LKFN-10

Topic: Section 10.4.1.1 Change in Habitat

LKFN ORS Comment 1:

Section 10.4.1.1 indicates that indirect change in habitat for Boreal Caribou was evaluated using a 500 m buffer for anthropogenic (human) disturbances. We believe this buffer to be insufficient as scientific literature has shown that some roads can have a zone of influence impacting caribou up to 15 km (Plante, S., Dussault, C., Richard, J. H., & Côté, S. D. (2018). Human disturbance effects and cumulative habitat loss in endangered migratory caribou. Biological Conservation, 224, 129-143.).

Recommendation:
We request that the extent of indirect habitat change is evaluated with a range of uncertainty using various avoidance distances. Specifically, indirect change in habitat should be evaluated using a 500 m (low end) up to a 15,000 m (high end) buffer. We believe this analysis will provide a more accurate representation of potential project impacts to boreal caribou.

GNWT Response 1:

The buffer used for the ZOI is based on the Environment Canada (2011) study that found nearly 70% of the variation in caribou recruitment rates was explained by anthropogenic disturbances (polygonal and linear) plus a 500 metre (m) buffer (Environment Canada 2011). The study spanned 24 study areas across boreal caribou ranges (including NWT study areas) and tested a range of buffer sizes but found 500 m best explained this demographic parameter. As this approach is accepted by ECCC and the GNWT for management planning, no further assessment has been undertaken.

The paper by Plante et al. (2018) was a behavioural study based on data from two herds in Quebec and Newfoundland, which does not indicate demographic consequences. Among ZOI studies, the work completed by Environment Canada (2011) has a strong and applicable line of evidence for this Project due to the greater number of herds included in the study and the link to demographic consequences. Additionally, the Plante et al (2018) paper summarized study results on migratory caribou in the tundra and taiga biomes. Those results are likely not to be comparable to the behaviour of non-migratory boreal caribou interacting with the Project.

References:

Environment Canada. 2011. Scientific Assessment to Inform the Identification of Critical Habitat for Woodland Caribou (Rangifer tarandus caribou), Boreal Population, in Canada. 2011 Update. Canadian Wildlife Service, Ottawa, Ontario. 102 pp. (http://epe.lac-bac.gc.ca/100/200/301/environment_can/2011/scientific_assessment_inform-ef/CW66-296-2011-eng.pdf)

Plante, S., Dussault, C., Richard, J. H., & Côté, S. D. 2018. Human disturbance effects and cumulative habitat loss in endangered migratory caribou. Biological Conservation, 224, 129-143.

LKFN ORS Comment Follow-up:

Response is not sufficient because the proponent seems to aim at discrediting the Plante et al. (2018) study by suggesting that behavioural studies without a link to demographic consequences do not demonstrate a change in caribou recruitment rate. While the Plante et al. (2018) study may not address caribou recruitment rates directly, the topic of concern is not changes in caribou recruitment but rather, indirect habitat change from the development of the project. The proponent's suggestion that the results of Plante et al. (2018) study are not useful for predicting effects of the project on caribou due to different biomes is not supported by any evidence provided by the proponent. Given that all caribou in Canada belong to a single species, the proponent must provide scientific evidence indicating that caribou populations will respond differently to similar project disturbances within different biomes.

GNWT Response 2:

The assessment is focused on the consequences of disturbance-induced indirect habitat change to boreal caribou, specifically, how the Project might affect *population trends* through the combined effects of increased predation and avoidance on caribou survival and recruitment. As stated in the initial response, the Environment Canada (2011) study assessed a recruitment-disturbance relationship for boreal caribou using several disturbance buffers and found 500 m to be the most supported. It provides the best evidence and framework for the Project, and is accepted by ECCC (Environment and Climate Change Canada 2020) and the GNWT (Government of Northwest Territories 2022) for boreal caribou management planning. The statistical detection of spatial avoidance (e.g., Plante et al. 2018) does not help explain effects on caribou population trends, and requires a leap in inference from behavioural changes to population parameters (i.e., survival and recruitment), which is unsupported by the data and analyses used in such studies.

Furthermore, studies that have tested spatial avoidance and estimated large ZOIs for roads in northern latitudes occur in relatively isolated settings with few alternative sources of disturbance (e.g., Boulanger et al. 2012, 2021, 2024). In contrast, the Project is proposed to occur along a corridor of human settlements and other anthropogenic disturbances. Permanent settlements have the largest potential ZOIs, presumably due to the mortality risks associated with hunting (Johnson and Russell 2014). Results from the movement analysis of GPS-collared boreal caribou also suggest that caribou already avoid the Project's corridor due to existing habitat conditions, natural barriers, and disturbances (EDI Environmental Dynamics Inc. 2024).

Using ECCC's 500 m disturbance buffer allows for the assessment of indirect Project effects on caribou habitat selection and population parameters within the Project's landscape context and the GNWT's range planning framework. Applying a very large disturbance buffer around the Project is not supported by the available evidence, nor does it help evaluate potential population-level effects on boreal caribou.

References:

Boulanger, J., Kite, R., Campbell, M., Shaw, J., Lee, D., and Atkinson, S. 2024. Estimating the effects of roads on migration: a barren-ground caribou case study. Canadian Journal of Zoology :cjz-2023-0121. DOI: 10.1139/cjz-2023-0121

Boulanger, J., Poole, K.G., Gunn, A., Adamczewski, J., and Wierzchowski, J. 2021. Estimation of trends in zone of influence of mine sites on barren-ground caribou populations in the Northwest Territories, Canada, using new methods. Wildlife Biology 2021(1). DOI: 10.2981/wlb.00719. (https://bioone.org/journals/wildlife-biology/volume-2021/issue-1/wlb.00719/Estimation-of-trends-in-zone-of-influence-of-mine-sites/10.2981/wlb.00719.full)

Boulanger, J., Poole, K.G., Gunn, A., and Wierzchowski, J. 2012. Estimating the zone of influence of industrial developments on wildlife: a migratory caribou *Rangifer tarandus groenlandicus* and diamond mine case study. Wildlife Biology 18(2):164–179. DOI: 10.2981/11-045

EDI Environmental Dynamics Inc. 2024. Mackenzie Valley Highway Project: Inferring the Potential Barriers to Boreal Caribou Movement. Prepared for K'alo-Stantec Limited for use by the Government of Northwest Territories, Calgary, Alberta. 55 + 14 app pp.

Environment and Climate Change Canada. 2020. Amended Recovery Strategy for the Woodland Caribou (*Rangifer tarandus caribou*), Boreal Population, in Canada. *Species at Risk Act* Recovery Strategy Series. Environment and Climate Change Canada. 143 pp. (http://publications.gc.ca/collections/collection_2021/eccc/En3-4-140-2020-eng.pdf)

Environment Canada. 2011. Scientific Assessment to Inform the Identification of Critical Habitat for Woodland Caribou (*Rangifer tarandus caribou*), Boreal Population, in Canada. 2011 Update. Canadian Wildlife Service, Ottawa, Ontario. 102 pp. (http://epe.lac-bac.gc.ca/100/200/301/environment_can/2011/scientific_assessment_inform-ef/CW66-296-2011-eng.pdf)

Government of Northwest Territories. 2022. Guidelines for Exploration and Development Projects in Boreal Caribou Habitat in the Northwest Territories (DRAFT). 74 pp. (https://www.enr.gov.nt.ca/sites/enr/files/resources/nwt_caribou_guidelines_bilingual_feb24_final_2_2_0.pdf)

Johnson, C.J. and Russell, D.E. 2014. Long-term distribution responses of a migratory caribou herd to human disturbance. Biological Conservation 177(2014):52–63. DOI: http://dx.doi.org/10.1016/j.biocon.2014.06.007

Plante, S., Dussault, C., Richard, J.H., and Côté, S.D. 2018. Human Disturbance Effects and Cumulative Habitat Loss in Endangered Migratory Caribou. Biological Conservation 224:129–143. DOI: 10.1016/j.biocon.2018.05.022

LKFN-12

Topic: Section 18.8 Follow-up and Monitoring

LKFN Comment 1:

Section 18.8 describes the invasive plant monitoring plan with monitoring occurring once per year during construction, one inspection in the year following construction, and one inspection five years into project operations. The plan also indicates that invasive plants will be managed with mowing.

We believe this monitoring plan to be very insufficient. Invasive plants such as forbs can have significantly different flowering timeframes, with some flowering in the early spring to others flowering in the fall. With only one inspection occurring a year, there is significant potential for invasive plants to not be detected depending on the flowering of plants during monitoring. Additionally, invasive plant management through mowing is not an adequate strategy for managing invasive plants as invasive plants are often more adapted to disturbance than native plants. As a result, mowing may actually increase the presence of invasive plants and decrease the cover of native plants.

LKFN Recommendation:

The proponent must develop a more robust invasive plant monitoring and management plan that accounts for identification timeframes of invasive plants and uses an invasive plant removal strategy that is more effective than mowing.

GNWT Response 1:

As indicated in Section 18.4, the GNWT is aware of the potential establishment and spread of invasive species which could result from the Project and is committed to invasive alien plant species monitoring and management.

Periodic monitoring by the GNWT, with community involvement (e.g., Guardians), is proposed to help identify the location and distribution of invasive alien plant species. As was done for the Tłı̨chǫ Highway, a baseline rare and alien invasive plant survey will be conducted prior to construction of each segment of the highway. Further surveys will be completed at one year, five years and ten years following completion of construction. Monitoring data will be used by the GNWT, with input from appropriate affected parties, to develop appropriate management actions.

Mowing is a well-established and effective control method for invasive species along highway embankments in the NWT and throughout Canada (Government of British Columbia 2010; Government of Saskatchewan n.d.). Mowing is the standard practice for invasive species control, woody vegetation control, and maintenance of line of site for highways in the NWT (GNWT 2010). Mowing will be conducted once every three years and as needed during the growing season.

Other control options are herbicide application, hand removal of plants, bio-control agents and competitive seeding or planting. Herbicide application can be very effective at invasive species control; however, herbicide can have unintentional effects on desirable plant species, soil and water microorganisms, and wildlife including amphibians and birds (US EPA 2024). Highway embankments are usually sloped and herbicide may migrate downhill outside of the highway embankment affecting adjacent natural habitats including wetlands, watercourses and riparian areas altering native plant growth or abundance and persisting in the soils. Herbicide migration beyond

the highway embankment could also deter Indigenous use and collection of plant material. For these reasons herbicides will not be used for invasive species control for the Project.

Hand pulling of invasive species can be an effective control measure; however, it is labour intensive and best used for small, easily accessible areas. The control area must be visually searched, and each individual plant completely removed, including above and below ground parts. These actions are not feasible for a Project as large as MVH. In addition, hand pulling invasive species causes soil disturbance which can allow additional invasive species establishment.

References:

Government of British Columbia. 2010. Best Practices for Managing Invasive Plants on Roadsides. Ministry of Transportation and Infrastructure.

GNWT. 2010. Highway Maintenance Manual. Department of Transportation. Available at: https://www.inf.gov.nt.ca/sites/inf/files/resources/highway_maintenance_manual_1.pdf. Accessed March 2024.

Government of Saskatchewan. n.d. Right of Way Mowing Fact Sheet. Available at https://www.saskatchewan.ca/business/agriculture-natural-resources-and-industry/agribusiness-farmers-and-ranchers/programs-and-services/livestock-programs/ditch-mowing-and-hay-salvage. Accessed March 2024.

US EPA (United States Environmental Protection Agency). 2024. Herbicides. On-line resource. Available at: https://www.epa.gov/caddis/herbicides. Accessed March 2024.

LKFN Comment 2:

Follow-up and Monitoring is not sufficient. The proponent states that mowing is an effective control method for invasive species, while providing no evidence for this claim from within the scientific literature. Instead, the proponent has provided a list of references which includes manuals and brochures developed by provincial governments. The provinces that have made these resources available also have known invasive species issues along many of their highways. Furthermore, the proponent concludes that hand pulling of invasive species is an effective control measure but is not feasible for this project due to the size of the MVH. The current mowing strategy and lack of alternative options for invasive species management indicates to LKFN that the proponent is not interested in doing what it takes to ensure that invasive species do not establish and spread along the MVH.

GNWT Response 2:

The GNWT is mindful of the economic and ecological impacts from non-native invasive plant species. The GNWT surveys NWT highways for exotic plants every ten years (Oldham & Delisle-Oldham 2017), the next survey is expected in 2026. The current state of knowledge about invasive alien species is most up to date in the Northwest Territories Species Monitoring Infobase (GNWT 2024) and summarized in the NWT State of Environment Report every five years. The presence of invasive species will be further evaluated in the planned Project footprint prior to, during and after construction.

Limiting opportunities for non-native plant establishment is important (Langor et al. 2014) and recognized by the GNWT. Of the 72 non-native invasive plant species potentially occurring in the Project regional study area, 34 have been observed along the Mackenzie Valley Winter Road, which overlaps the planned Project route (Mackenzie Valley Highway Project Technical Data Report – Vegetation and Wetlands, Appendix B, Table B.1). Several of the non-native invasive species have also been documented elsewhere in the NWT (Porsild and Cody 1980; Northwest Territories Council on Invasive Species, Pests, and Pathogens 2023).

Mowing has been found to be effective at limiting non-native plant abundance, growth, and reproduction, including for several of the non-native plants observed along the Mackenzie Valley Winter Road (Najda et al. 1982; Woo et al. 1991; Cole et al. 2007; Basky 2016; Bajwa et al. 2019). Additionally, as previously indicated, mowing is a well-established control method for invasive species along highway embankments in the NWT and throughout Canada (Government of British Columbia 2010; Government of Saskatchewan n.d.). Mowing is the standard practice for invasive species control, woody vegetation control, and maintenance of line of site for highways in the NWT (GNWT 2010, NWT Council on Invasive Species, Pests, and Pathogens 2022 a & b). As such, proposed Project non-native invasive species control measures are in alignment with accepted standards for NWT and other provinces.

Timing and frequency influences mowing effectiveness, and repeated application (the GNWT conducts mowing approximately every three years along highway right-of-ways) generally improves effectiveness. Non-native plant abundance and distribution will be evaluated before and following mowing and alternative control measures, including hand removal of plants, application of bio-control agents, and competitive seeding or planting, will be considered if local infestations are identified that require additional control. This would also be considered if low growing non-native plants that are less likely to be affected by mowing, or some annual species (e.g., European stickseed [*Lappula squarrosa*] [Frick 1984], oxeye daisy [*Leucanthemum vulgare*] [Clements et al. 2004]) are identified. The locations and frequency of control measures will be adaptively determined based on post-construction monitoring observations, with measures adjusted accordingly.

References:

Bajwa, A.A., U. Zulfiqar, S. Sadia, P. Bhowmik, and B.S. Chauhan. 2019. A global perspective on the biology, impact and management of *Chenopodium album* and *Chenopodium murale*: two troublesome agricultural and environmental weeds. Environmental Science and Pollution Research. 26: 5357-5371.

Basky, Z. 2016. Identification of correct timing of mowing based on mowing in the most vulnerable phenological stages of ragweed. Plant Protection Institute, Centre for Agricultural Research, Hungarian Academy of Sciences. 455: 125-144.

Clements, D.R., D.E. Cole, S. Darbyshire, J. King, and A. McClay. 2004. The biology of Canadian Weeds. 128. *Leucanthemum vulgare* Lam. Canadian Journal of Plant Science. 84: 343-363.

Cole, D.E., J.R. King, D.A. Oyarzun, T.H. Dietzler, and A.S. McClay. 2007. Experiences with invasive plant management and ecology in Alberta. Canadian Journal of Plant Science. 87: 1013-1022.

Frick, B. 1984. The biology of Canadian Weeds. 62. *Lappula squarrosa* (Retz.) Dumort. Canadian Journal of Plant Science. 64: 375-386.

GNWT. 2010. Highway Maintenance Manual. Department of Transportation. Available at:

https://www.inf.gov.nt.ca/sites/inf/files/resources/highway_maintenance_manual_1.pdf. Accessed March 2024.

GNWT. 2024. NWT Species Monitoring Infobase. Environment and Natural Resources, Yellowknife, NT. Available at: https://www.gov.nt.ca/ecc/en/services/biodiversity/nwt-species-infobase.

Government of British Columbia. 2010. Best Practices for Managing Invasive Plants on Roadsides. Ministry of Transportation and Infrastructure.

Government of Saskatchewan. n.d. Right of Way Mowing Fact Sheet. Available at https://www.saskatchewan.ca/business/agriculture-natural-resources-and-industry/agribusiness-farmers-and-ranchers/programs-and-services/livestock-programs/ditch-mowing-and-hay-salvage. Accessed March 2024.

Langor, D.W., E.K. Cameron, C.J.K. MacQuarrie. A. McBeath, A. McClay, B. Peter, M. Pybus, T. Ramsfield, K. Ryall, T. Scarr, D. Yemshanov, I. DeMerchant, R. Foottit, and G.R. Pohl. 20132014. Non-native species in Canada's boreal zone: diversity, impacts, and risk. Environmental Reviews. 22: 372-420.

Najda, H.G. A.L. Darwent, and G. Hamilton. 1982. The biology of Canadian Weeds. 54. *Crepis tectorum* L. Canadian Journal of Plant Science. 62: 473-481.

Northwest Territories Council on Invasive Species, Pests, and Pathogens. 2023. A Field Guide to Alien Plants in the Northwest Territories. Northwest Territories Council on Invasive Species, Pests, and Pathogens, Yellowknife, NT. 67pp.

Northwest Territories Council on Invasive Species, Pests, and Pathogens a. 2022. White and Yellow Sweetclover Fact Sheet Available at https://nwtcispp.ca/sites/default/files/2022-02/Factsheet_White%20and%20Yellow%20Sweetclover_WR.pdf.

Northwest Territories Council on Invasive Species, Pests, and Pathogens b. 2022. Smooth Brome Fact Sheet Available at https://nwtcispp.ca/sites/default/files/2022-02/Factsheet_Smooth%20brome_WR.pdf.

Oldham & Delisle-Oldham 2017. Report on the 2016 survey of exotic plants along Northwest Territories highways. Yellowknife, NT: Department of Environment and Natural Resources, Government of the Northwest Territories. https://www.enr.gov.nt.ca/sites/enr/files/resources/report_on_the_2016_survey_of_exotic_plants_along_northwest_territories_h.pdf

Porsild, A.E. and W.J. Cody. 1980. Vascular plants of Continental Northwest Territories, Canada. National Museum of Natural Sciences, National Museums of Canada.

Woo, S.L., A.G. Thomas, D.P. Peschken, G.G. Bowes, D.W. Douglas, V.L. Harms, and A.S. McClay. 1991. The biology of Canadian Weeds. 99. *Matricaria perforata* Merat (Asteraceae). Canadian Journal of Plant Science. 71: 1101-1119.

LKFN-15

LKFN Comment 1:

In both the DAR and the Draft Wildlife Management and Monitoring Plan, the proponent often states that "closure and reclamation will promote re-establishment of vegetation". However, no indication of how vegetation reestablishment will occur is provided. This wording is vague and does not provide any details about the processes that will be used, or what species will be used.

LKFN Recommendation:

The proponent must provide indication of all vegetation re-establishment techniques, species, and provide measurable criteria for determining success.

GNWT Response 1:

As indicated in Section 18.4, the GNWT is committed to re-establishment of vegetation in portions of the Project Development Area as a mitigation measure for changes in wildlife habitat and vegetation species and community diversity. Vegetation re-establishment will be promoted through facilitated natural revegetation. Facilitated natural revegetation includes the following methods (GNWT 2013):

- Topsoil salvage and replacement during construction and reclamation to conserve both soil fertility and the natural seedbank
- Decompaction of compacted soils and leaving soils rough and loose
- Ongoing erosion and sediment control on slopes, embankments and other erodible areas
- Erosion and sediment control measures may include erosion control blankets, geotextile fabric, hydroseeding
- Shrub planting or willow staking may be done in targeted locations

The GNWT will inspect for revegetation success in applicable areas of the Project Development Area and abandoned sections of the Mackenzie Valley Winter Road to identify areas not adequately revegetating in accordance with permit conditions. The Project will implement remedial measures in areas with deficient revegetation, erosion or sedimentation issues. Remedial measures may include one or more of additional erosion and sediment control, hydroseeding, or willow staking.

Reference:

GNWT. 2013. Erosion and Sediment Control Manual. GNWT – Department of Transportation

LKFN Comment 2:

General Comment about the DAR and the Draft Wildlife Management and Monitoring Plan is not sufficient. The proponent has not meaningfully responded to our request for more information about the vegetation reestablishment plan, and continues to use general words such as "hydroseeding and willow staking". The proponent has not provided LKFN with a list of species that will be used in plantings or seedings as per our request. This leads LKFN to believe that the proponent does not have a clear plan for vegetation establishment and may consider planting and/or seeding non-native species.

GNWT Response 2:

The GNWT's preference is to promote re-establishment of natural vegetation, rather than seeding or planting. This can be done by salvaging and replacing topsoil, de-compacting compacted soils, leaving soils rough and loose, and mulching and windrowing cleared vegetation. Planting of willow stakes (willow staking), or seeding may be needed in specific areas, where natural re-establishment of vegetation is inhibited by susceptibility to erosion, in accordance with best management practices in the GNWT Department of Transportation (DOT) Erosion and Sediment Control Manual (GNWT 2013). The GNWT DOT Erosion and Sediment Control Manual was developed using guidance from other Canadian provinces and such management practices have proven effective at re-establishing vegetation adjacent to roads. Following the Northern Land Use Guidelines, Camp and Support Facilities (GNWT 2015), the GNWT resource management officer and revegetation specialists will be contacted for further advice on revegetation measures.

Where needed to address erosion, willow staking with locally harvested native willow species, and seeding using plants native to the Northwest Territories will be considered. The species to be used will consider the site-specific conditions (soil, moisture, aspect, slope, etc.) and the commercial availability of seed. Specific locations within the Project Development Area that may require staking/seeding will be identified during detailed design. Proposed erosion control methods involving staking or seeding will be described in more detail as part of regulatory approvals. A site-specific seeding/planting plan will include details of the seed mixes, willow harvest areas, application methods and schedule.

A list of vegetation re-establishment plant species cannot be provided. The GNWT does not have lists of preferred reclamation species for the NWT, as such a list does not exist. As previously noted, if local seeding is needed, the species selected for use will be guided by local and regional vegetation conditions, site concerns (e.g., erosion), and commercial availability.

References:

GNWT (Government of the Northwest Territories). 2013. Erosion and Sediment Control Manual. GNWT – Department of Transportation. 520 pp.

GNWT. 2015. Northern Land Use Guidelines, Camp and Support Facilities. 32 pp.

Comment 20 Topic: Section 5.4.14.4 (Procurement Policy)

Original Reviewer (LKFN) Comment (February 28, 2024):

The proponent has provided extremely limited information on its procurement policy and has indicated that specific procurement plans will be determined closer to the time of tender. Procurement opportunities for the construction and operation of the MVH will be a major potential economic benefit for impacted communities along the ROW and thus should reasonably be considered a potential mitigation/accommodation of impacts to Treaty and Aboriginal rights from the Project. This is particularly true for LKFN which has very substantial capacity to undertake the construction work through our economic development corporation, Nogha Enterprises Inc. To ensure appropriate and commensurate benefits to the Nations impacted by the Project, the Proponent must develop a conceptual procurement policy at this time for review and consideration by impacted Nations.

Original Reviewer (LKFN) Recommendation:

The Proponent must develop a conceptual procurement policy for the MVH. LKFN requests that the proponent work with our Nation and other interested Nations to design the policy in a manner that ensures equitable, commensurate benefits to the Nations impacted by the Project. Note that this policy should include details on hiring practices to ensure that barriers to hiring members of impacted Indigenous Nations are eliminated.

Proponent Response (April 22, 2024):

In section 5.4.14.4, the development of procurement plans are mentioned at a high level. These plans will be developed as we approach the construction phase of the project, when more details pertaining to final design and construction are available. We can confirm that all contracting activities will be conducted in accordance with the *Financial Administration Act*, *Government Contract Regulations*, and the GNWT procurement Guidelines. What the GNWT has committed to is the creation of the Mackenzie Valley Highway Corridor Working Group one year prior to the start of construction (Commitment 216). A Training and Employment sub-working group will be formed (Commitment 218) to enhance the positive effects from the Project. The Training and Employment sub-working group will support the implementation of a Contractor Training and Employment Plan (Commitments 219 and 220). Further details on the full breadth of the proposed mitigations to address procurement, training, and employment is detailed in the Community Readiness Strategy (Section 9.16.2.2).

Follow-up Comment from LKFN (July 14, 2024):

Comment 20: See attached letter Re: Redknife Project, the content and questions of which are relevant here as well – Board response is not satisfactory given LKFN's recent experience related to contracting and procurement.

Draft Response to LKFN (September 27, 2024):

The GNWT thanks LKFN for providing additional comments for consideration related to contracting and procurement concerns. These will be considered by the GNWT along with other comments and suggestions that have been and will be provided by Indigenous governments, Indigenous organizations, communities and other parties.

At this time, GNWT has made several commitments related to local employment, contracting and procurement. In collaboration with communities in the Local Assessment Area (LAA) and Regional Assessment Area (RAA), the GNWT has committed to developing the Community Readiness Strategy (summarized in Section 9.16.2) which includes a Training and Employment Sub-Working Group. This Sub-Working Group (Section 9.16.2.2) will develop and implement a Contractor Training and Employment Plan (Section 9.16.2.2.1) with communities that will detail the overall approach to education, training, and employment readiness in the LAA and RAA that are intended to increase local and regional employment opportunities during construction and operations. This is intended to include collaborative efforts to identify employment opportunities and availability of labour to ensure that communities and residents have time and ability to prepare for opportunities. In addition to this, the GNWT will also require as a condition of construction contracts that contractors prepare their own Contractor Training and Employment Plans that:

- Outlines how they will increase on-the-job training for LAA and RAA residents.
- Demonstrates through reporting that LAA and RAA residents and Indigenous people are being trained.
- Demonstrates how local and Indigenous labour and businesses will be sourced.
- Commits to cultural awareness and anti-racism training to mitigate potential adverse effects associated with presence of non-NWT/non-LAA/RAA workers.
- Details how contractors will communicate and collaborate with LAA and RAA community governments and Indigenous organizations regarding their involvement in construction and operation.

The Social Monitoring and Adaptive Management Sub-Working Group (Section 9.16.2.3) will work to monitor all plans and commitments that are part of the Community Readiness Strategy. The need for additional measures (e.g. resources, programs) will be identified as per the project's adaptative management framework.

In addition to this adaptive management approach, the GNWT is continuing to engage with affected Indigenous governments, Indigenous organizations and communities in the LAA and RAA to discuss the proposed Community Readiness Strategy and associated plans. This includes discussions with LKFN. Some preliminary conversations with community representatives have already taken place and are anticipated to continue. While the Strategy and associated plans are not intended to be finalized as part of the environmental assessment (EA) process, any updates to the proposed approach and components of the Community Readiness Strategy that may be appropriate or required as a result of community engagement will be reflected in updated material filed with the Review Board at the appropriate time before the EA process concludes.

LKFN-21

Topic: Section 16.6.1 (Significance of Residual Effects - Water and Sediment Quality)

LKFN Comment 1:

The Proponent has drawn the conclusions in their effects assessment on water and sediment quality that the residual effects will be "not significant". LKFN notes that this assessment is only accurate under the assumptions made by the Proponent in the DAR around the successful implementation of the project and on many detailed design considerations which will be developed following the approval of the Project's Environmental Assessment. This gap between the assumptions made at the environmental assessment stage and the detailed design stage leave LKFN in a position of being required to provide our support for a project prior to understanding all the details of the potential impacts of the Projects to our Treaty and Aboriginal rights and interests.

Recommendation:

LKFN requests that the proponent provide a brief summary of the key variables which will determine the success of their water and sediment quality effects assessment, how they plan to mitigate these potential impacts and the role that LKFN can play in monitoring and mitigating potential impacts to water and sediment quality.

GNWT Response 1:

As described in a separate response (LKFN-28), the assessment of potential effects of the Project on water and sediment quality was a qualitative evaluation based on the implementation of standard mitigation measures (Section 16.4) and relevant management plans such as the Erosion and Sedimentation Control Plan (ESCP), Permafrost Protection Plan, and Quarry Development Plans (Volume 5). Many of these proposed mitigation measures are standard conditions included in water licences by regulators in the Mackenzie Valley and are otherwise best management practices reflected in guidelines such as the GNWT Land Use Guidelines Series (GNWT, 2015 a,b) and DFO codes of practice (DFO, 2022 a,b,c). They are not dependent on the status of the application (e.g., environmental assessment vs. detailed design stages), as they are applicable and effective for the protection of freshwater and sediment quality regardless of the design development of the Project. The final design of the highway and watercourse crossings may change the type or location of specific watercourse crossing structures within the parameters described in Chapter 5 (design basis and design criteria), but with high confidence in the effectiveness of mitigations, this will not change the overall conclusions of the assessment.

To help confirm the conclusions of the assessment, surface water monitoring will occur throughout the construction phase. Measurements and visual inspections of turbidity will occur upstream and downstream of culvert installations during and after removal of sedimentation control measures. Details pertaining to the monitoring methodology during culvert installation are provided in the ESCP (Volume 5; ESCP Section 3.1). The GNWT is committed to ongoing engagement with Indigenous Governments and Indigenous Organizations, and other affected parties during advancement of project design and planning. Section 2.3 includes commitments relevant to engagement and monitoring, as follows:

1. The GNWT is open to and interested in discussing with Indigenous Governments, Indigenous Organizations, and other affected parties how best to integrate community-based monitoring into the Project, including LKFN.

2. The GNWT is open to discussions with Guardian Programs to explore how to best implement them for the Project. Environmental Monitors will be employed as part of the contracting of the Project.

References:

DFO (Fisheries and Oceans Canada). 2022a. Measures to Protect Fish and Fish Habitat. Government of Canada. Available at: https://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures-eng.html. Accessed March 2024.

DFO (Fisheries and Oceans Canada). 2022b. Code of Practice: Culvert Maintenance. Government of Canada. Available at: https://www.dfo-mpo.gc.ca/pnw-ppe/codes/culvert-maintenance-entretien-ponceaux-eng.html. Accessed March 2024.

DFO (Fisheries and Oceans Canada). 2022c. Code of Practice: Ice Bridges and Snow Fills. Government of Canada. Available at: https://www.dfo-mpo.gc.ca/pnw-ppe/codes/ice-bridges-ponts-glace-eng.html Accessed March 2024.GNWT. 2015a. Northern Land Use Guidelines, Access: Roads and Trails. GNWT Department of Lands, Yellowknife, Northwest Territories.

GNWT. 2015b. Northern Land Use Guidelines: Pits and Quarries. GNWT Department of Lands, Yellowknife, Northwest Territories.

LKFN Comment 2:

LKFN requires a commitment to incorporate LKFN Guardians into monitoring water and sediment quality.

GNWT Response 2:

Community-based monitoring programs, including Guardians, will play an important role in environment monitoring for the Project. As noted in Section 23.5.1 (Indigenous Participation in Monitoring), and elsewhere in the DAR, the GNWT has committed to discussing with LKFN, and other Indigenous Governments, Indigenous Organizations, and other affected parties how best to integrate community-based monitoring (including Guardians) into the Project, as environmental monitoring is a required and important part of the Project.

LKFN-28

Topic: Appendix 16A (Surface Water and Sediment Quality Technical Data Report)

Comment:

The surface water quality technical report does not include the surface water quality data collected over the years of sampling.

Recommendation:

Please provide the surface water quality data for LKFN review and consideration**.**

GNWT Response:

Sources of historical surface water quality data from several monitoring programs within the Regional Study Area (RSA) area are referenced in the Technical Data Report (Volume 4, Appendix 16A). These data are available from the following sources:

- GNWT Community-Based Monitoring Program (Mackenzie DataStream, 2024)
- Environment and Climate Change Canada (ECCC) National Long-term Water Quality Monitoring Data (ECCC, 2024; Mackenzie DataStream, 2024)
- Fisheries and Oceans Canada (DFO): *Bioassessment of streams along the Mackenzie River Valley, Canada, using the Reference Condition Approach: biological, habitat, landscape, and climate data* (Rempel and Gill (2011)
- Golder (2015): *Central Mackenzie Surface Water and Groundwater Baseline Assessment. Report 1: Technical State of Knowledge*
- Mackenzie Gas Project Environmental Impact Statement (EIS): *Biophysical Baseline Report for Water Quality* (EIS Volume 3, Section 6; IORVL, 2004)

In addition, compiled water quality data sourced from Water Resources, Indigenous and Northern Affairs Canada (INAC) for the Mackenzie Valley Pipeline were reviewed during the preparation of the TDR. These data may be requested from the GNWT (requests may be sent to Robin_Staples, Aquatic Quality Scientist, Environment and Climate Change (ECC), at Robin_Staples@gov.nt.ca, nwtwaterstrategy@gov.nt.ca).

The Mackenzie DataStream website is an open access data hub that provides compiled surface water quality data from numerous monitoring programs in the Mackenzie Valley, including the GNWT Community-Based Monitoring Program, long-term ECCC monitoring, and others (Mackenzie DataStream, 2024). Datastream may not include all monitoring data from these and other programs in the Mackenzie Valley, so it is recommended that data owners are contacted to confirm the completeness of the datasets on DataStream, or to request the direct sharing of data.

As described in a separate response (CANNOR-50), the GNWT acknowledges that the characterization of existing conditions is often used in the effects assessment process to evaluate the degree of project-related changes to water resources. This approach is often used when a project involves point source discharges (e.g., mine effluent) which can be modeled to quantitatively predict changes in surface water quality in the aquatic receiving environment. In this case, the project does not involve point source discharges from the highway or its related infrastructure. Because of this, it was determined that the development of a meaningful predictive model to assess potential changes in water quality due to non-point discharges along the highway was not practically feasible (and we are unaware of a precedence for such a model on this type of project). Despite the lack of a model to quantitatively assess changes in water quality from baseline, a review of the available baseline data was performed to determine if the data could inform the assessment of potential effects in a meaningful way. Ultimately, it was decided that the baseline data were not to be directly used in the effects assessment, and that a qualitative effects assessment was appropriate for the following reasons:

1. Due to a lack of a model for this type of project (i.e., with non-point source discharges), the baseline data could not, in effect, be used to quantitatively inform predictions of potential project-related effects.
2. Standard mitigations and best management practices were considered to be sufficient for the protection of water resources during the construction and operation of the highway. The rationale for this is the availability of numerous relevant and established mitigations specific to this type of project. These mitigations have been applied to other comparable projects (i.e., Inuvik to Tuktoyaktuk highway and Tłı̨chǫ All-Season Road; Hamlet of Tuktoyaktuk et al., 2011, MVEIRB 2018). Section 16.4.2.2 outlines standard mitigations proposed for the project and relevant project-specific management plans, such as the Erosion and Sedimentation Control Plan, Permafrost Protection Plan, and Quarry Development Plans. Many of the proposed mitigation measures are standard conditions included in water licenses by regulators in the Mackenzie Valley, and are otherwise best management practices reflected in guidelines such as the GNWT Land Use Guidelines Series (GNWT, 2015 a,b) and DFO codes of practice (DFO, 2022 a,b,c).
3. Due to the extensive mitigations considered in the assessment, it was determined that the conclusions of the effects assessment would likely not change if historical sampling data within the RSA, or within the Local Study Area (LSA) at site-specific watercourses, were included the effects assessment. Note the Technical Data Report (TDR) for Surface Water and Sediment Quality (Volume 5) summarizes natural influences on water quality and existing concentrations of TSS within the RSA (Section 3.2.1 of the TDR), as well as anthropogenic influences of water quality within the RSA (Section 3.2.2 of the TDR).
4. Water quality monitoring will occur during the construction of the highway to confirm the assumptions made in the effects assessment. Turbidity measurements and visual inspections of water quality will occur upstream and downstream of culvert installations during and after removal of sedimentation control measures. Details pertaining to the monitoring methodology during culvert installation are provided in the Erosion and Sedimentation Control Plan (Volume 5).

The GNWT is committed to ongoing engagement with Indigenous Governments, Indigenous Organizations, and other affected parties during advancement of project design and planning. The GNWT is open to further discussions with the Indigenous Guardians Program to explore water quality monitoring for the Project.

Hyperlinks to the above data sources reviewed during the preparation of the DAR are provided in the references listed below.

References:

DFO (Fisheries and Oceans Canada). 2022a. Measures to Protect Fish and Fish Habitat. Government of Canada. Available at: https://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures-eng.html. Accessed March 2024.

DFO (Fisheries and Oceans Canada). 2022b. Code of Practice: Culvert Maintenance. Government of Canada. Available at: https://www.dfo-mpo.gc.ca/pnw-ppe/codes/culvert-maintenance-entretien-ponceaux-eng.html. Accessed March 2024.

DFO (Fisheries and Oceans Canada). 2022c. Code of Practice: Ice Bridges and Snow Fills. Government of Canada. Available at: https://www.dfo-mpo.gc.ca/pnw-ppe/codes/ice-bridges-ponts-glace-eng.html. Accessed March 2024.

ECCC (Environment and Climate Change Canada). 2024. National Long-term Water Quality Monitoring Data. Government of Canada. https://open.canada.ca/data/en/dataset/67b44816-9764-4609-ace1-68dc1764e9ea. Accessed March 2024.

GNWT. 2015a. Northern Land Use Guidelines, Access: Roads and Trails. GNWT Department of Lands, Yellowknife, Northwest Territories.

GNWT. 2015b. Northern Land Use Guidelines: Pits and Quarries. GNWT Department of Lands, Yellowknife, Northwest Territories.

Golder. 2015. Central Mackenzie Surface Water and Groundwater Baseline Assessment. Report 1: Technical State of Knowledge. Report Number: 1401835 Final Report 1. May 21, 2015. Available at : https://www.nwt-esrf.org/sites/nesrf/files/2016-10/Central%20Mackenzie%20Water%20and%20Groundwater%20Baseline%20Assessment%20Report%201%20-%20Technical%20State%20of%20Knowledge.pdf. Accessed March 2024.

Hamlet of Tuktoyaktuk, Town of Inuvik, and Government of Northwest Territories. 2011. Environmental Impact Statement for Construction of the Inuvik to Tuktoyaktuk Highway, NWT. EIRB File No. 02/10-05; EBA file: V23201322.006.

IORVL (Imperial Oil Resources Ventures Limited). 2004. Environmental Impact Statement. Volume 3: Biophysical Impact Assessment. Section 6 Water Quality. Available at: https://apps.cer-rec.gc.ca/REGDOCS/Item/View/3892241. Accessed March 2024.

Mackenzie DataStream. 2024. Accessed online March 2024 at: https://mackenziedatastream.ca/en/.

MVEIRB (Mackenzie Valley Environmental Impact Review Board). 2018. Report of Environmental Assessment and Reasons for Decision, GNWT Tilcho All-Season Road Project. EA1617.01. March 29, 2018.

Rempel, L.L. and G.J. Gill. 2011. Bioassessment of streams along the Mackenzie River Valley, Canada, using the Reference Condition Approach: biological, habitat, landscape, and climate data. Available at https://waves-vagues.dfo-mpo.gc.ca/library-bibliotheque/344429.pdf. Accessed March 2024.

LKFN Comment 2:

Not Addressed. LKFN will email Robin Staples for data. Note that impacts to water quality must have some quantitative assessment.

GNWT Response 2:

For the reasons provided in the original response to LKFN-28, the GNWT does not intend to quantitatively assess the potential for project-related changes to water and sediment quality from non-point source discharges, as there is no model to quantitatively predict such changes. The GNWT, in the assessment, conservatively assumes that if not mitigated, changes to water quality could happen. The GNWT then goes on to identify standard mitigation measures and best management practices (as described in the DAR) that are considered to be sufficient for these types of projects to prevent or reduce potential project-related effects to surface water and sediment quality. To specifically address potential changes to water quality from in-stream construction, water quality monitoring at culvert installation sites will be used to quantitatively measure potential project-related changes to surface water quality relative to upstream reference sites during construction and mitigative actions taken as appropriate, if required. Proposed water quality monitoring during culvert installation is described in detail in the Erosion and Sediment Control Plan (ESCP; DAR Volume 5). The proposed monitoring of turbidity in relation to total suspended solids in water is commonly required for temporary in-stream works such as culvert installations, including past and ongoing road and highway improvement projects in the NWT.

As per the ESCP, monitoring results will be used to immediately inform the need for adaptive management and additional site-specific mitigations should water quality at monitoring sites exceed predetermined action levels [e.g., changes in turbidity greater than 8 nephelometric turbidity units (NTU) relative to reference sites]. Turbidity is a useful indicator of changes in water quality as it can be instantly and quantitatively measured in situ, allows for rapid adaptive management responses, and can be used as a proxy to indicate changes in suspended sediments associated with in-stream construction activity. The ESCP and results of monitoring will be reviewed annually, with input from Indigenous Governments, Indigenous Organizations, and specific other affected parties, as appropriate, during the construction of the Project to capture lessons learned from the previous year's construction and monitoring activities for consideration of any ongoing improvements in the ESCP. Following construction, the ESCP will be reviewed every 5 years.

LKFN-30

Topic: Appendix 17A Effects of erosion and sedimentation on sensitive species (e.g. Arctic grayling)

Comment:

GNWT will prepare an Erosion and Sedimentation Control Plan (ESCP) to mitigate the effects of erosion/sedimentation on watercourses from the Project. These mitigation measures are standard protocols that do not account for the specific sensitivities of watercourses in the Project LAA. For example, sensitive species, such as Arctic grayling are found in Prohibition Creek, Four Mile Creek and Twelve Mile Creek (Appendix 17A, Table 4.2).

Recommendation:

LKFN requests that the ESCP be updated to prepare specific information on ESC measures to mitigate/manage the risks of sedimentation at these crossings.

Response:

A draft Erosion and Sedimentation Control Plan (ESCP) is included in Volume 5 and will be finalized prior to construction. The ESCP provides mitigation measures applicable during project construction and operations and maintenance activities. The mitigation measures in the ESCP are applicable to all watercourses for the protection of all fish species and their habitat from project effects, including sensitive species such as Arctic grayling. The ESCP includes the most current and effective mitigations for erosion and sedimentation, and is based on industry best practices and guidelines (e.g., DFO, 2019, 2022; GNWT, 2013; GNWT, 2015a,b,c). Monitoring of the mitigation measures will be conducted to ensure they are operating as planned and corrective measures taken if required. Additional site-specific mitigation may be applied based on recommendations by the environmental monitor or a qualified aquatic environmental specialist.

References:

DFO (Department of Fisheries and Oceans). 2019. Interim Codes of Practice. Available at: https://www.dfo-mpo.gc.ca/pnw-ppe/practice-practique-eng.html. Accessed June 2023.

DFO. 2022. Standards and Codes of Practice. Available at: https://www.dfo-mpo.gc.ca/pnwppe/practice-practique-eng.html. Accessed June 2023.

GNWT (Government of the Northwest Territories). 2013. Erosion and Sediment Control Manual.

GNWT. 2015a. Northern Land Use Guidelines, Camp and Support Facilities. Available at: https://www.lands.gov.nt.ca/sites/lands/files/resources/nlug_camps_2015_english_16_sept_2015.pdf. Accessed June 2023.

GNWT. 2015b. Northern Land Use Guidelines: Pits and Quarries. GNWT. Yellowknife, NT. Available at: https://www.lands.gov.nt.ca/sites/lands/files/resources/nlug_-_pits_and_quarries_-_16_september_2015.pdf. Accessed August 2020.

GNWT. 2015c. Northern Land Use Guidelines: Roads and Trails. GNWT. Yellowknife, NT. Available at: https://www.lands.gov.nt.ca/sites/lands/files/resources/nlug_roadstrails_2015_english_16_sept_2015.pdf. Accessed August 2021.

LKFN Comment 2:

LKFN requested site-specific mitigation plans for 4 sensitive crossings where Arctic grayling may be present. The proponent has provided a non-answer based on using best practices. Suggest a much more detailed response, including specific measures, along with detailed plans/diagrams for erosion and sediment control measures at Prohibition Creek, Four Mile Creek and Twelve Mile Creek. It would be OK for this information to be provided at a later phase of the project, once more detailed design is conducted.

GNWT Response 2:

The referenced Prohibition Creek, Four Mile Creek and Twelve Mile Creek, as well as other major watercourses between Wrigley and Norman Wells, are crossed by existing bridge structures. These existing structures include permanent erosion control measures such as rip rap to mitigate for sedimentation into water. There are no new structures planned to be built at these crossings as part of the Project. The Project will make use of these structures during construction for transporting equipment and materials. The mitigation measures in the Erosion and Sedimentation Control Plan (which also makes reference to the GNWT Erosion and Sedimentation Control Manual (GNWT, 2013) are considered to be effective at addressing erosion and sedimentation from project activities, which includes working near water.

At other, smaller, watercourse crossings along the route, site-specific erosion control measures, such as rip-rap, will be incorporated into the design of crossing structures, and will be submitted to regulators for approval prior to construction. As previously stated in the GNWT's earlier response to the comment, monitoring of the mitigation measures will be conducted to ensure they are operating as planned and corrective measures taken if required. Additional site-specific mitigation may be applied based on recommendations by the environmental monitor, or a qualified aquatic environmental specialist depending on existing conditions at the time of construction.

LKFN-33

Topic: Section 17.4 Assessment of Residual Effects on Fish and Fish Habitat

Comment:

GNWT states that flow velocity (m/s) in culverts will meet fish passage requirements for fish species present (Table 17.8). However, it is not clear on what basis the determination of species present at each crossing will be made. If it is based exclusively on baseline sampling, that would likely not represent a comprehensive list of possible species present, as that sampling was limited to a single sampling event during later summer 2020 (for Dehcho) and fall 2021 (for Sahtu).

Recommendation:

LKFN requests that GNWT provide a summary table for all crossings that includes the list of potential fish species present, and the minimum/maximum flow velocities that will be required.

Response:

Hydrotechnical assessments for watercourses in the Dehcho Region and Sahtu Region have been conducted along the preliminary highway alignment route (Tetra Tech 2021; Tetra Tech 2022) (Volume 3, Section 17.2.2). The referenced reports are provided with this response (Attachments LKFN-33A and LKFN-33B). Results of these assessments will be used to inform culvert design and sizing. Fisheries and Oceans Canada has developed Swim Performance Online Tools (DFO 2023) to provide guidance for fish passage requirements for different fish species and size categories. Culverts will be designed to provide fish passage for the fish species and size category with the weakest swimming performance using the hydrotechnical data collected in the field and DFO's Swim Performance Online Tools. If fish species are not known for a watercourse or if the list of fish species in a watercourse cannot be determined, fish passage requirements will be based on the list of potential fish species which may occur based on professional judgement (using habitat information, stream size, and position in watershed) and the precautionary principle.

References:

DFO (Fisheries and Oceans Canada. 2023. Fish Performance Online Tools (SPOT). Available at https://fishprotectiontools.ca/.

Tetra Tech. 2021. Mackenzie Valley Highway Dehcho Segment Hydrotechnical Assessments. Prepared for the Government of the Northwest Territories, Department of Infrastructure.

Tetra Tech. 2022. Mackenzie Valley Highway Sahtu South Segment Hydrotechnical Assessments. Prepared for the Government of the Northwest Territories, Department of Infrastructure.

LKFN Comment 2:

Given the lack of robust baseline sampling, LKFN agrees that the precautionary principle should be applied and that culverts should be sized to accommodate the swim speeds of species that are potentially present. This should be applied for all crossings.

GNWT Response 2:

The GNWT is of the opinion that fish and fish habitat and hydrotechnical assessments that have been and will be completed are appropriate, and that the design approach, as based on applicable guidelines, is protective of fish species potentially present. If fish species are not known for a watercourse or if the list of fish species in a watercourse cannot be determined, fish passage requirements will be based on the list of potential fish species which may occur based on professional judgement (using habitat information, stream size, and position in watershed) as well as the precautionary principle.

LKFN IR-13

Preamble from the Mackenzie Valley Environmental Impact Review Board (Review Board):
LKFN recently learned that archaeology, fish habitat research and bathymetric studies will be occurring in August 2024. LKFN was not notified about this work until the week prior; additionally, LKFN was not offered any opportunities to participate as Guardians or Monitors for this work. LKFN has extensive historical and ancestral uses within the proposed Study Area. It is a significant oversight for the proponent to not approach LKFN with any opportunities to participate in monitoring this work; LKFN will not be confident that the work has been done respectful of our Nation or to LKFN's standards. LKFN requires the GNWT-INF to offer opportunities for LKFN monitors during all fieldwork.

Request from the Review Board:

a. LKFN requests the GNWT-INF commit to hiring LKFN monitors for the entirety of project activities.

b. LKFN requests clarity on how it will be notified on upcoming monitoring opportunities, including how much how much advanced notice will be provided to the Nation and who the key contacts are that the GNWT has from LKFN to provide this notice to.

Response from the Government of the Northwest Territories:

a. The Government of the Northwest Territories (GNWT) notes that the information in the preamble is related to field studies that are not included or assessed in the Developer's Assessment Report (DAR), but rather to field work that GNWT is undertaking to inform the design and regulatory phases of the highway. The information requested does, however, relate to the assessed project.

   Parties are engaged based upon their proximity to the project activity. The field work carried out included archaeological work, fish and fish habitat assessments, as well as lake bathymetry studies, which were localized to the area approximately between Wrigley and KM 791 on the proposed MVH alignment. Pehdzeh Ki First Nation , as an Indigenous government that is spatially in the local assessment area (LAA) of the project, was therefore approached to seek employees for the field studies. The field program required two wildlife monitors and one assistant for archaeological work. The staff for these positions were hired from Pehdzeh Ki First Nation as the scope of work did not require more personnel. Should there be similar needs in the future that require a larger workforce, the GNWT is committed to discussing with LKFN how best to integrate LKFN monitors in the Project work. However, the GNWT is unable to commit to hiring LKFN monitors for all project activities.

b. The GNWT suggests that the ongoing monthly bilateral working level meetings currently occurring between GNWT and LKFN can be used as a forum to further this discussion and for LKFN to gain information on future monitoring opportunities.

   The GNWT notes that the construction phase will involve a larger workforce for a variety of roles, which will provide more opportunities for LKFN to participate in project-related employment.

   As outlined in the DAR, the GNWT is proposing to advance the development of the Corridor Working Group and related sub-working groups, such as the Training & Employment Sub-Working Group (See

DAR Section 9.16) a minimum of one year prior to construction. The purpose of this action is to ensure that communities are able to benefit from the training, employment, and business opportunities associated with the project, as well as adapt or prepare for other project impacts. As part of the working group LKFN would receive information through their designated working group member(s).