC and related SCN values, rights and activities; or
    - SCN members report that these declines have adversely impacted on their ability to meaningfully practice their Treaty rights.

For each VC, it is the total cumulative effects loading, not the contribution of the Project, that is critical to the determination of significance. The significance of total cumulative effects must be examined within the context of past conditions or lesser-disturbed conditions, and not in reference to the current or accumulated state, which may represent a "damaged baseline". To relate back to Councillor Katherine Swampy's Oral Testimony, to understand what has changed and how SCN is affected you have to go back to what it was like before the "pinching" started (Councillor Katherine Swampy, Samson Cree Nation 2018a, line 267). Furthermore, proper Cumulative Effects

Section 3: Status of Health of Valued Components of Concern in the Eastern Slopes of the Rockies: Wildlife

Caribou

Why Caribou is a Priority Species for SCN

> [Elder speaking about animal populations in his youth, approximately 30 years ago:] *... Things were very — the people, especially on the reserve in Battle Lake — in Battle River — they were so scarce that these elders, and these men would go way out there. They'd hunt to past Hardisty and even towards north from there, and south to Buffalo Lake, Hanna, and to Stettler area, Sylvain Lake, right up to Rocky Mountain House, Rimbey — past Rimbey. (Olson et al. 2015, S09)*

The SCN Consultation Committee identified caribou as a culturally important value for this cumulative effect assessment. Elders report that ancestors harvested caribou in the past, and that the species remains of high cultural importance: "If we have a Cree name for it we hunted it … Caribou is *Maskek Atihk*." (Samson Cree Nation 2019). Based on the knowledge shared by SCN knowledge holders during focus groups in April 2019, cumulative effects on many hunted animals, including caribou, are already well beyond a threshold that would sustain SCN rights – and have been for many years. SCN members participating in the ITK studies did not report hunting caribou at this time or in recent memory because of their rarity, but harvest would likely return if populations recover. As such, and consistent with federal guidance, hunting of caribou is considered a current use for the purpose of this assessment.

Indigenous hunting of boreal caribou in western Alberta would have become very difficult by the 1970s, as substantial population declines had already occurred. The loss of caribou as a food and cultural resource continues to be felt by SCN members today, not just because of the loss of subsistence value, but because of the loss of many other values connected to caribou — enjoyment of the land, health and wellness, reciprocity within the land and wider community, language, self-determination, and spirituality (Assembly of First Nations and the David Suzuki Foundation 2013).

From a cumulative effects perspective, the loss of boreal caribou habitat and populations is an indicator of a landscape that has been pushed well beyond natural conditions by human-caused disturbance. Caribou are indicators of intact forest ecosystems, thriving on large tracts of undisturbed forests and wetlands. Access to undisturbed boreal forest and wetland systems is a critical part of caribou survival strategy, which relies on dispersal during vulnerable periods (particularly calving and post-calving) to avoid predation. Because of how caribou use the boreal forest, they are an excellent example of an umbrella species: protecting caribou and their habitat benefits animals throughout their range (Bichet et al. 2016). With their requirements for large tracts of undisturbed land to meet their life history requirements, caribou are also an excellent indicator species of cumulative effects in Samson Cree territory.

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Canada

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Prairie & Northern Region
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April 18, 2019

NEB File: OF-Fac-Gas-N081-2018-03 02
Hearing Order: GH-003-2018

Sheri Young
Secretary of the Board
National Energy Board
Suite 210, 517 Tenth Avenue SW
Calgary, AB T2R 0A8

Dear Ms. Young:

RE: Hearing Order GHW-003-2018 NOVA Gas Transmission Ltd. 2021 System Expansion Project

On December 4, 2018, the National Energy Board (NEB) examining NOVA Gas Transmission Ltd. (NGTL)'s application dated June 20, 2018 for the construction and operation of the 2021 System Expansion Project (the Project), issued a Notice of Hearing – Hearing Order GHW-003-2018.

In response to the NEB's Hearing Order GHW-003-2018, Environment and Climate Change Canada (ECCC), an Intervenor in the NEB's environmental assessment of the Project, has reviewed the information submitted to the NEB regarding the Project. ECCC is pleased to submit the following documents to support the NEB review of this project:

1. ECCC Response to NEB's SARA S. 79 Notification letter provided to ECCC on December 27, 2018 (attachment 1), and

2. ECCC's Written Evidence for the NGTL 2021 Pipeline Expansion Project Review (Attachment 2).

ECCC's comments are based on the departmental mandate in the context of *SARA*, the *Migratory Birds Convention Act 1994 (MBCA)*, and the *Canadian Environmental Protection Act* 1999 *(CEPA)*.

Please contact Laura James at 204-984-5157 or laura.james2@canada.ca if you have any questions or concerns.

Sincerely,

Mary Taylor
Director General

cc: Georgina Williston, Head, EA South, Environmental Protection Branch
cc: Laura James, Senior Environmental Assessment Coordinator, Environmental Protection Branch

Attachment 1: ECCC's Response to NEB's SARA S.79 Notification Letter
Attachment 2: ECCC's Written Evidence for the NGTL 2021 System Expansion Project

Attachment 2: Environment and Climate Change Canada's (ECCC) Written Evidence for the NGTL 2021 System Expansion Project

Part A: Species at Risk

BOREAL CARIBOU

Introduction

The 2021 NGTL System Expansion is a proposed 350 km 48 inch outside diameter natural gas pipeline project and associated facilities in northwestern Alberta. The project would "loop" or add new pipeline parallel or adjacent to the existing NGTL System. The Project includes 8 pipeline loops and three compressor station unit additions in three main areas: Grand Prairie West, Grande Prairie South, and Edson South.

A portion of the Deep Valley Section in Grande Prairie South (approximately 43.9 km) is located within the Little Smoky Caribou Population Range. The Project parallels the existing Grand Prairie South Mainline for approximately 98% of its length within the caribou range, and within this area NGTL estimates it will result in 98.8 ha of habitat disturbance.

Range Disturbance and Critical Habitat Identification

The Little Smoky caribou range is considered 99% disturbed (1% undisturbed) under the Draft Alberta Government Provincial Woodland Caribou Range Plan (2017), and 96% disturbed (4% undisturbed) under the Report on the Progress of Recovery Strategy Implementation for the Woodland Caribou (*Rangifer tarandus caribou*), Boreal population in Canada for the period 2012-2017 (ECCC 2017). The majority of disturbance is caused by anthropogenic activities. The federal recovery strategy identifies "*65% undisturbed habitat in a range as the disturbance management threshold*" which provides a measurable probability (60%) for a local population to be self-sustaining. Disturbance in the Little Smoky range thus greatly exceeds the disturbance management threshold of 65% for boreal caribou. The Little Smoky herd is considered not to be self-sustaining.

Given the pre-existing cumulative effects on habitat and individuals in the Little Smoky range and the absence of a spatially explicit provincial range plan consistent with the federal recovery strategy, all remaining existing habitat in this range (i.e., all habitat outside permanent alterations) is considered potential critical habitat and thus necessary for caribou survival and recovery. Because of the extent of anthropogenic disturbance in the range and the impact on the Little Smoky herd, ECCC is of the view that existing cumulative effects on the survival and recovery of this local population of boreal caribou are adverse, high in magnitude and high in geographic extent. As a result, it is ECCC's view that any additional habitat loss in the Little Smoky range should be avoided. In the event that the project is approved, additional habitat loss should be fully mitigated using offsets.

NGTL's Caribou Habitat Restoration and Offset Measures Plan (CHR&OMP)

The strategic outcome of NGTL's CHR&OMP is to "*avoid or reduce the predicted residual Project effects and offset the Project's contribution to cumulative effects on caribou and caribou habitat in a manner that aligns with provincial and federal policies, management plans and priorities*" (pg. 1-3 in Wood Environment & Infrastructure Solutions 2018). ECCC has evaluated the Project effects on caribou and their habitat and whether NGTL's CHR&OMP aligns with the federal Recovery Strategy for the Woodland Caribou (*Rangifer tarandus caribou*), Boreal population, in Canada (ECCC 2012) and presents its findings below.

NGTL's preliminary CHR&OMP (Wood Environment & Infrastructure Solutions 2018) estimates that the total Project construction footprint area is 186.2 ha, of which 87.9 ha will directly overlap existing disturbances (e.g., primarily the Grand Prairie Mainline, as well as cutlines, seismic lines, roads, cutblocks and wellsites). As a result, NGTL estimated that the Project will directly affect 98.3 ha of existing habitat within the Little Smoky range, as well as indirectly affect 0.5 ha of habitat, resulting in a total disturbance of 98.8 ha of habitat. NGTL proposes to mitigate this effect by restoring 68.0 ha of habitat on the Project footprint, resulting in a residual (or *total remaining*) disturbance of 30.8 ha (Table 2-1 in the preliminary CHR&OMP, hearing record A6F4R2). The majority of this residual disturbance (30.3 ha) is attributed to the operational access corridor, which may be allowed to regenerate naturally, but will be subjected to periodic vegetation management. NGTL also suggested that restoration/tree planting may be considered, if required, along the operational right-of-way (page 3-2 in the CHR&OMP). Given the likelihood of vegetation management activities along the corridor, it is currently unclear to ECCC whether the operational access corridor will be reclaimed and, as such, will contribute to caribou habitat restoration measures.

To mitigate for residual Project effects, NGTL calculated an *initial offset value* of 14.7 ha (Table 4-1 in the preliminary CHR&OMP, hearing record A6F4R2). NGTL defines the initial offset value as "*the area required to be offset after habitat restoration measures are implemented on the restored footprint, and include the area of remaining direct and indirect disturbance*" (page 4-1 in Wood Environment & Infrastructure Solutions 2018). The initial offset value is thus based on the residual post-restoration value of habitat in the Project footprint. Based on NGTL's information, it is ECCC's understanding that NGTL will reclaim a total of 82.7 ha of habitat (68.0 ha in the Project footprint plus 14.7 ha offset) which, when compared to NGTL's calculation of habitat disturbance (98.8 ha), results in an offset ratio of only 0.84:1 and a net loss of habitat for caribou. When calculating the initial offset value, NGTL applied an *inherent effect* adjustment that discounted or reduced Project effects by 80% (or 0.2) when the Project footprint paralleled existing rights-of-way (RoW) (Wood Environment & Infrastructure Solutions 2018). This reduction was applied because parallel alignment was assumed to have a lesser effect on caribou range utility than new alignment, given the effects of existing disturbance on caribou. The net effect of this approach is to reduce the offset requirement in areas with high existing disturbances.

ECCC has identified several concerns with NGTL's calculation of Project effects and initial offset value. It is ECCC's view that the approach taken by NGTL does not align with the federal Recovery Strategy for the Woodland Caribou (*Rangifer tarandus caribou*), Boreal population, in Canada (ECCC 2012) as it does not address loss to potential critical habitat. Specifically, the recovery strategy indicates

that, in ranges with less than 65% undisturbed habitat, initially critical habitat is the existing habitat that over time would contribute to the attainment of 65% undisturbed habitat. Given the absence of a spatially-explicit provincial range plan for the Little Smoky herd, all existing habitat in the range is considered potential critical habitat. Critical habitat is defined as the habitat that is necessary for the survival and recovery of a species. As a result, it is important to understand how the Project will affect the existing habitat in the Little Smoky Range.

The recovery strategy for boreal caribou defines existing habitat as the entire boreal caribou range area minus permanent alterations. Permanent alterations are further defined as existing features found within a range, such as industrial and urban developments, permanent infrastructure and graded or paved roads that do not currently possess or have the potential to possess the biophysical attributes of critical habitat for boreal caribou. To align with the recovery strategy, Project effects should be determined by removing permanent disturbances from the Little Smoky Range (including a 500 m buffer around permanent disturbances), and then calculating the overlap of the Project with the remaining existing habitat, or potential critical habitat. NGTL did not follow this approach. Rather, NGTL removed both permanent and non-permanent disturbances (e.g., cutlines, seismic lines, and cutblocks) from the range when calculating total existing disturbance. To be consistent with the recovery strategy, only permanent disturbances (and their buffers) should be removed from the range. As a result, it is ECCC's view that the Project's effects on potential caribou critical habitat, as well as required offsets to mitigate Project effects, have not been appropriately calculated by NGTL in a manner consistent with the recovery strategy, and have been underestimated.

In addition, it is ECCC's view that the application of an *inherent effect* adjustment by NGTL, whereby Project effects are discounted or reduced by 80% (or 0.2) when the Project footprint parallels an existing RoW, is also not consistent with the recovery strategy. This is because all existing habitat (outside permanent disturbances and their buffers) in the Little Smoky range, including non-permanent features such as cutlines and seismic lines, is considered potential critical habitat. Project effects should thus not be discounted or reduced when the Project footprint parallels this existing habitat, given its potential value for caribou. By discounting Project effects because they are adjacent to this habitat, as done by NGTL, the overall offset requirement is reduced, contributing to a low offset ratio (0.84:1) and net loss of habitat for caribou in the Little Smoky Range. Given the status of the herd and cumulative loss of habitat in the range, ECCC considers the offset ratio insufficient to mitigate Project effects.

In summary, it is ECCC's view that NGTL has underestimated the Project's effects on potential critical habitat for boreal caribou in the Little Smoky Range, as well as the required offset to mitigate these effects. NGTL's approach is not consistent with the federal recovery strategy for boreal caribou nor with NGTLs own desired strategic outcomes for the CHR&OMP. ECCC is of the view that the proposed Project has the potential to add to the existing cumulative effects within the Little Smoky range, resulting in a potential increase in risk to the recovery of the local population.

ECCC's Recommendations

ECCC recommends the final CHR&OMP include the following:

- To identify adverse effects to critical habitat, NGTL only remove the permanent alterations and their buffer from the range to determine the loss of existing habitat (potential critical habitat) resulting from Project disturbance. Offsets should subsequently be calculated based on the loss of existing habitat. In addition, Project effects should not be discounted or reduced using an inherent effect multiplier when the Project footprint parallels existing habitat, as defined by the recovery strategy.

- The plan should clearly demonstrate that restoration is feasible and that restoration success will be verified through a follow-up program. Consideration should be given on the limits of what can be compensated for through habitat restoration; for example, irreplaceable critical habitat (e.g. calving area), or where there is a high probability that restoration will fail.

- Habitat restoration should be, at least in part, functional prior to or at the time the Project activity is undertaken. Habitat measures to reduce predator movement should be implemented in a timely manner to reduce adverse effects on caribou.

- Habitat restoration should be located within the Little Smoky range and in areas of the range that could provide the greatest benefits to the herd in order to diminish risk to the survival or recovery of the affected local population.

- Habitat restoration ratios should account for identified risks and uncertainty associated with the implementation of the measure including the following considerations:
    1. the total disturbance area (project footprint + 500m buffer that occurs outside permanent alterations)
    2. the time-lag associated with habitat restoration,
    3. the time-lag associated with habitat offsetting,
    4. the uncertainty in the success of habitat restoration and condition (quality) of restored and offset habitats, and
    5. the application of the precautionary principle when Threatened/Endangered species are affected.

- A minimum 4:1 offset ratio (habitat restored: habitat lost) be implemented to account for inherent uncertainties and time-lags in reclamation. Given these uncertainties and limitations, offsets must provide more habitat than what the Project is disturbing to ensure adverse effects are fully mitigated. This is particularly important in ranges with little undisturbed habitat remaining. Restoration based offsets or compensation measures are subject to large time lags between when the measure is implemented and the time it takes for the measure to take effect (Laitila et al. 2014). Large time lags present an increased risk to the permanence of restoration as there is increased potential for the restoration to be impacted by future developments (Robichaud and Knopff, 2015). The proponent should also consider Environment Canada's *Operational Framework for Use of Conservation Allowances 2012.*

- Robust monitoring and enforcement programs be implemented.

- Measures (e.g., securing site tenure, securing financial assurances, monitoring) be in place to ensure that mitigation lasts for at least as long as the adverse impacts from the activity, and preferably in perpetuity.
- ECCC be given the opportunity to review and comment on the final CHR&OMP, follow-up and monitoring plans, and reports. Final habitat values and locations should be provided in those documents to support mitigation measures directed at reducing the risk to the survival or recovery of caribou. In addition, ECCC recommends that air photo alignment sheets be provided showing and describing the exact measures to be implemented.
- Access control measures be implemented and effective across the full width of any and all other adjacent RoW dispositions, as identified by the Board.

In regards to offsets, ECCC emphasizes that the application of the 4:1 ratio (habitat restored: habitat affected) should be considered a minimum. ECCC consistently recommends a 4:1 minimum offset ratio for various pipeline projects, for example the NGTL Little Smoky Lateral Loop Project and NGTL System Expansion project. In addition, it is noteworthy that the British Columbia Boreal Caribou Recovery Implementation Plan also recommends a 4:1 habitat offset for petroleum and natural gas development (https://engage.gov.bc.ca/app/uploads/sites/121/2017/03/Draft-Boreal-Caribou-Recovery-Implementation-Plan-2017-2.pdf). ECCC recommends the implementation of a 4:1 offset ratio in the Little Smoky range, given the extensive disturbance within the range. ECCC also advises that a minimum 4:1 ratio would not remove any incentive to avoid new cut, a concern that was recently expressed by the Board on the NGTL Boundary Lake project. The Province of Alberta has a longstanding policy of requiring linear features to parallel existing disturbances, to minimize disturbance footprint on the environment (Master Schedule of Standards and Conditions, Government of Alberta, 2017). This standard is reiterated in the Alberta Government's Draft Provincial Woodland Caribou Range Plan 2017.

Part B: Greenhouse Gases and Air Pollutants

Construction related emissions

Introduction

As a part of the review of the Project, ECCC considered how predicted ambient pollutant concentrations compare with the Canadian Ambient Air Quality Standards (CAAQS). The CAAQS are a component of the federal, provincial and territorial governments collaboration to improve air quality through the Air Quality Management System (AQMS). The aim of the AQMS is to improve air quality across Canada for the protection of human health and the environment. Once approved by the Canadian Council of Ministers of the Environment (CCME), the federal government establishes CAAQS as air quality objectives under sections 54 and 55 of Canadian Environmental Protection Act, 1999 (CEPA). Although the CAAQS are not legally binding, federal, provincial and territorial governments have agreed to work collaboratively to implement actions to improve air quality and to report on the achievement of the

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Projet d'agrandissement du réseau en 2021 Projet

VOLUME 3

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L'audience tenue à

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Crow Flag Meeting Room and Eagle Robe Room
3777 Grey Eagle Drive
Calgary, Alberta

May 14, 2019
Le 14 mai 2019

International Reporting Inc.
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GH-003-2018

IN THE MATTER OF NOVA Gas Transmission Ltd.
2021 System Expansion Project

HEARING LOCATION/LIEU DE L'AUDIENCE

Hearing held in Calgary, Alberta, Tuesday, May 14, 2019
Audience tenue à Calgary (Alberta), mardi, le 14 mai 2019

BOARD PANEL/COMITÉ D'AUDIENCE DE L'OFFICE

Roland George	Chairman/Président
Murray Lytle	Member/Membre
Damien Côté	Member/Membre

APPEARANCES/COMPARUTIONS

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NOVA Gas Transmission Ltd.
- Mr. Sander Duncanson
- Mr. Kevin Thrasher
- Mr. Brian West
- Ms. Carrie Dunn
- Mr. Jaron Dyble
- Mr. Mark Graham

Intervenors/Intervenants

O'Chiese First Nation Consultation Office
- Ms. Connie Tuharsky
- Elder Joanne Gladeau (interpreter)
- Elder Leslie Yellowface
- Mr. John Strawberry
- Elder Ron Desjarlais
- Mr. Sammy Beaverbones
- Elder Danny Daychief
- Mr. Randy Beaverbones
- Mr. Allan Bremner
- Mr. Jack Chipaway
- Mr. Dennis Strawberry
- Elder Jeanne Chipaway
- Elder Rosie Bremner
- Elder Blondia Strawberry
- Elder Elizabeth Strawberry
- Elder Pauline Mackinaw
- Ms. Frieda Strawberry
- Ms. Diane Beaverbones:
- Elder Josephine Thomas Bremner
- Elder Ruby Bremner
- Mr. Terrance Strawberry
- Mr. Shane Poorman
- Elder Mike Daychief
- Elder George Beaverbones
- Elder Wilbert Strawberry
- Mr. Ben Saulteaux
- Mr. Jeffery Daychief
- Elder Percy Strawberry
- Mr. Francis Strawberry
- Mr. Abel Lagrelle

APPEARANCES/COMPARUTIONS
(Continued/Suite)

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Samson Cree Nation
- Mr. Kennedy A. Bear Robe
- Ms. Katherine Swampy
- Elder Josephine Buffalo
- Elder Leo Bruno
- Ms. Beverly Crier
- Mr. Brian Lightning
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UNDERTAKINGS/ENGAGEMENTS

No.	Description	Paragraph No./No. de paragraphe

1287. **MS. LADOUCEUR**: Hello. My name is Paige Ladouceur. I work at the Major Projects Management Office at Natural Resources Canada and we are the Crown consultation coordinator for the activity.

1288. **THE CHAIRMAN**: Thank you. Do we have any other Intervenors present today that wish to be identified?

1289. I don't see any, so as I have not been made aware of any preliminary matters, are there any? I don't hear any.

1290. If Samson Cree so choses, it may provide some introductory -- sorry, you've already done that. I better change my introductory remarks here.

1291. Samson Cree Nation Panel engaged in a smudging ceremony and prayer to affirm their sharing of Indigenous knowledge. Let the record state that the Elders, knowledge keepers, and interpreters of Samson Cree Nation who are sharing Indigenous knowledge today have provided their affirmations.

1292. Also, I would like to thank Samson Cree Nation Panel for accepting our gift of tobacco and for the smudging ceremony.

KATHERINE SWAMPY: Affirmed
JOSEPHINE BUFFALO: Affirmed
LEO BRUNO: Affirmed
BEVERLY CRIER: Affirmed
BRIAN LIGHTNING: Affirmed
BYRON SOOSAY: Affirmed
BESIM BUFFALO JR.: Affirmed
KYRA NORTHWEST: Affirmed
KAYLYN BUFFALO: Affirmed

1293. **THE CHAIRMAN:** One last thing before you begin, will any of the Elders or knowledge keepers be using any visual aids today?

1294. **MS. KATHERINE SWAMPY:** Yes, we do have some presentations. Is there a technician available to help us? Is there a technician available to help us get our information on the board? Yes? All right. Thank you.

1295. **THE CHAIRMAN:** Yes, there is. Have you brought that information? I assume you have that information with you. Have you already provided it?

1296. Okay. Thank you.

1297. I guess we're now ready to begin the sharing of oral Indigenous knowledge.

--- ORAL PRESENTATION BY/REPRÉSENTATION ORALE PAR SAMSON CREE NATION:

1298. **MS. KATHERINE SWAMPY:** We'll be first hearing from Leo Bruno, elder and knowledge keeper from Samson Cree Nation.

1299. **ELDER LEO BRUNO:** (Speaking in Native language).

1300. In translation, I think and put our Creator in all aspects of our lives.

1301. My name is (Native name), Leo Bruno, from Samson Cree Nation.

1302. I wish to thank, in appreciation to the Tsuu T'ina Nation for opening their doors to have the NEB hearings in their Treaty 7 territory.

1303. I wish to acknowledge and thank all of Tsuu T'ina and Treaty 7 area.

1304. My name is (Native name). I am one of the elders from Samson Cree Nation.

1305. According to the overview on the NGTL website, we are on the First Nations identified as potential impacted stakeholders by the NGTL 2021 project. As such, we have questions, concerns, interests, as well as considerations in all aspects of this project's impacts, such as socio-economic impacts, environmental and land considerations.

1306. There are many other important factors we wish to bring to your attention, such as our continued involvement in all stages of this project. That's the pre, present, and post. As well as we wish to convey to NOVA Gas Transmission (NGTL), as I understand to be a wholly owned subsidiary of TransCanada Pipelines Limited, TransCanada.

few years now, but there isn't as much as I remembered growing up.

1362. In the Little Smoky area, the caribou -- we never took a lot of caribou because we knew that they were in decline. So and the times that we did take caribou when I was growing up, we only -- I -- there was only two times that I could remember, and my dad used to always tell me, "You know, they're declining because of not just predators, but because of industry and a loss of habitat."

1363. So and that's the reason we rarely harvested caribou, but we lived off moose, deer, grouse, rabbits, muskrats, beaver, porcupine, you know, and all those animals are starting -- like, it's getting hard to find them, because they are in decline because of the loss of habitat for them.

1364. You know, we just recently did a hunt here for the 2021 NGTL expansion along that pipeline system and, you know, I was fortunate enough to be able to harvest three moose, two elk, and a deer from that area, all the way down from Forsberg, all the way up to -- almost to the Smoky -- Little Smoky River going north. And the importance of that hunt was so that we could feed our community members. With that amount of wildlife that we harvested, I fed 56 families, my group, just before Christmas. So that was a -- it was really good for our community.

1365. And some of the limitations for our hunting is getting access to a lot of our traditional hunting lands. Some of the big pipelines, like the company names on the signs, there's a number, but they're always passing the buck to the next person. You got to ask this guy. You got to ask that guy. So it was always very difficult to get into any of these places.

1366. So with that hunt, I stuck as close as I could to the proposed expansion project. And we were fairly – like, we were lucky to get the animals that we did get. And like I was saying before, when I hunted there before, there used to be a lot more animals. I don't know if they're just being pushed out from industry, and just the locked gates all the time.

1367. And the non-Indigenous hunters and the increased strains of competition is another thing with us being able to harvest animals for our personal consumption with our families and friends. We -- you know, we use a protocol when we go out hunting, and that's giving thanks and offerings to our grandfathers and grandmothers for being able to give us the wildlife that we can

1448. Again, this is pure land, pure undisturbed lands. And then as you -- as the time period in the legend becomes -- as the arrival of the newcomers come, you can see the numbers are shrinking. These are the numbers of the bison and the territories in which they were able to roam in, up until you come into the 1850s, around about that time. It was a serious -- the numbers were seriously declining. Everybody knew that, could see it.

1449. The explorers could see it. The new settlers could see it. The people who were settling in the U.S. could see it. Our people saw it as well. And that map of -- that picture that I showed you of Maskepiton, he had gone into Fort Laramie to just -- to discuss with other tribes the serious decline of the bison in the whole territory because they were -- the numbers had declined so -- in great numbers.

1450. And then there's little dots in the legend. If you look at that map properly it will tell you that there were some places, it was in -- there's a small group in the Northwest Territories and in the Yellowstone National Park were the ones that they had very limited and very small numbers and they were able to protect them and now we see them growing again.

1451. I think it's important that you understand why we take the positions that we do and how we feel strongly about taking care of the land and being stewards. And the presentation that I showed you is a bit of a comparison, like, from the past to now. Look at how the landscape and the cultural -- how the landscape has changed drastically and the small, small numbers, the same way that the bison numbers were brought into smaller and smaller areas, it's the same thing that we are living today as human beings.

1452. We want to hunt. We want to fish. We want to pick our medicines. We're Treaty people. This is the way we have always lived. This is what we negotiated at the time of Treaty, to be able to sustain our people. And when you look at this map and you look at those numbers and you look at us today, we are like those little tiny numbers where you see only 25 left in one area, only 50 bison left in another area.

1453. I mean, you know, it's so pitiful that we have to argue, we have to convince you that we have a right here, that we have to convince you that we have a voice here that should be listened to. This whole map that you see there between Canada and the United States with, it's criss-crossed with pipelines. Everything's been disturbed. The wildlife don’t know where to go. They have

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Damien Côté	Member/Membre

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- Mr. Besim Buffalo Jr.
- Ms. Kyra Northwest
- Ms. Kaylyn Buffalo

Alexis Nakota Sioux Nation
- Ms. Robin Dean
- Ms. Karey Brooks
- Elder Roderick Alexis
- Ms. Bridget Bull
- Mr. Joby Alexis Yellowdirt

Tsuu T’ina Nation
- Ms. Violet Meguinis

Natural Resources Canada
- Ms. Paige Ladouceur
- Ms. Carolyn Pharand

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--- Upon commencing at 8:23 a.m./L'audience débute à 8h23

1478. **THE CHAIRMAN**: Ladies and gentlemen, welcome to Calgary for today's portion of the oral Indigenous knowledge portion of the National Energy Board's GH-003-2018 hearing concerning NOVA Gas Transmission Ltd., for NGTL's proposed 2021 System Expansion Project.

1479. The Board wishes to acknowledge the traditional territories of the people of the Treaty 7 region in Southern Alberta, which includes the Blackfoot Confederacy, the Tsuu T'ina First Nation, and the Stoney Nakoda. The City of Calgary is also home to the Métis Nation of Alberta, Region III. The NEB is committed to learning and fulfilling the relationships of Treaty 7 and to moving forward together on the journey of reconciliation.

1480. My name is Roland George and I am the Chair of the Panel. My fellow Panel Members are to my right, Dr. Murray Lytle and to my left, Mr. Damien Côté.

1481. For those of you who were not with us yesterday, I will cover a few safety and housekeeping matters.

1482. In the event that we hear a building evacuation tone -- and that tone is the continuous one -- or if there is an emergency, please exit the hearing room through the same doors you entered by. From the hallway outside the hearing room, there is a building exit to the left.

1483. Please remain calm and exit the building in an orderly fashion. Continue to the left of the building and to the front of the building to the orange sign in the parking lot which is the muster point. Please take a roll call of your group to make sure that everyone has evacuated. If someone is not accounted for, draw it to the attention of our Hearing Manager.

1484. Board staff are wearing gold name tags for easy identification. Please feel free to approach any of them if you have general questions.

1485. Also, we request that everyone in attendance turn off or mute your mobile phones for the duration of this session, as they can be disruptive.

1486. We will now resume the hearing on oral traditional knowledge from Samson Cree Nation.

1487. Ms. Swampy, I believe you have a motion to make.

KATHERINE SWAMPY: Resumed
JOSEPHINE BUFFALO: Resumed
LEO BRUNO: Resumed
BEVERLY CRIER: Resumed
BRIAN LIGHTNING: Resumed
BYRON SOOSAY: Resumed
BESIM BUFFALO JR.: Resumed
KYRA NORTHWEST: Resumed
KAYLYN BUFFALO: Resumed

1488. **MS. KATHERINE SWAMPY**: We would like to first start off with a smudge this morning.

1489. **THE CHAIRMAN**: Certainly.

--- (Smudge)

--- (Prayer in Native language)

1490. **MS. KATHERINE SWAMPY**: (Speaking in Native language). Good morning, everyone.

1491. As we reconvene this morning, I would first like to excuse the absence of our three hunters, Chris Montour, Shawn Soosay, and Kacey Yellowbird that were unable to present yesterday due to severe health concerns. Although they are unable to present here today, they would like to submit the oral traditional evidence they had hoped to present today in written form, due to the situation.

1492. **THE CHAIRMAN**: Mr. Duncanson.

1493. **MR. DUNCANSON**: Thank you, Mr. Chairman.

1494. So we do understand that these are unforeseen difficult circumstances so we're not opposed to that request. I think it would be useful to provide some parameters around how that will work, both in terms of the scope of what's provided -- I understand it would be essentially just in written form what would otherwise have been shared in oral traditional evidence, and that's acceptable to us

if that's the scope. And I think it would also be useful to provide some direction in terms of when this would be filed and we would, of course, be looking for an opportunity to have time to review it and ask any questions that we might or might not have.

1495. **THE CHAIRMAN**: Ms. Swampy, what is going to be covered in written, is it as Mr. Duncanson's assumption is?

1496. **MS. KATHERINE SWAMPY**: It's oral traditional evidence based on the hunters' knowledge of being out on the exact site that we're discussing today and how they want to preserve and protect what they know and how they know it.

1497. **THE CHAIRMAN:** And do you have a timeframe that you believe would be reasonable for them to be able to provide that written evidence?

1498. **MS. KATHERINE SWAMPY:** I'm sure some healing time would be needed for Mr. Montour, but with the other two they might be able to provide it. If you guys could provide us with a timeline of how long you would be willing to wait for them, we can ask the three hunters and give them the specified timeline for them to provide.

1499. We are thinking we could get them in as soon as two weeks.

1500. **THE CHAIRMAN:** Mr. Duncanson, is two weeks acceptable?

1501. **MR. DUNCANSON:** That's fine with us, Mr. Chairman. And then perhaps we could have a week to review that and file any questions we might have?

1502. **THE CHAIRMAN:** We find that acceptable.

1503. Are there any other matters that you would wish to bring up?

1504. **THE REGULATORY OFFICER:** That's Ruling Number 7.

1505. **THE CHAIRMAN:** Thank you.

1506. **MS. SWAMPY:** As we reconvene with our speakers, we would like to start with Elder and Knowledge Keeper Leo Bruno.

--- ORAL PRESENTATION BY/REPRÉSENTATION ORALE PAR SAMSON CREE NATION: (Continued/Suite)

1507. **ELDER LEO BRUNO:** Good morning. (Speaking in Native language) as we say in our language.

1508. (Speaking in Native language).

1509. In translation my name is Kisikawasis. My European classification is Leo Bruno. I am from Maskwacis. I'm an Elder from Samson Cree and as we indicated to you yesterday by one of the presenters, our Samson Cree is called Nipisihkopahk in our language.

1510. We are honoured this morning to have an opening prayer by our revered Elder, honoured revered Elder that we are blessed to have here say our opening prayers this morning. And as she indicated, we are not selfish. In her prayers we are not selfish. When we pray or show cause to do protocol, we are not selfish. We pray for everyone not just for Maskwacis, but all First Nation, Indian Nation, all of aboriginal country and all of Canada and as a whole globally. So I was honoured that I was in her prayers this morning. And my prayers are to her as well.

1511. Just at New Year, just in January, she lost her oldest boy -- baby, her baby boy. And he was very well known, her son, and a well respected individual and a proper upbringing by our Elder and it was a sudden loss. And his -- it's being appropriate that we -- I should mention it. And I asked her if I could mention it, mention her loss of her baby son, because she indicated that it's only proper we bring it out here; we're talking about our Elders or our hunters presenting yesterday and today. We have Besim Jr. who is going to be presenting as a hunter, as a well-experienced hunter, that our Elder's son indicated one of his last wishes was -- he wanted to eat wild meat, he preferred wild meat. And as such, he asked to have wild meat.

1512. And this -- it takes a lot of strength and courage to have her present here and especially, you know, to be asked by a protocol. And for us protocol -- and I'll be discussing the reciprocity and the cyclical nature of our way of doing things as in protocol. So we're very honoured to have her pray and give us her very presence to be here.

1513. And she wanted the Tsuu T'ina Nation to acknowledge that they have opened the doors for us to come in their nation here, so we're very honoured to be here. Tsuu T'ina opening the doors so that we can make a presentation in front of the National Energy Board and NGTL 2021 Expansion Project.

1514. She wanted -- and then yesterday that's what she conveyed as well. So on behalf of Samson Cree and all the people that are present here, I wish to acknowledge and I wish to honour our lady and Elder a very seasoned, very experienced, very well knowledgeable. She is very knowledgeable in harvesting and gathering, as well as the teachings of traditional ecological knowledge. So for every time I have the occasion to be with her and I have been -- I had the occasion to go along with some of our trips with her, and so I just wanted to acknowledge that. And she knows -- seeing that we had hunters -- and her son was a hunter as well. Her sons are hunters, very traditional taught hunters who respect and honour the ways of traditional ecological knowledge as she has taught -- her and her late husband Dolphis had taught their sons. So that is what I wanted to convey this morning before we go on.

1515. So thank you for giving me the time to make that presentation and it is her wish upon asking her if it was okay, and she said that was okay. So I wanted to just make sure that, you know, to tell everyone that he -- one of his last wish before he passed on was he wanted to eat the wild meat. *Hai Hai*. Thank you for your time on that and I will go on now with the presentation.

1516. As I indicated, we are a reciprocal cyclical First Nation. All First Nations are cyclical and reciprocal. And I stand to be corrected by my Elder on my right-hand side as I indicated earlier, and by a seasoned, well taught in the traditional ways hunting as he sits here, Besim Jr. Everything that we do, we do it in honouring our sisters and brothers, plants and animals.

1517. First of all, we acknowledge our Creator in every way, that we give thanks to our Creator. And in doing so, we practice on a daily basis, in our daily lives, as our Elder indicated when before we start a project, before we start anything, we acknowledge our Creator, and we acknowledge those people around us as she has done during her prayers.

1518. We do everything in cycles. In the spring, there are the spring ceremonies as our Elders teach us. I don't know these things. These are the things that were taught us. These are our Elders' teachings.

1519. In the summer there are certain ceremonies, certain things that are done, certain protocols. And the winter, fall, again, there are certain things that need to be done. The hunting, for example, it is not -- they don't hunt, as they indicated to you and you know, it used to be that without prior to the boundaries, prior to a lot of the gates being closed, prior to all these different boundaries, we could hunt anywhere, but not at any time. We respect and honour.

1520. Like, for example, a female doe carrying their young, we -- the hunters recognize the time. They were taught from a very young age that you do not engage in taking the life of an animal carrying their young while they're still carrying. They don't go out and hunt, and as they will tell you; my point being is we do everything in cycles.

1521. And to pick berries, for example, as our more seasoned harvesters and pickers will tell you that only certain times of the year, certain berries are picked, certain things are picked, certain medicines are picked, as they will tell you.

1522. Those are the reciprocal and cyclical natures. Whatever we take from our Mother Earth, before the hunters go out hunting, they pray. They give thanks. And when they drop a moose, it is for the glory of our Creator. And as our hunters indicated, they don't do it for themselves, they do it for everyone, as they do, because there are a lot of people that they feed.

1523. So they give thanks. They give thanks for the bounty that they bring home, they bring home to the people. They are not selfish. The Elders are not selfish. Our people are not selfish. Our people give. They are compassionate. (Native word) in translation, compassionate. They are helping everyone. In that way, being cyclical, they pick the berries, they hunt, they go out and pick out the medicines.

1524. One very important thing, that when we go out -- I live by the river at Samson Cree and then every once in a while, I need to take a tree that I need to remove for some reason. And that tree is perhaps, you know, it got run over or for some reason something happened to it, the grader came through and took part of the bark off. We need to cut that tree down.

1525. We just don't take an axe and, "Okay. You're out of here," and you know, we cut it and then put it the garbage. No. There are prayers. There is a way of doing things. We call it a protocol. We take tobacco and we offer it and then we ask that we do not harm anything. We're not in the nature of harming.

NOVA Gas Transmission Ltd. (NGTL) 2021
June 12, 2019
Prepared by the Firelight Group with Samson Cree Nation

Valued Component	NGTL 2020 NEB Proposed Condition (if any)	Recommended SCN mitigation
Grizzly	**Grizzly Bear Mitigation and Monitoring Plan**	**Grizzly Bear Mitigation and Monitoring Plan** Within 90 days of Project approval, the proponent must provide financial support to SCN for the development of an SCN Grizzly Bear Cultural Monitoring Study that will include consideration of the following: - Using TEK to develop a historical pre-disturbance baseline of grizzly bear habitat capability and suitability within the project area, based on available documents and oral histories of how grizzly bear used its habitat prior to widespread disturbance (and verification of crown-defined ranges); - This baseline should review how habitat has been incrementally removed over time from the project area; - Integrate Samson Cree Traditional Ecological Knowledge into the

Valued Component	NGTL 2020 NEB Proposed Condition (if any)	Recommended SCN mitigation
		identification of priority areas for conservation and restoration that consider both ecological factors as well as SCN knowledge and perspectives; - Examine the implications of habitat removal within the Local Study Area, with a primary focus on potential impacts to grizzly bear females with young which are the most vulnerable receptors to this proposed development; - Recommend habitat reclamation / recovery /offset to address impacts to grizzly bear habitat (particularly habitat for females with cubs); and - A commitment for the Proponent and other researchers to share data and results with SCN and other Indigenous groups and development of an adaptive management decision-framework that considers additional mitigations as needed. - A plan to monitor and assess the changes to density of linear disturbance over time; the effectiveness of primary and offset strategies; and whether the objectives are

Valued Component	NGTL 2020 NEB Proposed Condition (if any)	Recommended SCN mitigation
		being achieved (particularly for increasing females and cubs).
Culture and Heritage	11. Archaeological and Heritage Resource Permits and Clearances NGTL must file with the Board, at least 30 days prior to commencing construction of the section 52 Pipeline and Related Facilities: a) confirmation, signed by the Accountable Officer of the company, that NGTL has obtained all of the required archaeological and heritage resource permits and clearances from Alberta Culture and Tourism; b) a description of how NGTL will meet conditions and respond to any comments and recommendations contained in the permits and clearances referred to in a); and	At least 30 days prior to commencing construction of the section 52 and 58 Pipeline and Related Facilities Develop a Culture and Heritage Resources Management Plan (CHRMP) that provides measures for: a) An annual contribution to the Samson Cree Nation, for the duration of construction and operations, of no less than $100,000 per year adjusted annually to account for inflation, to support rights-based education and intergenerational transmission of Indigenous knowledge regarding the Project area, including through seasonal cultural camps, or other efforts to be determined by SCN. Similar contributions may be made available to other affected Indigenous Groups. b) A cultural Protocol determined by affected Indigenous Groups for treatment of human remains;

Valued Component	NGTL 2020 NEB Proposed Condition (if any)	Recommended SCN mitigation
	c) a description of how NGTL has incorporated additional mitigation measures into its EPP as a result of conditions, comments, or recommendations referred to in b).	c) Increased Indigenous Oversight / Co-management / shared decision-making in regard to the Project; d) Increasing Indigenous engagement and oversight of the project by requesting enhanced consultation on construction and operational plans and by enhancing the role of SCN in co-developing plans and verifying condition compliance; e) Indigenous monitors (see condition 8 and 18) to be employed on property during investigative activity at all project phases, including authority to "stop work" and manage direction for handling/treatment of cultural object(s) with provisions for: a. The Proponent to provide additional funding to enable this increased support for the on-site Indigenous Monitor; b. Additional funds allocated for the Indigenous Monitor to access “Local Resource Specialists” that the on-site Indigenous Monitor trusts to protect their Indigenous and Treaty Rights and interests;

Valued Component	NGTL 2020 NEB Proposed Condition (if any)	Recommended SCN mitigation
		c. Commitment for increased transparency of all monitoring results; f) Commitment for improving the collection and use of Indigenous knowledge to avoid impacts to culturally sensitive sites and to enable emergency responders to respect SCN rights and interests when dealing with spills/accidents. g) Implementation funding for the CHRMP; h) A predefined dispute resolution mechanism developed with support from affected Indigenous Groups; i) Commitment to not conduct any physical works or activities within an agreed upon distance for cultural, historic or archaeology sites, as agreed to between the Proponent and affected Indigenous Groups, revision to Project design may be required based on pre-construction fieldwork and/or sites identified by Indigenous monitors working in the field; j) Commitment that best efforts will be made by the Proponent to ensure that the physical and cultural integrity of grave

Valued Component	NGTL 2020 NEB Proposed Condition (if any)	Recommended SCN mitigation
		sites and identified sacred locations are not impacted by development and or contamination from construction, operations and or accident. k) Commitment to engagement with Indigenous Groups when an HRA or other related field-work is required; and, When it is not possible to avoid culturally sensitive areas, compensation or offset plans will be developed in direct engagement with the affected Indigenous group[s].
Navigation and Navigational Safety	n/a	As part of the Project Access Management Plan, NGTL to Develop and file at least 60 days prior to commencing construction to the Board, a Navigation Access Management Plan (AMP), that includes bus it not limited to measures for: a) SCN involvement in developing a base flow metric for ensuring access to preferred harvesting areas by water. b) Includes SCN monitoring (See conditions 8 and 18) for the life of the project to monitor and maintain navigation access.
Traffic (Related to navigation and navigational safety)	n/a	Proponent to file with the NEB, at least 60 days prior to commencing construction, a Traffic

Valued Component	NGTL 2020 NEB Proposed Condition (if any)	Recommended SCN mitigation
		Control Management Plan, for access to facilities. The Plan shall describe and include but not be limited to: a) Contribution to Samson Cree Nation for the purchase of radios and or other equipment required for traditional land users to access industrial roads and water crossings; b) reference to the current status and condition of all roads and water crossings to be used to access Project facilities; c) any improvements required to bring existing roads and water crossings up to industrial traffic standards; d) a summary of traffic issues identified in consultation with government and Indigenous groups with a description of how these issues are addressed in the Traffic Control Management Plan; e) A commitment and strategy to work with SCN and other affected Indigenous groups to facilitate communication with contractors for developing safety rules within the construction footprint including speed limits; and

Valued Component	NGTL 2020 NEB Proposed Condition (if any)	Recommended SCN mitigation
		f) Evidence of engagement with Samson Cree Nation on the traffic control plan.
Access (Related to Navigation and Navigation Safety)	n/a	Proponent to develop a Project-specific culturally appropriate access management plan and file with the board at least 60 days prior to construction. Plan to include but not be limited to the following measures: a) commitment and funding for pre-construction site visits in select areas with SCN Land users which will provide additional information on areas that need access provisions for safe crossing, traditional use sites and/or environmental features that merit marking and or special mitigation during construction. b) updated Environmental Data Sheets including areas marked off, limits to worker travel, or construction activity with evidence that these were also shared with Indigenous groups prior to filing; c) identification of what access routes will be open to use, by whom, during what timeframe, and with what modes; d) funding for SCN to develop their own internal access maps demarcating safe

Valued Component	NGTL 2020 NEB Proposed Condition (if any)	Recommended SCN mitigation
		access routes by land and water for SCN members in the project area based on data provided through a, b and c; e) Resources and provision for SCN participation in access monitoring for the life of the project including pre-construction monitoring to determine existing levels of access along the ROW; f) identification of the eventual state that new access created as a result of the project (post construction) will be held in and opportunities for either decommissioning or remediating access corridors where deemed beneficial; and g) evidence of engagement with SCN and other affected indigenous groups in revising the access management plan.
Regional Access (Related to Navigation and Navigation Safety)	n/a	The Crown (Provincial and Federal) to work with SCN and other affected Indigenous groups to develop a Regional Access Management Plan with provision of resourcing for First Nations to engage in ongoing engagement in collaborative access management planning. Potential components of a regional access management plan include but are not limited to:

Valued Component	NGTL 2020 NEB Proposed Condition (if any)	Recommended SCN mitigation
		a. Identification of access (aquatic and terrestrial) routes for the exclusive use of established Section 35(1) rights; and b. Identification of protected areas/set asides and/or enhanced levels of protection for access routes supporting established rights not presently afforded by existing legislation and policy; c. Planning of road and bridge closures in order to minimize impacts on SCN established Section 35 Rights.

NATIONAL ENERGY BOARD

IN THE MATTER OF the *National Energy Board Act*, R.S.C. 1985, c. N-7, as amended (NEB Act), and the regulations made thereunder;

IN THE MATTER OF the *Canadian Environmental Assessment Act, 2012*, S.C. 2012, c. 37, as amended, and the regulations made thereunder;

IN THE MATTER OF an application by NOVA Gas Transmission Ltd. for a Certificate of Public Convenience and Necessity and other related approvals pursuant to Part III and Part IV of the NEB Act.

NOVA GAS TRANSMISSION LTD.

2021 NGTL SYSTEM EXPANSION PROJECT

REPLY EVIDENCE

June 19, 2019

To: The Secretary
National Energy Board
Suite 210, 517 Tenth Avenue SW
Calgary, AB T2R 0A8

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1.0 INTRODUCTION

NOVA Gas Transmission Ltd. (NGTL) is providing this Reply Evidence in response to evidence and comments filed by the following parties:

- Alexis Nakota Sioux Nation (ANSN)
- Blood Tribe (BT)
- Cadotte Lake Métis Local 1994 (CLML1994)
- Driftpile Cree Nation (DCN)
- Duncan's First Nation (DFN)
- Environment and Climate Change Canada (ECCC)
- Ermineskin Cree Nation (ECN)
- Health Canada
- Horse Lake First Nation (HLFN)
- Métis Nation of Alberta Region 3 (MNAR3)
- O'Chiese First Nation (OCFN)
- Piikani Nation (PKN)
- Saddle Lake Cree Nation (SLCN)
- Samson Cree Nation (SCN)
- Stoney Nakoda Nation (SNN) including evidence filed individually by:
  - Bearspaw First Nation (BFN)
  - Chiniki First Nation (CFN)
  - Wesley First Nation (WFN)
- Tsuut'ina Nation (TSN)
- Whitefish Lake First Nation #128 (WLFN)

NGTL also responds to a letter of comment filed by the Asini Wachi Nehiyawak Traditional Band (AWNTB).

NGTL has organized its Reply Evidence by sections that address specific issues as described below. NGTL notes that this Reply is in addition to and complements NGTL's responses to NEB Information Request (IR) No. 3.[1] NGTL will not readdress issues already covered off in those responses or elsewhere on the record.

NGTL does not agree with all statements made by Intervenors or Commenters in their written evidence and NGTL does not respond to every Intervenor or Commenter

[1] NEB Filing ID: A99941-1.

Preliminary Caribou Habitat Restoration and Offset Measures~~ment~~ Plan

Prepared for:

NOVA Gas Transmission Ltd.
Calgary, Alberta

June 2019~~8~~
CE04813

Prepared for:
NOVA Gas Transmission Ltd.
Calgary, Alberta

Prepared by:
Wood Environment & Infrastructure Solutions
401, 1925 – 18 Avenue NE
Calgary, AB T2E 7T8

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Third-party disclaimer

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ACRONYMS

AEP	Alberta Environment and Parks
ATV	all-terrain vehicle
CEMA	Cumulative Environmental Management Association
CHOIRMP	Caribou Habitat and Offset Implementation Report and Monitoring Program
CHROMP	Caribou Habitat Restoration and Offset Measures Plan
COSIA	Canada's Oil Sands Innovation Alliance
CSA	Canadian Standards Association
DEFRA	Department for Environment, Food and Rural Affairs
DFO	Department of Fisheries and Oceans Canada
ECCC	Environment and Climate Change Canada
FOV	final offset value
GIS	Geographic Information System
GPML	Grand Prairie Mainline
IOV	initial offset value
LIS	low impact seismic
NEB	National Energy Board
NGTL	NOVA Gas Transmission Ltd.
RDDV	residual direct disturbance value
RICC	Regional Industry Caribou Collaboration
RIDV	residual indirect disturbance value
ROW	right-of-way
RPRV	residual post-restoration value

1.0 INTRODUCTION

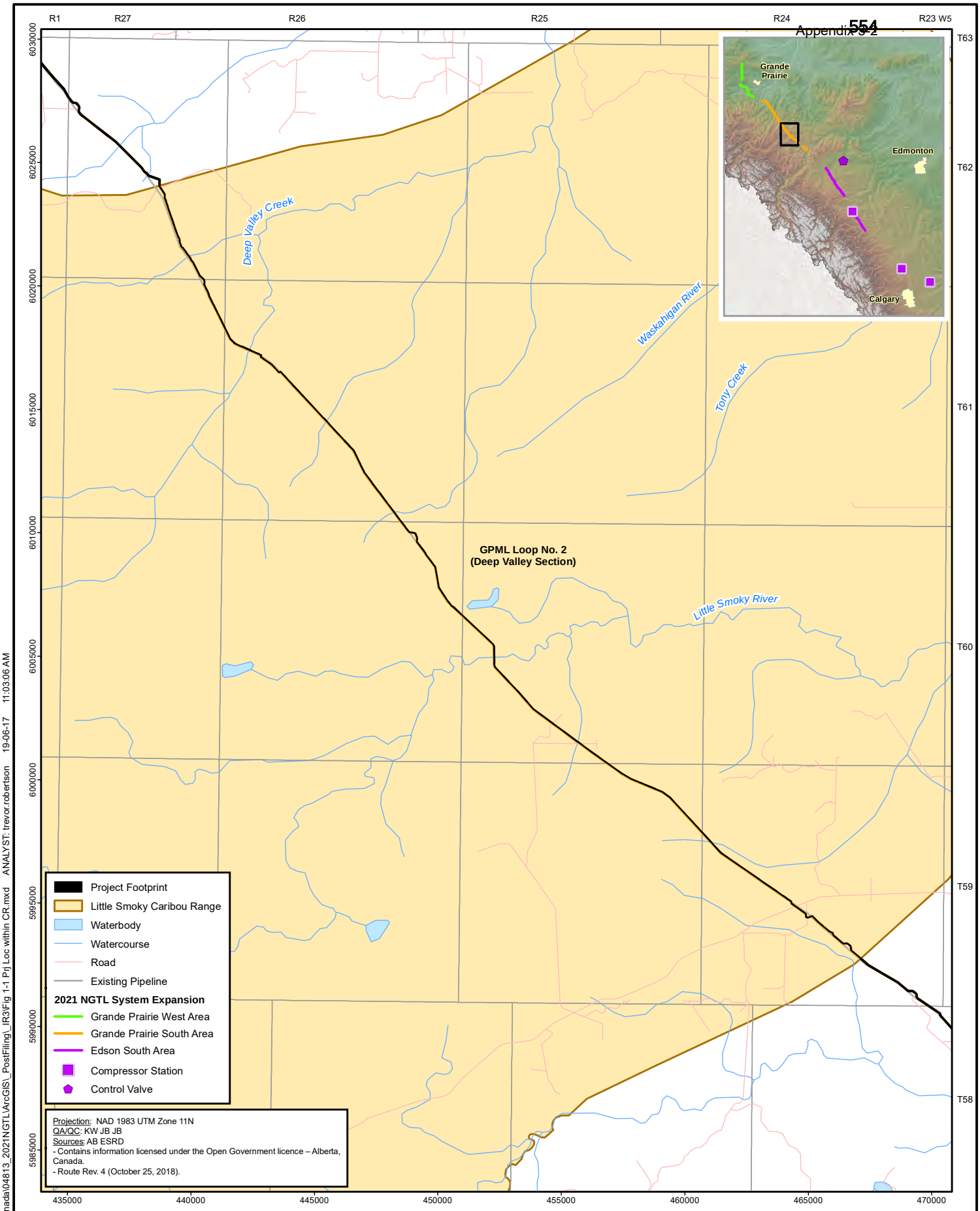
NOVA Gas Transmission Ltd. (NGTL), a wholly owned subsidiary of TransCanada PipeLines Limited (TransCanada), is applying to the National Energy Board (NEB) for approval under Section 52 of the *National Energy Board Act* (*NEB Act*) for authorization to construct and operate the 2021 NGTL System Expansion Project (Project). A portion of the Deep Valley Section (approximately 4~~4.03.9~~ km) is located within the Little Smoky Caribou Local Population Range (AB5, Environment Canada 2012) (Figure 1–1~~Figure 1–1~~). Within the caribou range, the Project parallels the existing Grand Prairie Mainline (GPML) for approximately 9~~6~~8% of the length, and results in ~~98.8~~122.39 ha of incremental direct and indirect disturbance. Construction is currently planned to begin Q3 2020.

This document presents the approach to the habitat restoration and offset measures associated with the Project. This Preliminary Caribou Habitat Restoration and Offset Measures Plan (CHROMP; the Plan) is based on conceptual Project planning and design information and is intended to quantify Project effects and establish an initial plan to restore and offset effects to caribou and habitat. Restoration and offset measures will be finalized based on detailed design and as-built construction information.

1.1 Approach

This document describes the Little Smoky Caribou Range and overall Range concerns, quantifies the effects of the Project (i.e., incremental direct and indirect), outlines the restoration and offset approaches, describes the monitoring and targets, and summarizes caribou specific consultation undertaken for the Project.

The approach and methods undertaken within this document are based on the NGTL "Restoration and Offset Program" document, which is included as Annex A~~Annex A~~ of this document. Whereas previous CHROMP documents combined project-specific details with the approach/methods, they have been separated in this Plan for clarity and consistency. This Plan also incorporates a detailed understanding of caribou issues within Alberta, as described in the literature review included within Annex B~~Annex B~~, as well as NGTL's experience and consultation efforts with government and stakeholders through this and previous projects located within caribou ranges (Annex C~~Annex C~~). The approach for all components has been refined based on regulatory consultation and experience gained across multiple projects since 2012. This approach will be used to evaluate the performance and effectiveness of NGTL's caribou habitat restoration and offset measures (Annex A~~Annex A~~). A Change Log for new additions/subtractions to the Preliminary CHROMP is provided in
Annex D~~Annex D~~. In addition, Photo Plates (Annex E~~Annex E~~) and Typical Drawings (Annex F~~Annex F~~) showing examples of restoration techniques are provided.



S:\Gis\Projects\CE\TransCanada\04813_2021NGTL\ArcGIS_PostFiling_IR3\Fig 1-1 Prj Loc within CR.mxd ANALYST: trevor.robertson 19-06-17 11:03:06 AM

TC Energy

2021 NGTL System Expansion Project

Proposed Project Location Within the Little Smoky Caribou Range

1 0 1
Kilometres
1:200,000

N

wood.

June 2019

Figure 1-1

1.2 Strategic Outcome and Goals

NGTL's caribou habitat restoration and offset measures are intended to contribute meaningfully to the conservation and recovery of woodland caribou in Canada.

NGTL's caribou habitat restoration and offset investments avoid or reduce the predicted residual Project effects and offset the Project's contribution to cumulative effects on caribou and caribou habitat in a manner that aligns with provincial and federal policies, management plans and priorities.

NGTL's goals include caribou habitat restoration measures that:

- are ecologically relevant, practically located and reasonably protected to minimize potential for re-disturbance by human activity; and
- result in self-sustaining and ecologically appropriate vegetation communities that are on trajectory to the compatible surrounding landscape.

1.3 Organization

This Plan is organized to reflect the process logic of NGTL caribou habitat restoration and offset planning and experience from past NEB conditions regarding caribou for NGTL projects. To simplify the content and layout of the Plan, NGTL process information has been included within a Restoration and Offset Program (Annex A~~Annex A~~). This Plan is organized in the following focused sections:

- Section 1: Introduction, project description and organization of the document;
- Section 2: Existing caribou habitat, range specific information, and quantification of project effects;
- Section 3: The caribou habitat restoration approach and implementation;
- Section 4: The preliminary offset selection and implementation;
- Section 5: Monitoring approach, targets and schedule;
- Section 6: Summary of caribou-specific consultation with Aboriginal communities, and federal and provincial regulators, as well as a summary of how feedback was incorporated; and
- Section 7: List of references cited throughout the document.

2.0 AFFECTED CARIBOU RANGE AND PROJECT EFFECTS

Characteristics of the Little Smoky Caribou Range habitat and populations are described, the Project effects to the range are quantified, and the approach to restoration and offsets is outlined in this section.

2.1 Little Smoky Caribou Range

2.1.1 Range Description

The Little Smoky Range (Boreal Population AB5; Environment Canada 2012) is located within the Foothills, Subalpine and Alpine Natural Regions, and Lower Foothills and Upper Foothills Subregions in west-central Alberta (GOA 2016). The Little Smoky population are non-migratory boreal caribou and the most southerly boreal population currently remaining in the province.

The distribution of woodland caribou in west-central Alberta has greatly declined over the last 50 to 80 years (GOA 2016). The Little Smoky Caribou Range is identified as the most disturbed caribou range in Canada, with 95% of the delineated range considered to be disturbed by anthropogenic development and fire (Environment Canada 2011). The population was demonstrating a steep decline in population size and survival until the initiation of an annual wolf population control program in winter 2005/2006. The population has since levelled to a generally stable population growth rate, although it has failed to demonstrate a positive growth rate. The adult female population number remains at less than 100 (ASRD and ACA 2010; Hervieux et al. 2013). Environment and Climate Change Canada (ECCC) has classified the Little Smoky woodland caribou population as “Not Self-Sustaining” (Environment Canada 2012).

2.1.2 Range Concerns

Caribou recovery in the Little Smoky Range depends on reducing predation rates so caribou populations can grow and then remain stable at increased population levels, as well as restoring and conserving sufficient suitable habitat to support self-sustaining populations (GOA 2016). Current habitat conditions in the Little Smoky Range will not support self-sustaining caribou populations. Achieving sufficient future habitat will take many decades.

Caribou habitat in Alberta will be managed through the reduction of forest harvesting, modifications to how oil and gas resources are managed, restoration of industrial features, protection from natural disturbances, and coordinating industrial development to reduce footprint. Restoration of legacy seismic lines is key and new footprints are to be minimized and mitigated. The goal is to achieve a level of habitat that will enable self-sustaining caribou populations without the need for direct actions to reduce predation (GOA 2016).

2.2 Project Effect on Caribou Habitat

The Project is located in the Little Smoky Caribou Range for approximately 43.9 km, and parallels existing disturbance primarily associated the NGTL GPML for approximately 98% of its length within that range. The right-of-way (ROW) width required to construct the Project is generally 42 m with expansions to 50 m

at selected watercourse crossings to allow for grading. The final construction footprint widths will be confirmed, restored, and fully offset following construction.

Total Project construction footprint area within the Little Smoky Caribou Range is 186.29 ha, of which ~~87.9~~64.34 ha overlaps existing permanent disturbance (e.g., rights-of-way, roads, wellsites), primarily the NGTL GPML. ~~Other overlapping disturbance includes cutlines, seismic lines, roads, cutblocks, and wellsites.~~ During operations, a width of up to 12 m over the centreline of the pipeline may be subject to periodic vegetation management.

The Project's total habitat disturbance is the spatial area of direct and indirect disturbance before implementation of habitat restoration (i.e., mitigation) measures. The Project's total disturbance to caribou habitat has been quantified using a method consistent with the Recovery Strategy for the Woodland Caribou (*Rangifer tarandus caribou*), Boreal Population, in Canada (Environment Canada 2011, 2012) and is described in detail in Section 2.0 of Annex A~~Annex A~~.

Based on the proposed Project layout and existing disturbance, the Project construction will result in:

- approximately ~~98.3~~121.95 ha of incremental direct disturbance; and
- approximately 0.~~5~~ 44 ha of incremental indirect disturbance.

After construction, a large portion of the footprint will be restored and operational access areas will remain (Table 2–1~~Table 2–1~~). These areas will be allowed to regenerate naturally.

Table 2–1: Quantification of the Remaining Direct and Indirect Project Disturbance of Caribou Habitat

Caribou Range	Direct Disturbance (Before Restoration)	Restored Footprint	Remaining Direct Disturbance (Operational Access Corridor)	Remaining Indirect Disturbance	Total Remaining Disturbance
Little Smoky	~~98.3~~121.95 ha	~~68.0~~106.78 ha	~~30.3~~15.17 ha	0.~~5~~ 44 ha	~~30.8~~15.61 ha

2.3 Approach to Restoration and Offsets

The areas identified above are carried forward into the consideration of onsite restoration and mitigation activities. NGTL will implement as much onsite restoration as possible to mitigate the overall Project habitat effects. The restoration approach is described in Section 3.0. After restoration activities have been included, the remaining Project effects will be offset with appropriate offset multipliers as described in Section 4.0.

With the successful implementation of restoration and offset measures, effects of the Project to caribou within the Little Smoky Caribou Range will be reduced. Restoration and offset measures progress and success will be monitored as described in Section 5.0.

3.0 RESTORATION PLAN

This section outlines the considerations and evaluation of caribou habitat restoration measures for the Project. It describes NGTL's plan to implement a decision framework to be used by NGTL to achieve the overarching objective of the Plan. This section presents NGTL's plan to reduce residual and cumulative effects of the Project on caribou and affected caribou habitat.

3.1 Goals and Targets

Habitat restoration measures will be implemented on the Project Footprint in caribou range to avoid or reduce the predicted residual effect of the Project on caribou and caribou habitat. Restoration of disturbed habitat assumes caribou will use the restored habitat for movement. As a result, spatial separation from primary prey (moose and deer) and from predators will return to pre-disturbance function and mortality risk will return to a level consistent with pre-disturbance conditions (Athabasca Landscape Team 2009).

Restoration of anthropogenic disturbances is expected to avoid or reduce the degradation of functional habitat for caribou since caribou will no longer exhibit reduced use on or near (i.e., in a zone of influence) the reclaimed disturbance (Oberg 2001). By addressing direct habitat disturbance through restoration measures, indirect disturbance will also be addressed.

3.2 Restoration Approach

Site-specific restoration measures will be selected under the guidance of Habitat Restoration Decision Frameworks (see Figures 3-1 and 3-2, Annex A~~Annex A~~). These may include tree planting, access management and natural regeneration (see Section 3.1 of Annex A~~Annex A~~). Selection of restoration measures will be based on suitability, specific site conditions and availability of appropriate materials. For more comprehensive details on the list of potential restoration measures and discussion of their applicability, effectiveness and limitations for the Project, see Table 3-1, Annex A~~Annex A~~.

The caribou Habitat Restoration Decision Frameworks (Figure 3-2, Annex A~~Annex A~~) will be applied to provide guidance on restoration measure selection based on site-specific characteristics. The decision frameworks are principle-based logic models that inform restoration decisions to achieve the objective and goals of the Plan. They are based on NGTL's pipeline construction and restoration experience, information obtained from literature reviews, industry best management practices, ongoing caribou habitat monitoring programs, and consultation with regulators, industry, and stakeholders. As part of NGTL's continuous improvement efforts, the decision frameworks are continually revisited and updated based on recent findings from restoration monitoring reports.

If engagement with Aboriginal groups and stakeholders has determined there are areas where ongoing access is required for traditional or trapper access, the decision frameworks will provide guidance. The decision frameworks will be applied at the start of construction to identify candidate sites for restoration measures on the Project Footprint, and reviewed during construction to identify any changes in inputs. Measures will be applied during cleanup on the Project Footprint.

3.3 Project Specific Mitigations

As described in Section 2.2, the construction ROW will vary between 40 m and 50 m and the total area disturbed will be approximately ~~98.3~~ 121.95 ha of incremental direct disturbance and approximately 0.44~~5~~ ha of~~n~~ incremental indirect disturbance. To reduce the effects of the Project, NGTL will consider the implementation of:

- access management across the ROW and corridor to eliminate physical and sensory disturbance and promote the establishment and development of vegetation communities. Access management will be completed through the installation of rollback or mounding features at key intersections points along the alignment, or at areas where evidence of access and travel have been observed. Alternative techniques may be implemented depending on the site-specific characteristics;
- habitat restoration/tree planting within areas outside of the 12 m wide operational ROW, which is centred over the trench line. Different treatments will be prescribed for upland and lowland areas to ensure optimal survival of planted species;
- natural regeneration will take place within the 12 m wide operational ROW. If required, habitat restoration/tree planting within the operational ROW may be considered with alternative planting techniques (i.e., habitat restoration seedling planting for line of sight, Annex F, DWG STDS-03-ML-05-316).
- snow ramping, extension of bore crossings, and shrub staking in riparian areas will also be considered, as described in Table 3-1, Annex A~~Annex A~~.

4.0 OFFSET PLAN

NGTL plans to minimize disturbance relating to construction of the Project where feasible. However, residual Project effects on caribou and caribou habitat are predicted. This offset strategy was prepared to ensure the residual effects are offset in a manner that aligns with provincial and federal policies, management plans and priorities.

4.1 Initial Offset Value

The initial offset value (IOV), or the total Project residual effect, is the area required to be offset after habitat restoration measures are implemented on the restored footprint, and include the area of remaining direct and indirect disturbance. Effectiveness values for each measure and delay factors associated with time lags are addressed by applying the appropriate multipliers (see Section 4.2 of Annex A~~Annex A~~). The IOV associated with the Project, considering the implementation of the restorations measures, was calculated to be 16.83~~4.7~~ ha (Table 4–1~~Table 4–1~~).

Table 4–1: Initial Offset Value Calculation

Restoration Unit Description			Incremental Project Disturbance (ha)	Inherent Effect	Delivery Risk Multiplier	Spatial Risk Multiplier	Temporal Risk Multiplier	Residual Effect (ha)
Habitat	**Restoration Measure**	**ROW Alignment**						
Incremental Direct Disturbance								
Upland	Seedling planting	Parallel	~~41.8~~67.83	0.2	1.25	1	1.2	4.52~~2.8~~
		New	0.00	1	1.25	1	1.2	0.00
Upland	Access management[1]	New/corridor level	~~1.3~~3.61	1	1.6	1	1	1.35~~0.5~~
Lowland	Seedling planting	Parallel	~~23.9~~33.89	0.2	1.25	1	2.8	~~3.4~~4.84
		New	1.45	1	1.25	1	2.8	~~0.7~~1.04
Operational access (12 m ditchline)	Natural regeneration	Parallel	~~29.4~~13.16	0.2	n/a	n/a	n/a	~~5.9~~2.63
		New	~~0.9~~2.01	1	n/a	n/a	n/a	~~0.9~~2.01
							Total RPRV (ha)	*~~14.2~~16.39*
Incremental Indirect Disturbance								
Upland	n/a	n/a	0.5~~4~~4	n/a	n/a	n/a	n/a	0.5~~4~~4
Lowland	n/a	n/a	0.00	n/a	n/a	n/a	n/a	0.0
							Total RIDV	*0.5~~4~~4*
							Initial Offset Value/Total Project Residual Effect (RPRV + RIDV) (ha)	**16.83~~4.7~~**

Notes:
[1] = access management will be a key component of the offset because of the parallel alignment with the GPML.
n/a = Not applicable.
Actual access management implementation will be much greater than the indicated value based on corridor-level implementation on existing Grande Prairie Main Line. This will be detailed in the Caribou Habitat and Offset Implementation Report and Monitoring Program (CHOIRMP).

IR Number: SCN 3.1

Category: Cumulative Effects Assessment

Topic: Cumulative Effects Assessment

Reference:

(i) Hegmann, G. et al (1999). Cumulative Effects Assessment Practitioner's Guide. Prepared for the Canadian Environmental Assessment Agency, February 1999. Hull, QC.

(ii) Nova Gas Transmission Ltd, 2021 NGTL System Expansion Project Application, June 2018, Section 3 Market and Supply and Section 4.4 Cumulative Effects Assessment - A6F4L4

(iii) Nova Gas Transmission Ltd, Environmental and Socio-economic Assessment, June 2018, Section 4 – Environmental and Socio-Economic Effects Assessment Methods- A6F4Q3

(iv) Nova Gas Transmission Ltd, Environmental and Socio-economic Assessment, June 2018, Section 7 – Vegetation- A6F4Q4

(v) Nova Gas Transmission Ltd, Environmental and Socio-economic Assessment, June 2018, Section 11 Wildlife and Wildlife Habitat - A6F4Q6

(vi) Nova Gas Transmission Ltd, Environmental and Socio-economic Assessment, June 2018, Section 19 – Traditional Land and Resource Use- A92619

(vii) Samson Cree Nation. 2019. SCN Interim TK Study - NGTL 2021 Expansion Project - A6T7V3

(viii) The Firelight Group Research Inc. 2019. Samson Cree Nation Revised CEA report (dated April 18, 2019) for the NGTL 2021 Expansion Project - A6U3K4

(ix) NGTL Information Request Response to NEB IR No. 3 - A6V2C9

Preamble: On April 18, 2019, SCN filed its report on *Cumulative Effects on the Aboriginal Rights and Interests of SCN* ("SCN CEA Report") with the National Energy Board. The SCN CEA Report (1) identifies key gaps and deficiencies with NGTL's cumulative effects assessment (**"NGTL's CEA"**), and (2) develops a preliminary alternative assessment of cumulative effects of the Project in combination with past, present and reasonably-foreseeable future developments on the SCN Inherent and Treaty No. 6 rights and

interests. SCN has requested, but has not yet received, comments on the SCN CEA Report from NGTL.

As the Board may know, SCN has identified to Canada that its rights are highly constrained and in a sensitive current state. As such, there is a need to assess the Project at the SCN Territory scale through a cumulative impacts lens. Also, the Project needs to be assessed in light of NGTL's April 3, 2019 project application for the proposed Edson Mainline Expansion Projects, as well as other existing TransCanada and NGTL projects within SCN Territory.

SCN is concerned that NGTL purports that they have "followed well established assessment methods (e.g., Hegmann et al.)" in the NGTL CEA Report because the evidence suggests otherwise.

It is in this context that SCN has further questions related to the NGTL CEA Report, in addition to those asked by the Board in IR 3.20 (reference ix).

Hegmann's *Cumulative Effects Assessment Practitioner's Guide* (1999) provided best practice guidance for cumulative effects assessment. In answering NEB IR 3.20, NGTL asserts that they followed Hegmann's *Cumulative Effects Assessment Practitioner's Guide* (1999). However, based on our review of NGTL's Project Application and ESA, SCN has identified information gaps (highlighted below) in the NGTL CEA Report as they relate to implementing Hegmann's best practice guidance.

During the NEB hearing process, these information gaps need to be addressed to SCN's satisfaction prior to the Board being in a position to make recommendations on cumulative effects. Currently, NGTL's purported finding of no significant cumulative effects at pp. 14-6 in its *2021 NGTL System Expansion Project Application, June 2018, Section 3 Market and Supply and Section 4.4 Cumulative Effects Assessment* is based on insufficient baseline data and does not take into account the SCN CEA Report.

Additionally, at Section 4.2 of the *Environmental And Socio-Economic Effects Assessment Methods* NGTL identifies the temporal setting for baseline conditions, as follows: "the baseline setting describes the environment as it currently exists (i.e., in 2018) prior to any potential changes that may occur" (p. 4-8). Section 4.4.2 identifies the temporal scope for cumulative effects assessment for the Project: "the temporal scope of the cumulative effects assessment includes the construction and operation of the Project, which is expected to operate for more than 25 years" (p. 4-33).

Hegmann's *Cumulative Effects Assessment Practitioner's Guide* (1999) explains that temporal boundaries for analysis of change over time requires an appropriate historical baseline and that Proponents should, "be prepared to adjust the boundaries during the assessment process" (p. 15). NGTL does not have appropriate historical baseline data specific to SCN members' ability to meaningfully exercise its Inherent and Treaty No. 6 rights and interests within SCN Territory.

Sections 7, 11 and 19 of NGTL's Environmental and Socio-economic Assessment, June 2018 suggests that the criteria for determining significance was weighted on the magnitude of the Project, and Ongoing & Reasonably Foreseeable Projects and not the magnitude of Past and Existing Projects. Also, that the magnitude for Past and Existing Projects is moderate to high. Hegmann's *Cumulative Effects Assessment Practitioner's Guide* (1999) provides guidance on the importance of past and existing disturbance in determining total effects loading.

Section 4 of NGTL's *Environmental and Socio-economic Assessment, June 2018*, assumes that the current level of disturbance in the Regional Study Area will remain the same for the life of the Project (p.4-44). This assertion has not been explained against the forecasting of >30% increase in LNG supply for NGTL in the next 11 years (see reference ii p. 3-9). Nor does it fit with a predicted future that includes increased forest fires associated with climate change in the region. Also, it does not explain how its Edson Mainline Expansion Projects fits into this equation. NGTL also emphasizes that reclamation in Alberta will also factor into this sustained level of disturbance but has not provided evidence beyond applications for reclamation certificates. Further evidence is required to substantiate the statement that: "As pressure increases for industries to step up reclamation activities, the amount of area being reclaimed may become equal to or greater than the area with new disturbance on an annual basis " (p.4-44). Also, NGTL needs to provide further quantitative evidence on how it is meeting Alberta targets.

Reference (iii), (iv), (v), and (vi) emphasize land cleared in determining cumulative effects versus consideration of other potential impacts or development of a zone of influence as advised on p.15 of reference (i). Hegmann's *Cumulative Effects Assessment Practitioner's Guide* (1999) also promotes the comparison of effects to thresholds as part of analysis (p. 2). Limited evidence is provided that thresholds were included in NGTL's cumulative effects assessment for VCs (e.g., minimum resources required to sustain Current Use Of Lands And Resources For Traditional Purposes).

Hegmann's *Cumulative Effects Assessment Practitioner's Guide* (1999) notes that, "the decision as to whether more data must be collected requires that the practitioners judge the adequacy of existing data in providing the basis for a sound and defensible assessment" (p.14). NGTL, and NGTL's *Environmental and Socio-economic Assessment, June 2018, Section 19 – Traditional Land and Resource Use* does not provide a cumulative effects assessment specific to Samson Cree Nation Current Use of Lands and Resources or impacts to Inherent and Treaty No. 6 rights and interests. This is an information gap. In Reference (ix) the Proponent notes that available TK was used at the time of writing – SCN was provided NGTL's comments on SCN's Interim TK Report dated April 18, 2019 on June 19. It is unclear what TK information NGTL used in reference (ix).

Request: In order to meet the expectations of Hegmann et. al. (1999) and other principles of good practice of cumulative effects assessment:

(a) Please revise the estimation of significance of cumulative effects to one based on total effects loading on VC's including past, present and anticipated future impacts and provide the revised significance estimations along with rationale for how context was considered.

(b) Please provide more information on a VC-by-VC basis on change over time in status (before 2018) to inform understanding of whether current baselines fit within a natural range of variation or have already been heavily impacted by anthropogenic change.

(c) Please provide further quantitative evidence of reclamation coverage in the RSA including total area of Projects in receipt of reclamation certificates since 2014, total area of projects that have submitted applications for reclamation certificates since 2014, percentage of land to be reclaimed versus area of existing and foreseeable future projects in the next 25 years.

(d) Please revise assessment in Section 19 (reference vi) and other relevant VCs to reflect not merely direct clearing of lands but also an appropriate zone of influence (ZOI) to be applied to the Baseline, Application, and Planned Development Cases, as they are more reflective of actual impact loading than measurement of physical clearing.

(e) Please identify any thresholds of acceptable change used in the cumulative effects assessment, especially specific to impacts to SCN for this Application and whether they were informed by traditional

knowledge. Where thresholds were not used, please identify how the developer was able to make reasonable predictions of the significance of cumulative effects arising from the proposed development in combination with other past, present and reasonably foreseeable future developments.

(f) Please provide a revised cumulative effects assessment on traditional land and resource use, and SCN rights, and incorporate results from SCN's Interim TUS (see reference vii) and Cumulative Effects Assessment (see reference viii) to this revised assessment and provide evidence of inclusion of SCN TLU and TEK data.

(g) Please provide written comments to SCN's April 18 CEA Report.

(h) Please provide a written explanation on how the findings in SCN's April 18 CEA Report will be incorporated into NGTL's Project Application.

(i) Please provide further evidence to substantiate the statement that "as pressure increases for industries to step up reclamation activities, the amount of area being reclaimed may become equal to or greater than the area with new disturbance on an annual basis".

(j) Please provide further quantitative evidence on reclamation activities in Alberta that factors into NGTL's purported sustained level of disturbance

Response:

Potential effects on Aboriginal and Treaty rights were considered in the ESA through the assessment of potential Project effects on current use of lands and resources for traditional purposes. NGTL reiterates that the cumulative effects assessment approach for the Project was based on requirements of the NEB Filing Manual and CEAA 2012 and followed well-established assessment methodology appropriate for the nature and scope of the Project. NGTL's approach is consistent with ESAs previously approved by the Board.[1] NGTL further notes Hegmann et al. (1999) acknowledges that: "there is not one single prescriptive method to conduct a CEA." [2]

[1] For example: 2017 NGTL System Expansion Project, TransMountain Expansion Project and the Northern Gateway Project.

[2] Hegmann et al. 1999. Cumulative Effects Assessment Practitioners' Guide. Prepared by the Cumulative Effects Assessment Working Group. Available at: https://www.ceaa-acee.gc.ca/default.asp?lang=En&n=43952694-1

a) and b)

NGTL disagrees with SCN's statement in the Preamble that "NGTL's purported finding of no significant cumulative effects…is based on insufficient baseline data." NGTL also disagrees that a revised estimation of significance is warranted.

The cumulative effects assessment examined potential effects on a VC by VC basis over time. The cumulative effects assessment included a consideration of the effects of past, present and reasonably foreseeable future projects, in accordance with the NEB Filing Manual and CEAA 2012.

As described in NGTL's response to NEB 3.20 (Attachment NEB 3.20 SCN CEA Gaps),[3] the description of existing baseline conditions for all VCs in the cumulative effects assessment reflects effects of past developments and activities. Further, NGTL notes that in establishing the temporal boundaries for the ESA, past actions of agriculture, timber harvesting, municipal development, roads, and industrial developments were determined to affect approximately 38% of the current landscape in the regional study area. Baseline conditions therefore included past and present activities. NGTL also notes that the Traditional Land and Resource Use (TLRU) assessment acknowledged that historical and current projects and activities have directly and indirectly affected TLRU (ESA Section 19.3).[4] Further, as per NGTL's response to SCN 7.1 a), NGTL notes that pre-development conditions may be completely unrelated to the Project and go beyond the scope of an assessment required by the NEB Filing Manual and CEAA 2012.

The cumulative effects assessment acknowledged that the specific effects of past and existing disturbances in the RSA on VCs are unknown. The assessment conservatively assumed that past and existing disturbances represent a moderate to high change from an undisturbed landscape (e.g., ESA Section 19.6.1). Significance was not assigned to this change in magnitude given the activities that have resulted in the existing disturbance are in alignment with provincial management plan goals and objectives. Further, the existing landscape is not homogenous and continues to support multiple land uses and habitats and resources.

The magnitude of the cumulative effects including past activities is not expected to change in combination with the predicted Project effects and those of reasonably foreseeable projects and activities, given the low incremental change to the landscape. For example, the Project's contribution to cumulative effects on TLRU was assessed as having a low magnitude because Project design measures will avoid or reduce potential adverse effects due to a temporary alteration of land and since planned mitigation for traditional use areas, activities, resources and sites are considered to be effective to avoid or reduce Project effects. Further, the cumulative effects assessment

[3] NEB Filing ID: A99941-1.
[4] NEB Filing ID: A92619-15.

conservatively assumed that future activities will be 100% located within areas of native vegetation and for most indicators overlapping suitable habitat. These are conservative estimates, since some of the ongoing activities will be located within existing ROW or other disturbed areas and not within native vegetation or suitable habitat for traditionally hunted species.

NGTL's review and consideration of SCN's Traditional Knowledge, CEA Report and Interim TUS is addressed in part f) below.

c) Refer to the responses to i) and j).

d) NGTL disagrees that the assessment of TLRU and relevant VCs was based only on potential effects from direct clearing of lands. For example, the assessment of potential Project effects on terrestrial VCs relevant to TLRU (e.g., wildlife and wildlife habitat [Section 11.0][5] and Species at Risk [Section 12.0[6]]), as well as fish and fish habitat (Section 9.0)[7] considered both direct and indirect effects. As described in NGTL's response to HLFN 1.3 i)[8] (Attachment HLFN 1.3-1: Wildlife Habitat Suitability Index [HSI] Model Descriptions), a zone of influence (ZOI) was applied to HSI models where evidence was available regarding reaction distances and habitat effectiveness to industrial disturbances by the modelled species. As a result, a ZOI was quantitatively incorporated for species sensitive to distant disturbances based on scientific literature. Where direct residual effects (i.e., alteration of suitable habitat) and/or indirect effects (e.g., habitat effectiveness) were predicted to occur, these were carried forward to the cumulative effects assessment. Also, the assessment of Project effects to fish and fish habitat (ESA Section 9.0)[9] was based on a local study area which encompassed a potential zone of influence as described in Alberta's Guide to the Code of Practice for Pipelines and Telecommunication Lines Crossing a Water Body (AENV 2001), with predicted residual effects carried forward to the cumulative effects assessment. The outcomes of the wildlife and wildlife habitat and fish and fish habitat assessments were considered in the cumulative effects assessment of relevant TLRU key indicators (i.e., traditional hunting, trapping and fishing). Further, the TLRU assessment used a variety of information sources and indicators, including Traditional Knowledge (TK) and information provided directly by potentially affected Aboriginal communities. NGTL's review of SCN's CEA Report and Interim TUS is addressed in part f) below.

e) NGTL disagrees with SCN's statement in the Preamble that "limited evidence is provided that thresholds were included in NGTL's cumulative effects assessment for VCs".

[5] NEB Filing ID: A92619-13.
[6] NEB Filing ID: A92619-14.
[7] NEB Filing ID: A92619-12.
[8] NEB Filing ID: A98233-9.
[9] NEB Filing ID: A92619-12.

Provincially or federally established thresholds, where established, were applied in the cumulative effects assessment (e.g., the assessment of woodland caribou in the Little Smoky Caribou Range where there is an established federal threshold for undisturbed habitat [65%]). Where established management thresholds did not exist for a particular VC, this was stated in the cumulative effects assessment. For example, Section 7.6.1[10] presents the cumulative effects assessment for loss or alteration of vegetation cover types and the assessment acknowledged that no specific management threshold has been established within the RSA. The assessment conservatively assumed past and existing disturbances represent a moderate to high magnitude change from an undisturbed landscape.

Further, each VC section (including those VCS relevant to TLRU) discussed the applicable regulatory framework and identified relevant provincial or federal regulations, acts, policies, and management plans. Land use plans and watershed management plans that overlap the RSA are presented in ESA Section 4.3[11] (Tables 4.3-8 and 4.3-9). The determination of significance for each VC was informed by the relevant regional and municipal development plans and regulatory guidelines, including those for traditionally used resources (e.g., wildlife, fish). The determination of significance also assumed existing and ongoing activities and reasonably foreseeable projects in the RSA will adhere to regulatory requirements.

As stated in the ESA Section 4.4.6,[12] following guidance from CEAA 2012 and the NEB Filing Manual, the significance of cumulative effects was predicted using the criteria of magnitude, geographic extent and duration. The likelihood was considered in conjunction with the confidence rating when predicting significance for cumulative effects. The assessment of cumulative effects generally followed the approach used for the Project effects assessment and determination of significance outlined in Section 4.3.[13] The magnitude definitions for environmental VCs (Section 4.3, Table 4.3-1) address the degree of the change within the environment in relation to baseline values and/or regulatory guidelines and management challenges. Using this approach for wildlife species for example, for the RSA, magnitude was determined using professional judgement based on species tolerances, development plans and Project contributions. NGTL also notes that TK information gathered during NGTL's Aboriginal Engagement Program (e.g., TK studies and concerns and recommendations) (inclusive to May 17, 2018) was incorporated into the baseline and assessment of relevant biophysical VCs (e.g., wildlife, fisheries, vegetation and wetlands), given the close connection to TLRU resources (i.e., traditional species harvested, and other resources required for TLRU activities).

[10] NEB Filing ID: A92610-11.
[11] NEB Filing ID: A92619-10.
[12] NEB Filing ID: A92619-10.
[13] NEB Filing ID: A92619-10.

f) NGTL respectfully disagrees that an assessment of the Project at the SCN territory scale for cumulative effects is required. Potential effects on Aboriginal and Treaty rights were considered in the ESA through the assessment of potential Project effects on current use of lands and resources for traditional purposes. The Project's assessment methodology complies with the requirements of Section 52, NEB Filing Manual guidance, including Table A-3: Filing Requirements for Socio-Economic Elements, and followed standard assessment methods appropriate for the scope and nature of the Project.

NGTL notes that all information available at the time of writing was considered in the TLRU assessment (ESA Section 19.0),[14] including Traditional Knowledge (TK) and information provided directly by potentially affected Aboriginal communities. As stated in Section 19.1.2 of the ESA,[15] the TLRU assessment assumed that TLRU harvesting sites, areas, and activities have the potential to occur and that traditionally used species identified as being present within the Project RSA could be hunted, trapped, fished, or gathered by Aboriginal groups, even if Aboriginal groups did not identify specific activities, species, or sites. The assessment used a conservative approach that recognizes that a lack of TLRU information does not necessarily represent a lack of current use for that location or activity. Mitigation measures provided in the ESA and described in the EPP are intended to avoid or reduce the potential effects on TLRU activities for the entire length of the Project. Mitigation was developed in consideration of available TK. TK information provided since the filing of the ESA confirmed the assumptions in the ESA of general use of the Project area for hunting, fishing, trapping, plant harvesting, and habitation, spiritual or cultural sites. NGTL will consider information gathered during ongoing TK studies and engagement in Project planning, including the EPP and Environmental Alignment Sheets (EAS) filed prior to construction.

NGTL has been sharing information with SCN with respect to the Grande Prairie Mainline Loops No.2 (Colt Section) component of the Project since August 21, 2017. The results of the TK literature review, which included TK information and relevant source data, were shared with SCN and they were invited to review and provide NGTL with feedback. NGTL did not receive any response to that invitation. On April 25, 2018, NGTL informed SCN that the information would be considered in the TK report and in the Project's ESA. The results of the literature review for SCN were included in the ESA TK Report (ESA Appendix K, Section 1.6.31).[16] TK information from this report has been integrated into the overall ESA and was considered in the identification and assessment of key indicators for traditional land and resource use (ESA Section 19.0), including habitation, spiritual or cultural sites.

[14] NEB Filing ID: A92619-15.
[15] NEB Filing ID: A92619-15.
[16] NEB Filing ID: A92619-19.

NGTL has reviewed the information presented in SCN's Interim TUS Report[17] and CEA Report (April 18, 2019)[18] in the context of the ESA and for consideration in Project planning, as appropriate. The information provided confirmed the assumptions in the ESA of general use of the Project area for hunting, fishing, trapping, plant harvesting, and habitation, spiritual or cultural sites and did not identify traditional use sites or features requiring site-specific mitigation additional to the existing measures in the EPP.[19] The significance conclusions of the ESA remain unchanged for the Project residual effects and cumulative effects on TLRU.

Further, issues and concerns identified in SCN's reports (i.e., Interim TUS and CEA), along with NGTL's responses and proposed applicable mitigation measures from the EPP[20] were summarized in the Samson Cree Nation Project-Related Issues Summary, which was included in NGTL's Reply Evidence (Appendix 2-2,[21] PDF pages 105-109). Upon receipt, the findings of SCN's final TK study will be also reviewed in the context of the ESA and for consideration in Project planning. Consideration of this information includes evaluating whether NGTL's planned mitigation would effectively avoid the identified potential interactions, or whether additional or refined mitigation is warranted.

Regarding the last paragraph of the Preamble (page 4) NGTL clarifies that the phrase "available TK was used at that the time of writing" was in reference to writing of the ESA filed in June 2018.[22]

g) and h)

NGTL provided written reply comments to SCN's April 18 CEA Report in NGTL's responses to NEB 3.20 and 3.21,[23] as well as in Section 3.2 of NGTL's Reply Evidence.[24] Issues and concerns identified in SCN's CEA Report and Interim TUS Report, along with NGTL's responses and proposed applicable mitigation measures from the EPP[25] were included in NGTL's Reply Evidence.[26] Refer also to part f).

[17] NEB Filing ID: A98979-3.
[18] NEB Filing ID: A98979-2.
[19] NEB Filing ID: A94156-3.
[20] NEB Filing ID: A94156-3.
[21] NEB Filing ID: C00043-1.
[22] NEB Filing ID: A92619-10 to A92619-19.
[23] NEB Filing ID: A99941-1.
[24] NEB Filing ID: C00043-1.
[25] NEB Filing ID: A94156-3.
[26] NEB Filing ID: C00043-1, Appendix 2-2, PDF pages 105-109.

i) and j)

For the cumulative effects assessment, it was assumed that the current level of disturbance within the Socio-economic Study Area (SESA) will be consistent for the life of the Project. This assumption was based on the dominant land use within the RSA, which is forestry, and within the SESA, which is a combination of agriculture and forestry (ESA Section 4.4).[27] With the current system of forest management in the Province, forestry related disturbance is dominant on the landscape but as a renewable resource, where ever the disturbance takes place, it is followed by planting and regeneration on a regular sustainable basis. Further, as certain oil and gas facilities that are part of the industrial land base are reclaimed, these reclamation practices are to restore land productivity for forestry, if the site is located within a managed forest. A mosaic of land cover and habitats will be maintained within the RSA and SESA.

Further discussion was provided in the ESA on activities (i.e., forestry, oil and gas) that have regulated reclamation requirements. The total number of reclamation certificate applications for each year since 2014 were shown in Table 4.4-5. Applications show a general increase over time, based on available data. While the area of reclamation for oil and gas activities on an annual basis is unknown within the RSA, the regulatory requirement is clear: oil and gas facilities are required to meet the Alberta 2010 Reclamation Criteria for Wellsites and Facilities on cultivated and forested land (GOA 2011) (ESA, Section 7.6).[28] As identified in the ESA, the reasonably foreseeable projects are oil and gas projects, and therefore will be required to adhere to the relevant regulatory reclamation requirements (GOA 2011). Qualitatively, it was assumed that pressure on industry and regulators from society and environmental organizations would continue, resulting in on-going and, perhaps increasing, reclamation within the oil and gas industry. For example, in 2017, the Orphan Well Association (OWA) received federal and provincial funding, along with a tripling of direct industry funding since 2014, which will allow the OWA to tackle reclamation of orphan wells at an accelerated rate in the near future.[29]

Regarding the third paragraph on page 3 of the Preamble (Reference ii), NGTL clarifies that the Regional Study Area (RSA) for the Project ESA cumulative effects analysis is a 20 km band centred over the Project and reconfirms the cumulative effects analysis of the current level of disturbance in the RSA is correct. NGTL expects a decline in conventional gas production over time and growing supply sources from unconventional and tight plays in the northwest portion of the Western Canada Sedimentary Basin (WCSB), only a portion of which overlaps with the Project RSA.[30]

[27] NEB Filing ID: A92619-10.
[28] NEB Filing ID: A92619-12.
[29] Alberta Oil and Gas Orphan Abandonment and Reclamation Association. 2017 Orphan Well Association Annual Report. Page. 2.
[30] NEB Filing ID: A92619-1, Sections 3.2 and 3.3.

Further, NGTL clarifies that demand on the NGTL System (e.g., SCN referenced LNG), is a natural gas delivery use of the product, not supply.[31]

Further to the third paragraph on page 3 of the Preamble regarding the Edson Mainline Expansion Project, as stated in the 2021 NGTL System Expansion Project ESA Section 4.4.3, Projects that have not been publicly disclosed, and for which information is not available, were not included in the cumulative effects assessment. The Project Description for the Edson Mainline Expansion Project was not filed until January 2019 and the ESA for the 2021 NGTL System Expansion Project was filed in June 2018. Regarding the example of non-human events such as increased forest fires and as described in NGTL's response to SCN 4.4 b),[32] NGTL has not evaluated changes to the environment in respect to climate change that might be predicted from published climate models and believes that this would be a purely hypothetical exercise. Climate change modelling is still subject to a large degree of uncertainty and focuses on broader ecosystem and global effects rather than a small region of Western Canada. Further, most climate change models discuss climate change over much longer periods than the life of the Project. NGTL further notes that, in order to be able to include forest fires in the cumulative effects assessment, a simulated forest fire scenario would need to be developed by climate change modelers that could realistically be applied at a regional level. This would introduce a large amount of uncertainty into the analysis given the forest fire regime is determined by a combination of several variables (fire intensity, frequency, seasonality, size, type and severity) and is highly dependent on climate and weather.

References:

Alberta Environment (AENV). 2001. Guide to the Code of Practice for Pipelines and Telecommunication Lines Crossing a Water Body, Including Guidelines for Complying with the Code of Practice. Edmonton, AB.

Government of Alberta. 2011. 2010 Reclamation Criteria for Wellsites and Associated Faculties Application Guidelines. Alberta Environment, Edmonton, AB, 52 pp. Accessed online at: https://open.alberta.ca/dataset/7e64256c-42e2-4eb6-bed1-91a4e558b3e2/resource/cbbe4a4c-dc0e-4d4e-9bfb-c613618db61d/download/2011-2010-reclamation-criteria-wellsites-application-guidelines-2011-05.pdf

Hegmann et al. 1999. Cumulative Effects Assessment Practitioners' Guide. Prepared by the Cumulative Effects Assessment Working Group. Available at: https://www.ceaa-acee.gc.ca/default.asp?lang=En&n=43952694-1. Page 1. Accessed July 2019.

[31] NEB Filing ID: A92619-1.
[32] NEB Filing ID: A98233-13.

IR Number: SCN 3.2

Category: Environmental Effects on Aboriginal People (CEAA S.5(1)(C)

Topic: Indigenous Monitoring

Reference:
(i) Nova Gas Transmission Ltd, Response to Samson Cree Nation Information Request 1 - A6S5R6

(ii) 2021 NGTL System Expansion - Reply Evidence - A6V3X8.

Preamble: SCN knowledge holders have valuable information about the land that could aid in post-construction monitoring. In responding to SCN Information Requests for on-the-ground participation in monitoring NGTL instead refers to engagement or notification measures without discussing actual monitoring opportunities. In this regard, for example, NGTL makes sophistry statements such as "NGTL will remain available to discuss and, where possibly, address any concerns Samson Cree Nation may have during operation and maintenance of the Project" (please see page 35 of reference i).

Reference (ii) notes that an Indigenous Monitoring Committee would be too onerous for this Project (p. 2-7) but does not discuss other opportunities for Indigenous involvement in post-construction monitoring.

Request:
(a) Please explain how an Indigenous Monitoring Committee would be too onerous for this Project.

(b) Please list and describe existing post-construction monitoring initiatives that TransCanada and NGTL currently have in place for existing projects within SCN Territory that include SCN.

(c) Please describe opportunities for Indigenous participation in on-the-ground post-construction monitoring activities including but not limited to Culture and Heritage Resources, Culturally important plants, water quantity and quality, Caribou habitat restoration, and other environmental monitoring along with potential timelines and funding opportunities.

(d) As contamination perceived or otherwise may alienate SCN land users, please describe any culturally appropriate programs or Indigenous monitoring programs designed to enhance SCN confidence in berries, medicines and other harvest resources along or in the vicinity of the ROW.

Response:

a) NGTL continues to rely on comments provided in its Reply Evidence[1] regarding the IAMC, and maintains that an IAMC is not warranted for the Project.

b) and c)

For all NGTL projects operating within SCN's traditional territory, SCN has an opportunity to provide feedback post-construction through ongoing engagement with Regional Liaisons and TC Energy's Public Awareness (PA) Program. As stated in the response to BT 1.39,[2] NGTL's understanding of Aboriginal involvement in Post-Construction Monitoring (PCM) activities is that it should be fit-for-purpose, focused on addressing outstanding issues and be specific to the phase of the project most appropriate for addressing the issue. An example of how this was applied for the Grande Prairie Mainline Loop No. 2 (McLeod River Section) of the 2017 NGTL System Expansion Project included providing SCN notice and a link to the PCM Report filed with the NEB for Condition 36 on that project with the offer to answer any questions SCN may have. NGTL did not receive any questions or concerns regarding the Report from SCN. NGTL is committed to continue to respond to any SCN concerns post-construction for existing projects within SCN territory and address potential issues on a case-by-case basis.

NGTL requires additional information from SCN to understand the interest in and specific issues to be addressed by involvement in PCM activities, including on-the-ground participation, before it can determine Aboriginal involvement opportunities to best address post-construction specific issues, if any.

d) TC Energy's existing PA Program is intended to increase awareness of pipeline safety and can involve information sharing sessions with engagement activities tailored to the respective audience. The PA Program will remain in place for the lifecycle of the asset. Section 10.1.6 of the Application for the Project provides an overview of the PA Program.[3] Feedback received by NGTL from participants in previous Aboriginal Construction Participation Programs (ACPP) is that it provided opportunities for individuals from participating Aboriginal groups to grow their skills and understanding of NGTL's construction activities and environmental protection measures, thereby enhancing their confidence, which they in turn could share with the rest of the community.

In addition, as part of ongoing engagement with SCN for the Project, NGTL is willing to work with SCN to arrange a community meeting for specific information sharing, as determined through discussion with SCN, regarding the Project and TransCanada

[1] NEB Filing ID: AC00043-1.
[2] NEB Filing ID: A98233-3, PDF page 124.
[3] NEB Filing ID: A92619-1, PDF pages 159-160.

PipeLines Limited (TCPL) operated pipelines to facilitate an enhanced confidence by SCN members.

IR Number: SCN 3.3

Category: Environmental Effects on Aborginal People (CEAA S.5(1)(C)

Topic: Consideration of SCN Indigenous Traditional Knowledge

Reference:

(i) Nova Gas Transmission Ltd, Response to Samson Cree Nation Information Request 1 - A6S5R6

(ii) Samson Cree Nation. 2019. SCN Interim TK Study - NGTL 2021 Expansion Project - A6T7V3

(iii) The Firelight Group Research Inc. 2019. Samson Cree Nation Revised CEA report (dated April 18, 2019) for the NGTL 2021 Expansion Project - A6U3K4

Preamble: The Proponent's Response to SCN 5 (a) notes that, "Upon receipt, the findings of SCN's TK study will be reviewed in the context of the ESA and considered in Project planning, as appropriate. NGTL will continue to address questions and concerns identified to NGTL by SCN through its ongoing engagement efforts, should any arise" (PDF p. 46)

Preliminary review of existing SCN knowledge and use data in the vicinity of Nova Gas Transmission Ltd.'s 2021 NGTL System Expansion Project in reference (ii) suggests potentially highly significant impacts to SCN's established, Inherent and Treaty Rights therefore development of mitigation measures and accommodations are likely required.

As mentioned above, SCN received NGTL's comments on June 19. In Samson Cree's view, these comments do not address all of SCN's concerns and information gaps and residual effects have been identified.

Request:

(a) Please describe how the Interim TUS submitted by Samson Cree Nation has informed and or modified the ESA, Project Design, and mitigation planning, and providing a blackline of the related NGTL Project Application documents reflecting the same.

(b) Please describe how Samson Cree Nation's forthcoming final TUS will be considered and incorporated into assessment and mitigation planning including how any changes will be reported to the Board.

(c) SCN is also concerned about the consideration of SCN TK in relation to the loss of grizzly habitat on Crown Lands. As noted in reference (iii), these Crown Land areas will be disproportionately important for the practice of SCN inherent and treaty rights given the loss of access to many portions of SCN territory. Please describe in detail how

anticipated impacts to SCN Stewardship and practice of inherent and treaty rights associated with grizzly bear, specifically in potential grizzly habitat on Project areas affecting Crown land, have been addressed, mitigated or compensated since receipt of the Interim TUS (reference (ii)) and or plans for working with SCN going forward to identify appropriate mitigation informed by TK.

(d) Please describe how SCN will be accommodated for identified residual impacts to its Inherent and Treaty No. 6 rights and interests.

Response:

(a) and (b)

As described in NGTL's response to NEB 3.20,[1] all information available at the time of writing the ESA was considered in the Traditional Land and Resource Use (TLRU) assessment (ESA Section 19.0),[2] including Traditional Knowledge (TK) and information provided directly by potentially affected Aboriginal communities. As stated in Section 19.1.2 of the ESA,[3] the TLRU assessment assumed that TLRU harvesting sites, areas, and activities have the potential to occur and that traditionally used species identified as being present within the Project regional study area (RSA) could be hunted, trapped, fished, or gathered by Aboriginal groups, even if Aboriginal groups did not identify specific activities, species, or sites. The assessment used a conservative approach that recognizes that a lack of TLRU information does not necessarily represent a lack of current use for that location or activity.

NGTL has been sharing information with SCN with respect to the Grande Prairie Mainline Loop No. 2 (Colt Section) component of the Project since August 21, 2017. The results of the TK literature review, which included TK information and relevant source data, were shared with SCN and they were invited to review and provide NGTL with feedback. NGTL did not receive any response to that invitation. On April 25, 2018, NGTL informed SCN that the information would be considered in the TK report and in the Project's ESA. The results of the literature review for SCN were included in the ESA TK Report (ESA Appendix K, Section 1.6.31).[4] TK information from this report was integrated into the overall ESA and was considered in the identification and assessment of key indicators for traditional land and resource use (ESA Section 19.0), including habitation, spiritual or cultural sites.

[1] NEB Filing ID: A99941-1.
[2] NEB Filing ID: A92619-15.
[3] NEB Filing ID: A92619-15.
[4] NEB Filing ID: A92619-19.

NGTL has reviewed the information presented in SCN's Interim TK Report[5] in the context of the ESA and for consideration in Project planning, as appropriate. The information provided confirmed the assumptions in the ESA of general use of the Project area for hunting, fishing, trapping, plant harvesting, and habitation, spiritual or cultural sites and did not identify traditional use sites or features requiring site-specific mitigation additional to the existing measures in the EPP.[6] Issues and concerns identified in SCN's report, along with NGTL's responses and proposed applicable mitigation measures from the Environmental Protection Plan (EPP)[7] were summarized in a Samson Cree Nation Project-Related Issues Summary, which was included in NGTL's Reply Evidence.[8]

Upon receipt, the findings of SCN's final TK study will also be reviewed in the context of the ESA and for consideration in Project planning including the EPP and Environmental Alignment Sheets (EAS) filed prior to construction. Consideration of this information includes evaluating whether NGTL's planned mitigation would effectively avoid the identified potential interactions, or whether additional or refined mitigation is warranted.

(c) Refer to the response to a) regarding NGTL's engagement efforts with SCN to date. NGTL has reviewed the information presented in SCN's Interim TK Report[9] and the study does not provide additional information regarding grizzly bear or grizzly bear habitat in the Project study areas or TLRU related to grizzly bear, to that which was considered in the ESA.

Project effects on grizzly bear were assessed along with other Species at Risk in ESA Section 12.0,[10] including potential changes to suitable habitat, habitat effectiveness, movement patterns and mortality risk (Section 12.3). Residual Project effects were presented in Table 12.5-1 and were predicted to be short- to medium-term, limited to the Project Footprint or Local Study Area (LSA) and for effects to habitat, reversible. With the implementation of mitigation measures no residual effects were predicted for movement patterns. Based on the criteria set out in the ESA (Section 4.3.3), Project effects were predicted to be not significant (Section 12.5.10).[11] Project effects on grizzly bear were considered in the assessment of TLRU (traditional hunting key indicator) (ESA Section 19.0).[12] Project effects on traditional hunting were predicted to be short- to medium-term and reversible. Based on the criteria set out in the ESA (Section 4.3.3), effects were predicted to be not significant.

[5] NEB Filing ID: A98979-3.
[6] NEB Filing ID: A94156-3.
[7] NEB Filing ID: A94156-3.
[8] NEB Filing ID: C00043-1, Appendix 2-2, PDF pages 105-109.
[9] NEB Filing ID: A98979-3.
[10] NEB Filing ID: A92619-14.
[11] NEB Filing ID: A92619-14.
[12] NEB Filing ID: A92619-15.

Mitigation measures to avoid or reduce Project effects to grizzly bear were provided in ESA Section 12.4, Table 12.4-1 and are detailed in the Project EPP.[13] Mitigation measures to avoid or reduce Project effects to traditional hunting were provided in ESA Section 19.4, Table 19.4-1[14] and are also detailed in the Project EPP.

(d) Potential effects on Aboriginal and Treaty rights were considered in the ESA through the assessment of potential Project effects on current use of lands and resources for traditional purposes. With the implementation of mitigation, residual effects to TLRU were determined to be short- to medium-term in duration and limited to the Project Footprint or the LSA and reversible. Based on the criteria set out in the ESA Section 4.3.3, Project effects on TLRU were predicted to be not significant. As a result, NGTL is not proposing additional mitigation.

[13] NEB Filing ID: A94156-3.
[14] NEB Filing ID: A92619-15.

IR Number: SCN 3.4

Category: Wildlife

Topic: Bison

Reference:

(i) Nova Gas Transmission Ltd, Response to Samson Cree Nation Information Request 1 - A6S5R6

(ii) Technical Guidance for assessing the Current Use of Lands and Resources for Traditional Purposes under the Canadian Environmental Assessment Act, 2012. December 2015

(iii) Buffalo Treaty: A Treaty for Cooperation, Renewal, and Restoration.2014. Available at: https://programs.wcs.org/Portals/175/Documents/The%20Buffalo%20Treaty_2 014.pdf?ver=2016-01-29-184835-080

(iv) The Firelight Group Research Inc. 2019. Samson Cree Nation Revised CEA report (dated April 18, 2019) for the NGTL 2021 Expansion Project - A6U3K4

Preamble: In the Proponent's Response to SCN IR 3.0 (reference i) it is noted that only species that could occur within the Project regional study area were eligible for detailed assessment. Reference (ii) notes that in assessing Current Use of Lands and Resources for Traditional Purposes current use includes, "uses that are likely to occur in a reasonably foreseeable future provided that they have continuity with traditional practices, traditions or customs" (p. 4). Best Practice dictates that species no longer present on the landscape should also be assessed if indigenous use is likely to return should conditions change. It is anticipated based on the Bison Treaty and successful introductions in National Parks, that bison will be re-established in the Eastern Slopes and that the Crown lands will be important for SCN members for bison restoration and stewardship as referenced in the SCN CEA report (reference v).

Request:

(a) Please describe how potential impacts to SCN stewardship of Bison have been considered since receipt of reference (iv).

(b) Please describe opportunities for Bison bison habitat suitability mapping with SCN or alternatively any precautionary measures planned to ensure no net loss of Crown land supportive of Bison restoration initiatives potentially including but not limited to habitat compensation and offset measures.

Response:

(a) and (b)

NGTL recognizes the Buffalo Treaty referred to in Reference iii), and the significance of Bison to SCN as described in Reference iv. However, documentation including the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) Assessment and Status Report on the Plains Bison *Bison bison bison* and the Wood Bison *Bison bison athabascae* in Canada (COSEWIC 2013) and the Status of the American bison (*Bison bison*) in Alberta: Update 2017 (AEP and ACA 2017) does not discuss the re-introduction of Bison into the Project area in the reasonably foreseeable future, or at all. Prospects for recovery of Plains Bison is limited by habitat availability. Potential impacts of human land-use (energy development, forestry, and agriculture) on wood and plains bison will require on-going mitigation and management (AEP and ACA 2017). Future prospects for restoration and recovery of free-ranging plains bison on their original range in Central Alberta and is limited by the amount of available, intact grassland habitats (AEP and ACA 2017).

As stated in NGTL's response to SCN 3.0 a),[1] only species that could occur within the Project Regional Study Area (RSA) (range appropriate) based on current habitat mapping information were eligible for detailed assessment in the ESA. However, NGTL also notes that after construction is complete the Project would not present an impediment to the reintroduction of Bison into the area.

References:

Alberta Environment and Parks and Alberta Conservation Association. 2017. Status of the American bison (*Bison bison*) in Alberta: Update 2017. Alberta Wildlife Status Report No. 38. Edmonton, AB. 134 pp.

COSEWIC. 2013. COSEWIC assessment and status report on the Plains Bison *Bison bison bison* and the Wood Bison *Bison bison athabascae* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xv + 109 pp. https://www.sararegistry.gc.ca/virtual_sara/files/cosewic/sr_Plains%20Bison%20and%20Wood%20Bison_2013_e.pdf

[1] NEB Filing ID: A98233-13.

IR Number: SCN 3.5

Category: Wildlife

Topic: Woodland (Boreal) Caribou Impacts Within the Little Smoky Range

Reference:
(i) Nova Gas Transmission Ltd, Response to Samson Cree Nation Information Request 1 - A6S5R6

(ii) Government of Alberta 2016. DRAFT Little Smoky and A La Peche Caribou Range Plan. June 2, 2016. URL: http://aep.alberta.ca/fish-wildlife/wildlifemanagement/ caribou- rangeplanning/documents/Little SmokeyAlaPecheRangePlan- Draft-Jun2-2016.pdf (iii) Lesmerises, R., J. Ouellet, C. Dussault, & M.H. St-Laurent. 2013. The influence of landscape matrix on isolated patch use by wide-ranging animals: conservation lessons for woodland caribou. Ecology and Evolution 3:2880-2891.

Preamble: Accurately calculating potential impacts to critical caribou habitat is imperative for developing adequate offsetting plans. SCN made three information requests related to the amount of critical caribou habitat that will be impacted by the proposed project (see PDF p. 23 of reference i):

1. In responding to SCN Information Requests for an estimate of "existing disturbance area" with sufficient tree or shrub regeneration to benefit caribou (i.e., regeneration at greater than 0.5 m in height), the Proponent declined to conduct this assessment. While the Proponent acknowledges the benefits conferred to caribou in terms of reduced predator movement caused by regenerating vegetation, they conclude that this analysis would not be considered beneficial from their perspective.
2. The Proponent has not responded to SCN's request for the total footprint area falling outside of the Little Smoky range but within Zone 2.
3. The Proponent has not provided adequate rationale for the low offsetting area (14.7 ha) associated with the project footprint area in the Little Smoky range. At a minimum, any portion of the footprint that will be maintained in an early seral condition should be considered for the maximum offsetting ratio (i.e., a minimum of 52.68 ha). In accounting for overlap with existing disturbances (when applying a 500 m buffer around all disturbances within the Range), for example, the Proponent fails to account for the loss of previously disturbed habitat that already has regenerated or would regenerate to a sufficient level to benefit caribou within the lifetime of the project.

Given the current state of caribou habitat (95% disturbed) and the targets within the DRAFT Government of Alberta range plan for the Little Smoky

range (reference ii), SCN requested that the Proponent use and provide a more robust framework for calculating the offsetting requirement. SCN provided examples of minimum offsetting ratios that would be appropriate for various types of project footprint. In responding to this request, the Proponent provided justification for the use of multipliers over fixed ratios, but did not apply a more precautionary approach to these calculations. SCN does not oppose the use of multipliers, but maintains that a more precautionary approach should be taken when determining the values for these offsetting calculations.

The selection of appropriate restoration areas is critical to the effectiveness of offsetting measures for caribou habitat. In response to SCN's request for clarification regarding selection of the existing active pipeline (GPML) for restoration, the Proponent has provided additional rationale based on logistical considerations associated with implementing restoration treatments. While SCN acknowledges that the logistics associated with implementing restoration treatments are important to the feasibility of offsetting, the Proponent has not provided adequate rationale based on an evaluation of caribou habitat disturbance or caribou habitat use within the Little Smoky range. Furthermore, the Proponent has not provided a response to SCN's request for a list of other areas that could be put forward for restoration, which would result in an improvement in overall habitat condition within an area that is currently highly used by boreal caribou.

SCN requested an evaluation of the potential application of Horizontal Directional Drilling (HDD) for reducing caribou habitat fragmentation in key areas. As part of this evaluation SCN requested: a map showing areas adjacent to the proposed pipeline route that currently have intact habitat or regeneration that is greater than 0.5 m in height and of sufficient density to be limiting line of sight and/or predator access; and a plan to include HDD in key areas for pipeline construction to reduce fragmentation of sensitive caribou habitat. In responding to the request, the Proponent described limitations and challenges associated with HDD, but did not provide an assessment of where this mitigation measure could be applied to mitigate caribou habitat fragmentation. Given the current state of caribou habitat in Little Smoky range (95% disturbed), any mitigation measure that can prevent further degradation and fragmentation should be given adequate consideration.

SCN requested much more detail in the CHROMP about proposed habitat restoration and post-treatment monitoring to ensure caribou habitat recovery. SCN also requested the development of a detailed monitoring and adaptive management plan, including an explanation of how additional measures will be used where restoration and offsetting goals are not being achieved. In response to this request, the Proponent has deferred the development of these

detailed plans to the final CHROMP and detailed monitoring plan, which has yet to be filed with the National Energy Board. SCN cannot have confidence in the effectiveness of plans that have not been developed in sufficient detail.

Request:

(a) SCN reiterates our request for an estimate of the amount of "existing disturbance area" within the project footprint that may currently benefit caribou by reducing predator movement (i.e., has tree or shrub regeneration at greater than 0.5 m in height). Please include in the response the total footprint area falling outside of the Little Smoky range but within Zone 2.

(b) SCN is not opposed to the use of multipliers, but has clearly requested the application of more precautionary values. Using multipliers, please clarify how these values will be adjusted to meet the minimum requirements recommended by SCN (e.g., a minimum 4:1 offsetting ratio for the total footprint within the range that will be maintained in an early seral condition).

(c) Please provide a response to SCN's request for a list of other areas that could be put forward for restoration, which would result in an improvement in overall habitat condition within an area of the Little Smoky range that is currently highly used by boreal caribou and can be protected from further impacts, based on management objectives defined by the provincial government. Please include rationale for the selection of the existing active pipeline (GPML) for restoration, within the context of caribou habitat disturbance and caribou habitat use in the Little Smoky range.

(d) The Proponent's response to SCN's request for an evaluation of the application of HDD was insufficient to demonstrate that a thorough assessment had been conducted for the application of this potential mitigation measure. SCN reiterates our request for a map of intact and sufficiently regenerated caribou habitat within the project footprint, and a plan that clearly demonstrates where HDD could be applied to mitigate fragmentation of these areas.

(e) SCN reiterates our request for a more detailed CHROMP, including a monitoring and adaptive management plan at this time. This information is necessary to evaluate whether adequate measures are being taken to sufficiently reduce the risk to woodland caribou. At a minimum, please provide a clear commitment for working collaboratively with SCN in the development of the final CHROMP, as well as detailed monitoring and adaptive management plans. Please include support for SCN participation in the development and implementation of these programs, including the selection of adaptive

management strategies, development of reporting protocols, and on the ground monitoring.

(f) Please identify the process and schedule to engage SCN in the development of the final CHROMP in order to close the information gaps, and identify residual effects, relating to caribou.

(g) Please indicate whether NGTL will provide capacity funding to support SCN's participation in the development of the final CHROMP in order to close the information gaps, and identify residual effects, relating to caribou.

Response:

Regarding the Preamble, NGTL would like to respond to some specific statements from SCN:

> "The Proponent has not provided adequate rationale for the low offsetting area (14.7 ha) associated with the project footprint area in the Little Smoky range. At a minimum, any portion of the footprint that will be maintained in an early seral condition should be considered for the maximum offsetting ratio (i.e., a minimum of 52.68 ha). In accounting for overlap with existing disturbances (when applying a 500 m buffer around all disturbances within the Range), for example, the Proponent fails to account for the loss of previously disturbed habitat that already has regenerated or would regenerate to a sufficient level to benefit caribou within the lifetime of the project."

As detailed in Section 3.5.1 of NGTL's Reply Evidence,[1] 14.7 ha is the Initial Offset Value (IOV), which represents the Project Residual Effect. The IOV does not represent the area of offsets to be implemented. This residual effect, or IOV, will be adjusted based on the actual restored construction footprint. It is then subject to further multipliers (Delivery Risk, Spatial Risk, and Temporal Risk) based on the specific planned offset measures and their location. Therefore, the Final Offset Value (FOV) will be larger than this total residual effect and specific to the types of offsets planned. The FOV will be provided in the Final CHROMP.

(a) NGTL does not possess the data required to identify vegetation height specific to 0.5 m on the existing disturbance in the vicinity of the Project. Further, the data does not inform the offset calculations because, under the definitions in the ECCC's Recovery Strategy for the Woodland Caribou (*Rangifer tarandus caribou*), Boreal Population, in Canada (2012), these areas are considered disturbed habitat within the Little Smoky Caribou Range. NGTL also notes that Zone 2 is not considered critical caribou habitat

[1] NEB Filing ID: C00043-1.

but has been identified by the province of Alberta as an area for coordinated access management in the Draft Little Smoky and A La Peche Caribou Range Plan (2016).

(b) As noted in NGTL's Reply Evidence,[2] the restoration and offset valuation method used for all of NGTL's projects is not based on ratios; it includes the use of several multipliers to account for delivery, spatial and temporal risks specific to the proposed restoration or offset habitat, the specific measures proposed, as well as an inherent effect multiplier (with respect to the determination of the habitat restoration). Therefore, multipliers are not adjusted to meet a desired ratio. This approach is specific to the habitat locations and treatments and provides more accurate information regarding losses and offsets associated with a project, relative to a set ratio, which does not account for site-specific conditions. NGTL's multipliers, which account for identified risks and uncertainty, are applied in the Preliminary CHROMP (to determine the total Project residual effect [IOV]) and then again in the Final CHROMP to determine the area required for offsetting (FOV). The FOV will be larger than the IOV and specific to the types of offsets planned, accounting for identified risks and uncertainty. The FOV will be provided in the Final CHROMP.

Rationale and details for each multiplier is summarized in Annex A, Section 4.2 of the amended Preliminary CHROMP.[3] NGTL views that its method for habitat restoration and habitat offset valuation, as presented in the amended Preliminary CHROMP, is a defensible approach that has been accepted by the NEB for previous NGTL projects.[4]

(c) As stated in Section 4.2 of the CHROMP, the existing Grande Prairie Mainline was identified as the preferred location for offsets based on discussions with AEP. Section 4.2 of the CHROMP also details the methods for evaluating offset options. The existing GPML is the preferred location for offsets for the following reasons:

- it is an area that can be reasonably protected long-term under TCPL's operational control
- it promotes the eventual establishment of preferred caribou habitat
- allows for corridor-level treatments on the construction footprint and existing, parallel NGTL ROW
- it reduces the amount of existing disturbance under operational control of TCPL

(d) See the response to a) regarding mapping of existing vegetation heights and existing disturbance. NGTL provided maps of the Project Footprint's overlap with existing disturbance and new disturbance in the response to NEB 3.11.[5]

[2] NEB Filing ID: C00043.
[3] NEB Filing ID: C00043, Appendix 3-2.
[4] For example, Leismer to Kettle River Crossover Project Final Offset Measures Plan (NEB Filing ID: A61262, Part 1) and Chinchaga Lateral Loop No. 3 Final Offset Measures Plan (NEB Filing ID: A75414-2).
[5] NEB Filing ID: A99941.

As stated in the response to SCN 3.2 d),[6] "Horizontal directional drilling (HDD) and other trenchless methods of pipe installation capable of crossing large distances require significant workspace near the drill entry and exit locations for drill pads, drilling equipment, mud handling, mud disposal, and pipe set up area. Trenchless methods also require access to large amounts of water, which can be limited during winter months. Furthermore, the typical duration for trenchless pipe installation is much longer than for trenched methods. For these reasons, HDD will not be included as an effective mitigation measure for pipeline construction in woodland caribou range."

Trenchless methods have varying maximum lengths, with HDDs typically capable of handling longer lengths, while other trenchless methods much less. Typically, an HDD trenchless method can handle up to 1000 m in length; however, these lengths are heavily dictated by pipe size, subsurface conditions/suitability, and surrounding workspace availability. Based strictly on HDD length limitations, horizontal directional drilling would need to be conducted at multiple locations significantly increasing the amount of workspace required and likely significantly increasing construction duration. Increased construction duration could further result in construction activities within the restricted activity period or over multiple seasons.

NGTL notes that it is currently undertaking detailed construction planning and is evaluating a number of non-typical construction methods to minimize construction duration within the Range, in addition to minimizing fragmentation. For example, NGTL is currently assessing the feasibility of extending the length of bores on either side of road crossings in order to maintain a buffer of residual forest.

(e) NGTL maintains that the timing proposed in the Preliminary CHROMP for development of the Final CHROMP, associated offsets, and monitoring plans is appropriate, as offsets can only be determined based on the as-built construction footprint and restoration. This timing is supported by the potential conditions from NEB[7] for the Project and is consistent with timing of Final CHROMP and monitoring plans for projects previously approved by the Board. Included in the potential conditions is a requirement for NGTL to provide evidence how consultation feedback from any potentially affected Indigenous peoples was integrated into the implementation of offsets. NGTL has previously confirmed that available TK and recommendations gathered through the Project's ongoing Aboriginal engagement will be considered in the development of the Final CHROMP for the Project, as appropriate. Inclusion of TK and recommendations gained through engagement are intended to ensure measures are implemented in a manner that avoids or minimizes disruption to traditional activities in the restoration areas. NGTL also has clearly communicated its commitment to meet with each interested Aboriginal group directly to answer questions and discuss any concerns regarding the Preliminary CHROMP for

[6] NEB Filing ID: A98233-13.
[7] NEB Filing ID: A97902.

the Project, upon request. NGTL confirms that SCN will be included in the engagement intended to meet this commitment.

(f) NGTL plans to initiate the development the Final CHROMP after the completion of all construction and the subsequent acquisition of data to determine the final footprint and the success of planned construction related mitigation including access control, likely at the end of 2021 or early 2022. NGTL proposes to develop a 'draft' version of the Final CHROMP to share with interested Aboriginal groups to seek feedback for consideration in the finalization of the CHROMP. In addition, NGTL is willing to meet with interested Aboriginal groups to discuss the CHROMP and any feedback provided. Any additional details regarding the process for engaging SCN in the finalization of the CHROMP would be determined through discussions with SCN.

(g) In April 2019, NGTL executed an agreement with SCN to provide capacity funding for engagement activities with NGTL for the Project.

IR Number: SCN 3.6

Category: Culturally Important Plants and Pollinators

Topic: Assessment of Pollinators

Reference:
(i) Nova Gas Transmission Ltd, Response to Samson Cree Nation Information Request 1 - A6S5R6

(ii) NGTL Information Request Response to NEB IR No. 3 - A6V2C9

Preamble: In reference (i) and in the Proponent's response to the Board's IR 3.21 (reference (ii)) the Proponent notes that, "Restoration of natural vegetation communities along the ROW will also restore natural ecological function, including the distribution of natural pollinators (e.g., bees) in the LSA." SCN requests further details on the expected ecological function after restoration and other mitigations supportive of pollinators, in particular:

Request:
(a) How has the Proponent considered or further investigated the potential project and cumulative effects on pollinators since the ESA.

(b) Please describe in detail the expected ecological function(s) post restoration, how this is quantified in terms of factors supportive of pollinators (eg. Habitat type and distribution), and what follow-up measures are planned to ensure equivalent or greater ecological function is restored for pollinators.

Response:

(a) The process for selecting wildlife species or species groups deemed most suitable for a comprehensive and representative assessment for the Project is discussed in ESA Sections 11.2[1] and 12.2.[2] Pollinators were not selected as a species group for assessment. However, the ESA includes an assessment of vegetation (Section 7.0).[3] As discussed in NGTL's response to SCN 7.1 c)[4] related to pollinators and reiterated in NGTL's response to NEB 3.21,[5] "Project effects on vegetation cover types were assessed in ESA Section 7.0. Predicted residual effects for vegetation, including loss or alteration of vegetation cover types were presented in ESA Section 7.5, Table 7.5-1, and based on the criteria set out in the ESA (Section 4.3.3), were predicted to be not significant. The cumulative effects assessment for vegetation was addressed in Section 7.6. The results were provided in Table 7.6-1 and discussed in Section 7.6.1.

[1] NEB Filing ID: A92619-13.
[2] NEB Filing ID: A92619-14.
[3] NEB Filing ID: A92619-11.
[4] NEB Filing ID: A98233-13.
[5] NEB Filing ID: A99941-1.

Based on the criteria set out in the ESA (Section 4.3.3), cumulative effects were predicted to be not significant. Reclamation of natural vegetation communities along the ROW will also restore natural ecological function, including the distribution of natural pollinators (e.g., bees) in the LSA".

(b) NGTL's preferred approach for reclamation is through the use of natural recovery for most areas, which will promote the ingress of native vegetation communities. The re-establishment of the natural vegetation communities will re-establish nutrients, food sources, cover, breeding grounds, and source material for wildlife uses (e.g., nesting materials, pollen, etc.) that provide for the overall ecological function of a natural habitat. As these natural features recover, wildlife, including pollinators, are expected to resume use of the area. Therefore, successful re-establishment of natural vegetation communities to equivalent land capabilities will be indicative of restored ecological function for pollinators.

Reclamation success and vegetation re-establishment has been well demonstrated over decades of TCPL's operating experience in the Project area. Reclamation measures described in the Project EPP[6] have been proven effective through the results of NGTL's post-construction monitoring (PCM) activities. The objective of these reclamation measures includes establishing a vegetative cover compatible with surrounding vegetation and land uses and maintaining equivalent land capability. As described in ESA Section 25.0,[7] PCM activities include an assessment of reclamation success which involves monitoring for vegetation re-establishment on the right-of-way (ROW) and assessing revegetation on the ROW in comparison to vegetation off the ROW, with the goal of a trajectory towards achieving or maintaining equivalent land capabilities.

[6] NEB Filing ID: A94156-3.
[7] NEB Filing ID: A92619-15.

NATIONAL ENERGY BOARD
OFFICE NATIONAL DE L'ÉNERGIE

Hearing Order / Ordonnance d'audience
GH-003-2018

NOVA Gas Transmission Ltd.
2021 System Expansion Project

NOVA Gas Transmission Ltd.
Projet d'agrandissement du réseau en 2021 Projet

VOLUME 10

Hearing held at
L'audience tenue à

National Energy Board
517 Tenth Avenue SW
Calgary, Alberta

August 13, 2019
Le 13 août 2019

International Reporting Inc.
Ottawa, Ontario
(613) 748-6043

Canada

This publication is the recorded verbatim transcript and, as such, is taped and transcribed in either of the official languages, depending on the languages spoken by the participant at the public hearing.

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HEARING ORDER/ORDONNANCE D'AUDIENCE
GH-003-2018

IN THE MATTER OF NOVA Gas Transmission Ltd.
2021 System Expansion Project

HEARING LOCATION/LIEU DE L'AUDIENCE

Hearing held in Calgary, Alberta, Tuesday, August 13, 2019
Audience tenue à Calgary (Alberta), mardi, le 13 août 2019

BOARD PANEL/COMITÉ D'AUDIENCE DE L'OFFICE

Roland George	Chairman/Président
Murray Lytle	Member/Membre
Damien Côté	Member/Membre

APPEARANCES/COMPARUTIONS

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- Mr. Sander Duncanson
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Samson Cree Nation
- Mr. Kennedy A. Bear Robe

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- Ms. Sara Louden

National Energy Board/Office national de l'énergie
- Ms. Rebecca Brown
- Mr. Andrew Matthews

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UNDERTAKINGS/ENGAGEMENTS

No.	Description	Paragraph No./No. de paragraphe

4347. **MR. BEAR ROBE:** Would you agree that NGTL's Aboriginal engagement program describes NGTL's approach to obtaining and incorporating traditional knowledge?

4348. **MS. DUNN:** Sorry, can you repeat the question?

4349. **MR. BEAR ROBE:** Sure. Would you agree that NGTL's Aboriginal engagement program describes NGTL's approach to obtaining and incorporating traditional knowledge?

4350. **MS. DUNN:** Yes. In Section 13 of the application on PDF page 189, it is heading "Sharing of Traditional Knowledge" and it outlines how NGTL works with interested Aboriginal groups to collect and incorporate TK.

4351. **MR. BEAR ROBE:** Okay. Continuing down the lists -- you have reviewed TransCanada's 2021 Project brochure dated February 2018?

4352. **MS. DUNN:** Yes.

4353. **MR. BEAR ROBE:** NGTL's Aboriginal engagement logs?

4354. **MS. DUNN:** Yes.

4355. **MR. BEAR ROBE:** NGTL's reply evidence dated June 19th, 2019?

4356. **MS. DUNN:** Yes.

4357. **MR. BEAR ROBE:** Independent reports prepared by -- for NGTL by Wood Environment and Infrastructure?

4358. **MS. DUNN:** Yes, I'm familiar with those documents.

4359. **MR. BEAR ROBE:** So you've reviewed the environmental and socioeconomic assessment report?

4360. **MS. DUNN:** Sorry, can you clarify what you mean by "review"?

4361. **MR. BEAR ROBE:** Have you read the environmental assessment report prepared by Wood?

4444. **MS. DUNN:** Yes, I am.

4445. **MR. BEAR ROBE:** Okay. And you would agree that NGTL is required to file a consultation program pursuant to the NEB filing manual?

--- (A short pause/Courte pause)

4446. **MS. DUNN:** According to section 3.4 of the NEB Filing Manual, the consultation section, it does note that the Board expects an applicant to have a company-wide consultation program.

4447. **MR. BEAR ROBE:** Okay. And did NGTL file a consultation program?

4448. **MS. DUNN:** NGTL filed the information in the guidance of that section, which includes overview of the policy and goals of the consultation program, a description and design of the project-specific consultation activities, and a description of the outcomes of the project-specific activities.

4449. **MR. BEAR ROBE:** Okay. And would you agree that all of this information is contained within NGTL's Aboriginal engagement program?

4450. **MS. DUNN:** All of that information was within section 13 of the application. And as additional information on outcomes of engagement was received or progressed in the engagement activities, those updates were provided in subsequent filings.

4451. **MR. BEAR ROBE**: Okay. So it's my understanding that NGTL's Aboriginal Engagement Program reflects NGTL's Aboriginal Relations Policy; is that correct?

4452. **MS. DUNN**: As stated in section 13.1 of the application, our -- Trans Canada's Aboriginal Relations Policy outlines the guiding principles for the Project Engagement Program.

4453. **MR. BEAR ROBE**: And do you know what those guiding principles are?

4454. **MS. DUNN**: So the Aboriginal Relations brochure was included with

the application, but this information is also available on the Trans Canada website. The Trans Canada Aboriginal Relations Policy principles include respecting the diversity of Aboriginal cultures and recognizing the importance of land and cultivating relationships based on trust and respect, working together with Aboriginal groups to identify impacts of company activities on the communities' values and needs in order to find mutually acceptable solutions and benefits, also striving to create sort-and-long-term employment opportunities for Aboriginal people impacted by our activities, and supporting learning opportunities for Aboriginal people to provide a well-trained source of Aboriginal employees, and to build capacity within Aboriginal communities.

4455. And then finally, respecting the legal and Constitutional rights of Aboriginal people and recognizing that our relationship with Aboriginal groups are separate and different from that of the Crown.

4456. **MR. BEAR ROBE**: Okay. Would it also include the development of a positive long-term relationship?

4457. **MS. DUNN**: So while that's not specifically pointed out as a principle within the Aboriginal Relations Policy, it is noted within the Indigenous Relations Policy.

4458. **MR. BEAR ROBE**: Sorry, I'm a bit confused. So it is a principle within the Aboriginal Relations Policy?

4459. **MS. DUNN**: As I mentioned, it's not specified as a particular separate principle within the Aboriginal Relations Policy; however, it is something that is noted within our Indigenous Relations Policy.

4460. **MR. BEAR ROBE**: And the Aboriginal Engagement Program reflects the Aboriginal Relations Policy?

4461. **MS. DUNN**: At the time of the development of the engagement approach, NGTL had the Aboriginal Relations Policy for within Canada. Since filing the application, NGTL -- or Trans Canada, TC Energy, has also approved a revised Indigenous Relation Policy which combines and replaces our previous Aboriginal Relations Policy and Native American Relations Policy.

4462. **MR. BEAR ROBE**: Do you know what the currency is of that Aboriginal Relations Policy?

4463. **MS. DUNN**: Sorry, what do you mean?

4464. **MR. BEAR ROBE**: When was it published?

4465. **MS. DUNN**: It's my understanding that it became effective -- the effective date of its last revision was in 2011.

4466. **MR. BEAR ROBE**: Could we pull up NEB document A92619-7? This is the Appendix 12-1, Trans Canada initial notification letter.

4467. **THE REGULATORY OFFICER**: What page, please?

4468. **MR. BEAR ROBE**: It's Appendix 13-1, page 1 of 6. There it is.

4469. Are you -- Ms. Dunn, are you familiar with this letter?

4470. **MS. DUNN**: Yes, I am familiar with this letter.

4471. **MR. BEAR ROBE**: And this letter was sent from Paul Anderson to Aboriginal groups involved in the NEB review?

4472. Okay. We have the wrong -- it's Appendix 13-1. Keep scrolling. Okay. Let's pause here.

4473. Are you familiar with this letter dated February 13th from Paul Anderson?

4474. **MS. DUNN**: Yes, I'm familiar with that letter.

4475. **MR. BEAR ROBE**: Thank you. And this letter would have been sent to Aboriginal groups involved in the NEB hearing for the Project?

4476. **MS. DUNN**: Versions of this letter were sent to the Aboriginal groups engaged in this Project.

4477. **MR. BEAR ROBE**: And if you scroll down to the signature, it shows that Paul Anderson had sent it, correct?

4478. **MS. DUNN**: That is correct.

impact benefit agreements with any Aboriginal groups participating in this NEB hearing?

4546. **MS. DUNN**: As stated in our response to Horse Lake First Nation 2.3(j), as a matter of practice, NGTL does not enter into impact benefit agreements. NGTL's practice, as I've explained previously, is where appropriate and depending on the scope and scale of the project, to offer a range of project-specific capacity funding agreements to Aboriginal groups for engagement activities with NGTL to better understand and identify potential effects. And by understanding the potential project-related effects, NGTL can then develop effective strategies to avoid, mitigate, or manage them through the project design and mitigation measures.

4547. And then, as I mentioned, in addition NGTL works directly with Aboriginal groups, as aligned with our policy, through community investment, education and training, and project-related employment and contracting to promote and enhance long-term benefits for Aboriginal groups.

4548. **MR. BEAR ROBE:** Thank you. And you specified in your response NGTL; does the same response apply to TransCanada or TC Energy?

4549. **MR. DUNCANSON:** Mr. Chairman, I'm struggling to see the relevance of practices of organizations other than NGTL, which is what we're here to speak about today.

4550. **THE CHAIRMAN:** Mr. Bear Robe?

4551. **MR. BEAR ROBE:** I thank my friend for his question, and I would remind the NEB that in the decisions of *Tsleil-Waututh Nation*, the evidence regarding the Proponent's engagement, including whether consultation-related agreements were concluded, were decided to be relevant in terms of the Board's assessment of impacts to Aboriginal and treaty rights.

4552. **THE CHAIRMAN:** Mr. Duncanson?

4553. **MR. DUNCANSON:** Yeah, Mr. Chair, I'm not disputing that what NGTL has done in terms of engagement and providing benefits to communities is relevant. I agree it is relevant. What I submit to you is not relevant is what organizations other than NGTL do. That is not relevant, I submit, in understanding this particular project and the list of issues for this proceeding.

--- (A short pause/Courte pause)

4554. **THE CHAIRMAN:** We're not quite sure what your question was, but we are here for an application by NGTL. And actually, could you restate your question so we understand more clearly?

4555. **MR. BEAR ROBE:** Has NGTL concluded any impact benefits agreement or consultation-related agreements with any of the impacted Aboriginal groups that are currently participating in the NEB hearing?

4556. **MR. DUNCANSON:** Mr. Chairman, just so the record is clear, I wasn't -- that question was previously asked, and I believe it was answered by the witnesses. I did not object to that question. My objection was in respect of the following question, which was not related to NGTL. It was related to other TransCanada entities and whether they had entered into any impact benefit agreements.

4557. **THE CHAIRMAN:** That was our understanding. That's why I wanted to clarify.

4558. So did you ask a question of the NGTL panel about the other TCPL entities?

4559. **MR. BEAR ROBE:** Yes. That was a follow-up question given Ms. Dunn's expertise that ranges across various jurisdictions, as she communicated earlier, including British Columbia and other Prairie provinces. So I'm wondering, in her experience, has TransCanada, under her oversight, entered into any impact benefits agreement or similar agreements with impacted Aboriginal groups.

4560. **THE CHAIRMAN:** Okay, that's what we thought we heard, and that's asking an NGTL representative here for another entity, and we don't think that's appropriate.

4561. **MR. BEAR ROBE:** Okay. Moving on, then, could the Board pull up NEB ID A98447-1? Thank you.

4562. First off, earlier, Ms. Dunn, you mentioned that you have reviewed NEB hearing documents filed by Samson Cree, including its comments on

NGTL's consultation log. Is that still true?

4563. **MS. DUNN:** Yes.

4564. **MR. BEAR ROBE:** So you're familiar with this letter?

4565. **MS. DUNN:** Yes.

4566. **MR. BEAR ROBE:** And you agree it provides Samson Cree's comment on NGTL's consultation log?

4567. **MS. DUNN:** I agree that it is what Samson Cree filed as their comments on the updated consultation logs.

4568. **MR. BEAR ROBE:** Can we scroll down to page 2 of that letter? The second last paragraph reads:

> *"On March 11, 2019, NGTL introduced the concept of a Relationship Agreement for the Project. Based on the description, the Relationship Agreement would largely relate to potential economic impacts on Indigenous Peoples, including Samson Cree. As of today's date, a copy of the Relationship Agreement has not yet been provided to Samson Cree for review."*

4569. Are you familiar with the mechanism that was proposed by an NGTL representative -- the Relationship Agreement?

4570. **MS. DUNN:** Yes, I'm familiar with the Relationship Agreement, and I'm familiar with the fact that it has been raised in conversations with Samson Cree Nation.

4571. **MR. BEAR ROBE:** Can you describe what a Relationship Agreement is?

4572. **MS. DUNN:** NGTL's Relationship Agreements typically outline a process of understanding of working together with an Aboriginal group with regard to the engagement process, how information will be shared and communicated. It includes some things like timelines and outlines an overall foundation for a relationship, but is not specific to any particular project and is not

connected to any funding.

4573. **MR. BEAR ROBE:** Is it a vehicle to provide mutually satisfactory solutions and benefits to impacted Aboriginal groups?

4574. **MS. DUNN:** It is actually a tool that NGTL uses where communities are interested in negotiating a relationship agreement to outline the relationship and the process of how we work together outside of any particular project. And it helps inform the process and develop that understanding prior to any projects that might be in their particular area.

4575. It is not connected to benefits, as I believe you are defining them, as -- which, correct me if I'm wrong, but I believe you're implying potential positive effects.

4576. It is more of -- the benefit actually is about having clarification on the relationship between NGTL and that particular community so that when projects are in their area, it's clarified how we will work together, what that process will look like, and in particular, also areas where we will be engaging with that particular community.

4577. **MR. BEAR ROBE:** And you mentioned that you were aware that Mr. Paul Anderson, who you supervise, raised the concept or the tool of the relationship agreement to Samson Cree Consultation Office representatives at a meeting?

4578. **MS. DUNN:** Yes, I'm aware that we have had conversations with Samson Cree Nation about discussing a potential relationship agreement with them.

4579. **MR. BEAR ROBE:** And earlier you mentioned that before any consultation agreements go out to Aboriginal groups, you would review those agreements. Is that correct?

4580. **MS. DUNN:** Before I specified that any project engagement capacity funding agreements or traditional knowledge protocol agreements, before those go to communities, I do review them, yes.

4581. However, my role as a team lead would also be involved in working with the community on negotiating a relationship agreement as appropriate as

should consider establishing a consultation protocol in collaboration with these groups that takes into consideration their needs and cultural elements."

4593. **MS. DUNN:** Yes, I see that.

4594. **MR. BEAR ROBE:** Okay. Has NGTL worked with Samson Cree to develop a consultation protocol for the Project?

4595. **MS. DUNN:** So as described in the application, in section 13.2.2, and on page -- PDF page 188, NGTL engaged in preliminary discussions with potentially effected groups to understand the specific capacity and resourcing needs.

4596. NGTL worked with the groups then to develop project specific workplans and budgets to formalize the engagement activities to be conducted for the project and the associated funding with that.

4597. NGTL recognizes that each Aboriginal group may have different processes or means of gathering and sharing information and so we tailor our approach based on those conversations with the community.

4598. Specifically with regards to Samson Cree Nation, NGTL has executed an engagement capacity funding agreement, as well as a TK protocol agreement which actually occurred in September of 2018 for the TK protocol agreement and April of 2019 for the engagement capacity funding agreement.

4599. **MR. BEAR ROBE**: And you oversaw both of these agreements?

4600. **MS. DUNN**: Yes, as I've mentioned, I reviewed the agreements prior to them being sent to the communities.

4601. **MR. BEAR ROBE**: So there's a TK protocol and the second agreement I believe you're referring to is the letter of agreement?

4602. **MS. DUNN**: Yes. So NGTL does engagement capacity for many agreements that are often referred to as letter of agreement.

4603. **MR. BEAR ROBE**: Could you explain the purpose and objectives of the TK protocol agreement?

4604. **MS. DUNN**: Without getting into any specifics as they are confidential agreements between the Nation and NGTL, I can speak at a high level that the purpose of the TK protocol agreement is to develop an understanding of a work plan and a budget for the community to conduct a community-led, project-specific, traditional knowledge study and it includes information around deadlines for deliverables and information requirements.

4605. **MR. BEAR ROBE**: So the scope of the engagement activity is the preparation of a TK study; is that correct?

4606. **MS. DUNN**: Sorry, do you mean the scope of the agreement?

4607. **MR. BEAR ROBE**: Yes.

4608. **MS. DUNN**: Yes, the TK protocol agreement is specific for defining and outlining the understanding for the community to complete a project-specific traditional knowledge study.

4609. **MR. BEAR ROBE**: And you mentioned that Samson Cree and NGTL concluded the LOA in April of 2019. That's eight months after the Project application was filed; is that correct?

4610. **MS. DUNN**: I mentioned that the agreement was executed in April 2019. Conversations around that agreement started in advance of that.

4611. **MR. BEAR ROBE**: Does the LOA seek to operationalize Trans Canada's Aboriginal Relations Policy by developing a long-term positive relationship?

4612. **MS. DUNN**: As I mentioned, it is a tool within NGTL's engagement program for identifying engagement activities with the community for a project as well as a potential capacity from being associated with those activities. It aligns with our overall policies but the term of that agreement, being project specific, is until operation.

4613. **MR. BEAR ROBE**: So there is a specific term of that LOA and it's until operation? So that's how long?

4614. **MS. DUNN**: So basically, it covers the years of engagement prior to

regulatory process, during, and throughout the regulatory process, during construction, and essentially, until the engagement activity is completed upon in service, in which case, engagement for the project is transitioned to our regional liaisons once the project is in operation. And ongoing support for community initiatives is through the community investment, education, and training, and specific requests that we receive from the communities during operations.

4615. **MR. BEAR ROBE**: So you would agree that the LOA does not develop a long-term positive relationship between Samson Cree and NGTL?

4616. **MS. DUNN**: I would -- as I have kind of already said, the agreement is based on creating an understanding of how we will work together, preferably in a positive way, during the life of the project until it goes into service.

4617. **MR. BEAR ROBE**: Didn't you just say that the LOA, the term of the LOA is up until operation?

4618. **MS. DUNN**: Correct. So once the project goes in service, it is turned over into operations.

4619. **MR. BEAR ROBE**: Then you would agree that the LOA would last, at that time, and there wouldn't be an agreement in place to guide a long-term positive relationship between Samson Cree and NGTL?

4620. **MS. DUNN**: So I guess I would remind you that it is a -- the LOA is a project-specific agreement. If you're looking at longer-term relationship agreements or understanding of that longer-term relationship, that is more something that would be covered through the relationship agreement that you mentioned earlier, as we have already raised with Samson Cree Nation.

4621. **MR. BEAR ROBE**: Okay. I'm still unclear what goes into a relationship agreement. Could you expand on subject topics that would go into that type of agreement?

4622. **MS. DUNN**: So as we haven't received feedback from O'Chiese on a particular agreement yet, the agreements can vary through the negotiation with the particular community. But typically, it outlines the engagement process. It has a map to identify areas where engagement would occur and it outlines the rules and responsibilities and expectations of both parties in the engagement activities in general.

4623. **MR. BEAR ROBE**: So the relationship agreement does not provide economic accommodation through the life of the project; is that correct?

4624. **MS. DUNN**: No. As I mentioned, there is no funding associated with a relationship agreement. A relationship agreement is to outline the relationship between a particular Aboriginal group and NGTL and the processes with which we would work together.

4625. **MR. BEAR ROBE**: So once the project is in operation, the only positive economic effect is potential long-term employment opportunities; is that correct?

--- (A short pause/Courte pause)

4626. **MS. DUNN:** So as you mentioned, a long-term benefit may be employment opportunities. With regards to NGTL's ongoing engagement throughout the life of the project, as I mentioned, there is also the ongoing support for community investment, education, training, and scholarships, as well as, as I mentioned, the potential employment opportunity.

4627. **MR. BEAR ROBE:** Okay. You mention scholarships and also community investment. Can you define community investment for me, please?

--- (A short pause/Courte pause)

4628. **MS. DUNN:** So if I can just draw your attention to the application. Within Section 13 there is a section called "Community Investment".

4629. **MR. BEAR ROBE:** Okay. One second. Could we pull that up, please?

4630. **THE CHAIRMAN:** Do you have a number available to you?

4631. **MR. BEAR ROBE:** Pardon me?

4632. **THE CHAIRMAN:** Do you have ---

4633. **MR. BEAR ROBE:** Oh.

4646. **MR. BEAR ROBE:** Okay. Now, looking at the second one, community, without funding, how does NGTL support organizations and community initiatives that bring communities together through initiatives such as cultural preservation, community events, health and wellness, skills development, job readiness, and career development?

4647. **MS. DUNN:** So perhaps I should clarify. NGTL -- what's meant by community investment is providing funding to communities within these focus areas and investing in the community's identified needs and long-term goals.

4648. **MR. BEAR ROBE:** Okay. I want to get back one last -- to the LOA and one last question on it. Are you aware that Samson Cree has raised concerns on the LOA?

4649. **MS. DUNN:** I'm aware that during the negotiation of that agreement there were concerns raised. My understanding is that those concerns were resolved, which led to Samson Cree Nation signing the agreement and the agreement being executed.

4650. **MR. BEAR ROBE:** Okay. So earlier we were talking about the consultation protocol and working in collaboration with Aboriginal groups to design work plan and budgets, and you mentioned that this was addressed through both the TK protocol agreement and the LOA. Do either of these documents provide Samson funding to engage NGTL during the NEB hearing?

4651. **MS. DUNN:** As I've mentioned for these agreements, the TK protocol provides funding for the Samson Cree Nation to conduct a traditional knowledge study specific for the project, and the LOA provides engagement capacity funding for engagement activities with NGTL for the project.

4652. It is my understanding that the NEB has their own participant funding that is available and something that intervenors and commenters can apply for.

4653. **MR. BEAR ROBE:** Okay. And does either the TK protocol agreement or the LOA provide capacity to Samson Cree Nation to retain subject topic experts to review specific sections of the project application and environmental socio-economic report?

4654. **MS. DUNN:** So without getting into details of a confidential agreement, I can specify that the nature of the activities and the line items within

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OFFICE NATIONAL DE L'ÉNERGIE

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NOVA Gas Transmission Ltd.
Projet d'agrandissement du réseau en 2021 Projet

VOLUME 13

Hearing held at
L'audience tenue à

National Energy Board
517 Tenth Avenue SW
Calgary, Alberta

August 16, 2019
Le 16 août 2019

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GH-003-2018

IN THE MATTER OF NOVA Gas Transmission Ltd.
2021 System Expansion Project

HEARING LOCATION/LIEU DE L'AUDIENCE

Hearing held in Calgary, Alberta, Friday, August 16, 2019
Audience tenue à Calgary (Alberta), vendredi, le 16 août 2019

BOARD PANEL/COMITÉ D'AUDIENCE DE L'OFFICE

Roland George	Chairman/Président
Murray Lytle	Member/Membre
Damien Côté	Member/Membre

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- Ms. Rebecca Brown
- Mr. Andrew Matthews

question, please?

7214. **MR. BEAR ROBE:** Of course. Would ECCC agree that for the Project, NGTL should avoid or reduce the predicted residual project effects on the Little Smoky caribou?

7215. **MS. McLANDRESS:** Yes, we would.

7216. **MR. BEAR ROBE:** Thank you. Additionally, would ECCC also agree that for the project, NGTL should offset the Project's contribution to cumulative effects on caribou populations and caribou habitat?

7217. **MS. McLANDRESS:** Okay. Please, we ask for patience. It's the end of a long week; we're not trying to be difficult, we just want to be accurate. So if Mr. Bear Robe could please repeat that question so we understand exactly what you're asking?

7218. **MR. BEAR ROBE:** Of course. Does ECCC agree that for the Project, NGTL should offset the Project's contribution to cumulative effects on the Little Smoky caribou populations and caribou habitat?

7219. **MR. GREGOIRE:** Mr. Chair, our position is that there should be no additional loss of critical habitat within the Little Smoky range. And in the event that the Project goes ahead, then project effects on caribou critical habitat should be fully mitigated using offsets.

7220. **MR. BEAR ROBE:** Thank you. And should the Project go ahead, should those offsets be designed in a matter that aligns with Canada's recovery strategy?

7221. **MS. McLANDRESS:** Mr. Chair, we would agree with that, yes.

7222. **MR. BEAR ROBE:** Thank you. And the offset ratio that NGTL's Project application proposes -- currently proposes is 0.84 to 1? Is that your understanding as well?

7223. **MR. GREGOIRE:** Mr. Chair, that is consistent with our submission at the time of our submission.

7224. **MR. BEAR ROBE:** Thank you. And 0.84 to 1 offset ration is less

than a 1 to 1 offset ratio? Is that correct?

7225. **MR. GREGOIRE:** Yes.

7226. **MR. BEAR ROBE:** A 1 to 1 offset ratio means that for every one hectare lost, NGTL would reclaim one hectare of caribou habitat; correct?

7227. **MR. GREGOIRE:** Mr. Chair, for every one hectare of habitat destroyed, you're seeing it replaced with one hectare.

7228. **MR. BEAR ROBE:** Thank you. So you would agree that NGTL's 0.84 to 1 offset ratio is resulting in a net loss of critical habitat?

7229. **MR. GREGOIRE:** Mr. Chair, yes, that's consistent with our submission that an offset of 0.1 for 1 would result in a net loss of habitat.

7230. **MR. BEAR ROBE:** Thank you.

7231. **MS. McLANDRESS:** Just to correct that, it was .84 to one.

7232. **MR. BEAR ROBE:** Right. Thank you. And further correction, that loss of critical habitat in the Little Smoky Caribou Range; correct?

7233. **MS. McLANDRESS:** Yes.

7234. **MR. BEAR ROBE:** Thank you. And it's my understanding that ECCC has recommended that its minimum standard of a four to one offset ratio be applied to the project, should it be approved? Is that correct?

7235. **MS. McLANDRESS:** Yes, Mr. Chair, that is our recommendation.

7236. **MR. BEAR ROBE:** Okay. So it is in this context that I ask the following question.

7237. At a 0.84 to 1 offset ratio, do you agree that NGTL's offsetting ratio is insufficient to fully mitigate impacts of the Project to Little Smoky caribou critical habitat range?

7238. **MR. GREGOIRE:** Mr. Chair, yes.

Attachment 1- Environment and Climate Change Canada (ECCC) Response to Information Requests from Intervenors Regarding ECCC's Response to the Canada Energy Regulator (Additional IRs) for the Nova Gas Transmission Ltd. (NGTL) 2021 System Expansion Project

File OF-Fac-Gas-N081-2018-03 02
Hearing Order GH-003-2018

October 9, 2019

SAMSON CREE NATION INFORMATION REQUEST NO. 1 TO ECCC (C01855-1)

IR 1.1 Responsibilities and Timelines in Relation to the Agreement With Alberta

Reference:

i) Environment and Climate Change Canada (ECCC) Response to Information Requests Round Three (3) to Intervenors for the Nova Gas Transmission Ltd. (NGTL) 2021 System Expansion System Project - A6X7S5 ("ECCC IR Response")

ii) Draft Agreement for the Conservation and Recovery of the Woodland Caribou in Alberta between Canada, as represented by the Minister of Environment, and the Province of Alberta, as represented by the Minister of Environment and Parks– A6X8K1 (the "Draft Section 11 Agreement")

iii) TransCanada Energy. 2019. "NGTL 2021 Expansion – Project Timelines and Status" Available at: https://www.tcenergy.com/operations/natural-gas/2021- ngtl-system-expansion/#timeline

iv) National Energy Board. 2019. Hearing Order GH-003-2018 NOVA Gas Transmission Ltd. 2021 System Expansion Project - Volume 13 Hearing Held at Calgary Alberta, August 16, 2019. [Transcript] - A6W9Q5

Preamble:

ECCC has a role within this federal environmental assessment for the Project (the "**NEB Hearing**"), and statutory duties to perform related to the Project separate from the NEB Hearing for the Project.

On August 27, 2019, the National Energy Board (the "**Board**") issued Information Request No. 3 to ECCC on environmental matters relating to the Project including questions on the Draft Section 11 Agreement.

During cross-examination, ECCC clarified that its "position is that there should be no additional loss of critical habitat within the Little Smoky range" (*reference (iv), paras. 7214 to 7219*) and agreed that NGTL's offsetting ratio is insufficient to fully mitigate impacts of the Project to the Little Smoky caribou critical habitat range (reference (iv), paras. 7220 – 7238). ECCC has identified that all remaining existing habitat in the Little Smoky caribou population range is considered critical habitat (*reference (iv), paras. 7188 – 7199*).

Additionally, ECCC confirmed that for the Little Smoky range, there is no detailed range plan (reference (iv), paras. 7196 – 7197).

ECCC IR Response indicates that "[w]here federal approvals for Project activities are required, federal decision processes will take into consideration whether provincial range plan requirements have been met" (*reference (i), p. 3*).

Until a spatially explicit range plan is in place for the Little Smoky, there is no mechanism in place to prevent further loss of boreal caribou critical habitat in this range.

The ECCC IR Response, in responding to 3.1 (a), appears to defers responsibility for plans relevant to critical caribou habitat protection to Alberta (i.e. industrial access management plans, strategic resource development plans, and development agreements (the "**Related Plans**")).

The Draft Section 11 Agreement demonstrates that developing and finalizing the Related Plans will be part of the range planning process. As indicated in Table A, Appendix B of the Draft Section 11 Agreement, range planning for critical caribou habitat for the Little Smoky Caribou herd will not be finalized or implemented until year end 2022 (see objective A.1.2 on p. 17 of reference ii).

Furthermore, the ECCC IR Response indicates that ECCC and the Ministry of Environment and Parks have not reached agreement on the Draft Section 11 Agreement.

NGTL's states that construction for the Project is planned for Q2 2020 (*reference iii*), well before the completion of the Little Smoky range planning process.

Request:

a) As a Little Smoky range plan will not be completed until 2022 and Project construction could start in 2020, if approved, please provide details on all feasible measures available to prevent additional loss of critical habitat within the Little Smoky range prior to finalizing a detailed range plan for the Little Smoky caribou.
b) In the absence of a detailed range plan for the Little Smoky caribou, does ECCC agree that the Ministry of Environment and Parks is currently not meeting provincial range plan requirements?
c) Please describe the process and schedule for Indigenous Groups, including Samson Cree, to participate in the negotiation of a parallel caribou recovery Page 3 agreement to the Draft Section 11 Agreement, and collaborate on the development and oversight of a detailed range plan for the Little Smoky caribou.
d) It is SCN's understanding that, once range planning is complete, no areas of the Little Smoky range will be off limits to development. Instead, the Little Smoky range plan will rely on spatially managing the industrial footprint over time, combined with restoration, to restore the range to 65% undisturbed habitat. There will be a substantial time lag between the enactment of the Little Smoky range plan and achieving 65% undisturbed habitat. Please explain how ECCC will assess whether Alberta's approach proposed for the Little Smoky range plan (including the plans noted in Response to IR 3.1 in reference i: "industrial access management plans"; "strategic resource development plans"; and "development agreements") to

determine whether the plan and its components are adequate to prevent continued loss of boreal caribou critical habitat in the Little Smoky Range. Please also describe if and how this information will be provided to the Board before and after the Public Record closes.

e) Please provide your opinion about whether all components of the Little Smoky range plan (i.e. the industrial access management plan"; "strategic resource development plan"; and "development agreement(s)") need to be in place prior to construction commencing in critical boreal caribou habitat. Please provide a full rationale within your explanation.

ECCC Response*:*

a) ECCC's primary recommendation is that any additional existing habitat loss (direct or indirect) in the Little Smoky range should be avoided, as all existing habitat is considered critical habitat, and the Recovery Strategy for Boreal Caribou identifies critical habitat as necessary for the survival and recovery of the species.

Avoidance may be achieved by several means including rerouting, using permanent alterations footprints, and other alternative means of carrying out the Project such as the use of horizontal directional drilling. However, as the regulator for the Project, the CER is responsible to make a determination on the sufficiency and feasibility of alternatives. Management of the Little Smoky range is under the authority of the Province of Alberta and they should be consulted for information about the finalization of the range plan.

b) The Little Smoky provincial range plan has not been finalized. The *Recovery Strategy for the Woodland Caribou (Rangifer tarandus caribou) Boreal population, in Canada* (ECCC, 2012) states that "in ranges with less than 65% undisturbed habitat for which detailed range plans are absent, critical habitat is the existing habitat that over time would contribute to the attainment of 65% undisturbed habitat" (pg. 5). Therefore, without a detailed range plan for the Little Smoky range, all existing remaining habitat is considered critical habitat, unless otherwise identified in a range plan. The draft Canada-Alberta SARA s.11 Agreement for Woodland Caribou commits Alberta to clear timelines for developing range plans for all 15 of their Woodland Caribou ranges. The timeline to complete the Little Smoky range plan is 2021-22.

c) The Province has primary responsibility for the Little Smoky range and regulatory authority for key activities affecting boreal caribou therein, including the development of a range plan. Among the measures included in the draft Canada-Alberta SARA s.11 Agreement for Woodland Caribou, Alberta has proposed to establish Indigenous and multi-stakeholder sub-regional task

forces to provide range-specific details and community-based solutions to achieve critical habitat outcomes as set out in the Recovery Strategies (Appendix B A.1.2). The proposal also includes the provision of capacity funding to enhance Indigenous people's involvement in range plan development and to explore opportunities for their involvement in implementation. ECCC encourages Samson Cree to reach out to Alberta to discuss how their Nation can be involved in the implementation of these measures for caribou conservation.

d) ECCC is negotiating with the province of Alberta, on behalf of the Government of Canada, on a draft Canada-Alberta SARA s.11 Agreement for Woodland Caribou for the protection and recovery of boreal caribou in the Province, which outlines clear timelines for the development of range plans. ECCC will assess range plans in accordance with ECCC's Range Plan Guidance, which was published on the Species at Risk Public Registry in 2016. ECCC views range plans as an important tool to enable provincial/territorial governments to demonstrate how they will protect critical habitat and manage cumulative disturbances in local population ranges over time, and they will be a main source of information to assess critical habitat protections. The Range Plan Guidance calls for range plans to include detailed geospatial plans and to account for restoring and maintaining 65% undisturbed habitat in each local population range.

   ECCC publishes a report on the progress to protect critical habitat for the boreal caribou every 180 days, under s.63 of SARA; the most recent June 2019 Report is available on the Species at Risk Public Registry.

e) As the regulator for the Project, the CER is responsible to determine when the components of the Little Smoky range plan should be in place, relative to the commencement of construction in critical boreal caribou habitat. Having a range plan in place would reduce the uncertainty in assessing potential adverse effects to the Little Smoky herd and associated mitigation measures. However, until a range plan is in place, all existing habitat is considered critical habitat, and ECCC's recommendation is that any additional loss of critical habitat within the Little Smoky Range should be avoided.

IR 1.2 Section 73 Authorizations/Permitting and the Adequacy of the CHR&OMPCHR&OMPCHR&OMP

Reference: i) ECCC-NGTL 2021 System Expansion Project (GH-003-2018)-Response to IR No 3 - A6X7S5

ii) Operational Framework for Use of Conservation Allowances - A6X8K2
iii) Species at Risk Act, SC 2002, c 29 (SARA) Available at: https://lawslois.justice.gc.ca/eng/acts/s-15.3/page-9.html#docCont
iv) Government of Canada. 2016. "Species at Risk Act Policies – Species at Risk Act Permitting Policy" Available at: https://registrelep-sararegistry.gc.ca/virtual_sara/files/policies/Permitting_EN.pdf
v) ECCC-NGTL 2021 System Expansion Project (GH-03-2018) – ECCC's Written Evidence for the NGTL 2021 Pipeline Expansion Project Review (attachment 2).
vi) Nova Gas Transmission Ltd, 2021 NGTL System Expansion Application, June 2018: Section 4.4 Facility Alternatives - A6F4L4 and Section 7.1 Pipeline Routing - A6F4L4

Preamble:

ECCC's response to IR No 3 reference (i) refers to the Operational Framework for Use of Conservation Allowances (or Operational Framework) (reference ii) as ECCC's basis for recommendations concerning the CHR&OMP(see p. 3). The Operational Framework (Reference ii) notes that habitat compensation measures such as conservation allowances will require a permit under section 73 of the *Species at Risk Act* (*SARA*) (reference iii). Specifically the Operational Framework (reference ii) notes that, "In limited cases, allowance proposals can be considered under SARA, provided the permitting requirements under section 73 are met and the allowance helps meet the goals of the Act" (p.2). Section 73 (3) in SARA (reference iii) provides the requirements to be met for a section 73 permit to be granted which states:

"*The agreement may be entered into, or the permit issued, only if the competent minister is of the opinion that*

(a) all reasonable alternatives to the activity that would reduce the impact on the species have been considered and the best solution has been adopted;

(b) all feasible measures will be taken to minimize the impact of the activity on the species or its critical habitat or the residences of its individuals; and

(c) the activity will not jeopardize the survival or recovery of the species." (SARA Section 73 (3))."

The Operational Framework (reference ii) also states that, "The options considered should include the possibility of not proceeding with the land- or resource-use activity." The Species at Risk Act Policies – Species at Risk Act Permitting Policy (or Permitting Policy) (reference iv) explains that in determining 73 (3) (a), "Among the reasonable alternatives identified, the solution that best advances conservation of the species must be adopted" (p. 7). Reference (iv) also provides clarification in relation to 73(3)(c), "Where a proposed activity would jeopardize the survival or

recovery of the species, a permit could be issued only if the activity were accompanied by actions to benefit the species such that the residual effects of the activity would not jeopardize its survival or recovery" (p. 8).

ECCC's previous response to NEB's S.79 notification letter (reference v) evaluates the Project effects on caribou and their habitat and whether NGTL's CHR&OMP aligns with the federal Recovery Strategy, ultimately concluding that it does not:

"…it is ECCC's view that NGTL has underestimated the Project's effects on potential critical habitat for boreal caribou in the Little Smoky Range, as well as the required offset to mitigate these effects. NGTL's approach is not consistent with the federal recovery strategy for boreal caribou nor with NGTL's own desired strategic outcomes for the CHR&OMP. ECCC is of the view that the proposed Project has the potential to add to the existing cumulative effects within the Little Smoky range, resulting in a potential increase in risk to the recovery of the local population."

ECCC agrees NGTL's offsetting ratio is insufficient to fully mitigate impacts of the Project to the Little Smoky caribou.

ECCC goes on to recommend changes to the final CHROMP to address these shortcomings.

Request:

a) Please describe ECCC's consideration and/or present assessment of the Proponent's Alternatives Assessment (see reference vii) and whether it includes all reasonable alternatives. In relation to this request, please also provide any preliminary assessment made by ECCC in relation to Project alternatives including "no Project" as an alternative.
b) Please provide ECCC's assessment/perspective on whether the Proponent's management plans (including the CHR&OMP) represent all "feasible measures" to limit impacts to the Little Smoky caribou herd.
c) Please described any benefits to the species ECCC anticipates from the Project based on your review of the ESA, Proponent Information Request Responses and or any communications with the Proponent.
d) Please outline how ECCC will be involved in reviewing revisions to NGTL's proposed CHR&OMP to ensure that the revised version is consistent with the federal recovery strategy and meets the standard required to allow for issuance of a permit under Section 73(3) of the SARA.
e) Please clarify what additional measures ECCC would use to protect boreal caribou critical habitat in the Little Smoky range, if the revised CHROMP does not adequately address ECCC's recommendations in reference (v).
f) Given the current context for the Little Smoky range, please provide your opinion about whether the addition to cumulative effects that

will occur if the NGTL 2021 expansion goes ahead represents a situation in which the survival or recovery of boreal caribou in the Little Smoky range is further jeopardized.

g) Please comment on the opportunity that will be provided for Indigenous groups to participate in the review and revision of the CHROMP.

ECCC Response:

a) As the regulator for the Project, the CER is responsible for determining whether all reasonable alternatives to the Project have been considered. In its April 18 2019 Written Submission to the NEB, ECCC stated that there should be no additional loss of habitat within the Little Smoky Range. Please also see ECCC's June 12 2019 response to ANSN IR 1.1 (f).

b) Please see ECCC's written letter of comment dated April 18 2019, Part A, Species at Risk Boreal Caribou and our Oct 9 2019 response to ANSN IR 2.1(f).

c) ECCC is unable to comment on any potential benefits from the Project to species, as the Project has not been approved and final Project Conditions have not been released. ECCC indicated in its April 18 2019 Written Submission that we could provide expert advice on the Final Caribou Habitat Restoration & Offset Measures Plan (CHR&OMP), once the proponent has provided it to the CER, if requested to do so by the regulator.

d) As the federal regulator for this Project, the CER is responsible for the development of mitigation and monitoring programs and Project conditions. ECCC will provide technical expertise on the final CHR&OMP if requested by the CER to do so.

e) ECCC will continue to implement the SARA and the federal Action Plan for boreal caribou, including finalizing the draft Canada-Alberta SARA s.11 Agreement for Woodland Caribou with the Government of Alberta. SARA provides for several processes, including stewardship and regulatory mechanisms, for the federal government to promote the conservation and protection of species at risk and their critical habitat on non-federal lands.

f) Please refer to the recommendations provided by ECCC to the CER about the potential cumulative effects of the Project in our April 18, 2019 Written Submission and in our June 12 2019 response to NEB IR 1.2 (Species at Risk Act Considerations).

g) The CER as the federal regulator for this Project is responsible for the development of mitigation and monitoring programs and Project conditions including determining who may review the

Final CHR&OMP. It is recommended that SCN refer this question to the CER.

Appendix III – Oral Cross-Examination Form A
Witness or Witness Panels and Issues to Be Addressed
Hearing Order GH-003-2018

The Party seating the witness or witness panel is to file this form with the Board and serve it on all other Parties ***by 4 pm Mountain Time, 25 April 2019***

Name of Party who will seat the witness or witness panel: **Samson Cree Nation**

Name of witness or witness panel (Panel A)	**Samson Cree Nation – Kyra Northwest**	
Location to be seated	Calgary, Alberta ☒	Grande Prairie, Alberta ☐
Witnesses' names and titles	Kyra Northwest, Traditional Land Use Lead for Samson Cree Nation	
Issue # from List of Issues	5, 7, 10, 11 and 12	
Specific sub-issue or subject area, if applicable, that will be addressed by the Witness Panel	n/a	