Mackenzie Valley Highway Project EA

Consolidated Comments from Federal Departments on the Draft Terms of Reference (ToR)

(FOR SUBMISSION TO MVEIRB – December 10, 2013)

Department-# (ex. EC-1)	ToR Reference	Comment / Rationale	Recommendation / Suggested Text
NRCan-1	***General***	**SUBJECT: Permafrost (including terrain sensitivity/stability and hazards)** The following were considered in the permafrost review: • Draft terms of reference EA1213-02 Mackenzie Valley Highway • Project Description Report for the Construction of the Mackenzie Valley Highway (Government of the Northwest Territories) • The ToR for the proposed Inuvik to Tuktoyaktuk highway issued by the Inuvialuit Environmental Impact Review Board (consulted for background information). The review considered components and issues associated with the physical environment focussing on terrain sensitivity/stability and hazards including those associated with permafrost conditions. The review also considered issues related to the effects of climate change on physical environmental processes and its influence on project performance and related impacts. The draft ToR were generally found to be fairly complete with respect to the (permafrost-related) sections reviewed. NRCan does however have a few comments and suggestions for improvements. These are provided in this document and keyed to the specific sections of the ToR.	

NRCan-2	***4.1 Impact Assessment Steps***	**SUBJECT: Permafrost (including terrain sensitivity/stability and hazards)** The intent of NRCan's suggested text is to increase clarity and ensure that information provided in the DAR is adequate for technical review and ensures an efficient process. The intent is not to be prescriptive but to ensure that sufficient information is provided to enable the MVEIRB to assess the validity of the conclusions, provided in the DAR, regarding environmental impacts.	It is suggested that an additional statement be added describing the level of detail that is required in the impact assessment. Specifically, NRCan suggests that the ToR require the Developer to clearly describe the methods utilised in the impact assessment to allow reviewers to fully understand how the conclusions were reached (i.e. provide a clear description of the steps from the baseline data to the identification of the potential impact and subsequent needs for mitigation and determination of residual impacts). The description of the analysis conducted should include any assumptions made as well as any data deficiencies or uncertainties in the impact predictions.
NRCan- 23	***5.1 Biophysical information requirements***	**SUBJECT: Permafrost (including terrain sensitivity/stability and hazards)** The intent of NRCan's suggested text is to increase clarity and ensure that information provided in the DAR is adequate for technical review and ensures an efficient process. The intent is not to be prescriptive but to ensure that sufficient information is provided to enable the MVEIRB to assess the validity of the conclusions, provided in the DAR, regarding environmental impacts.	NRCan suggests a general statement be added to require a description of all regional existing/available data utilized (including sources) in developing the environmental baseline. Where the Developer has collected data through their own field investigations, it is suggested that the ToR request a description of the methodology used and the accuracy and precision of the measurements. The Developer should also describe any analysis conducted to utilize data from outside the study region to characterize the baseline environmental conditions within the study region. This would include a description of any models etc. (including assumptions and accuracy) utilized to characterize baseline conditions where local measurements are not available. NRCan suggests that the ToR also include a requirement to describe any deficiencies in the baseline data and how they have been dealt with as well as additional field investigations required to support permitting and final design stages.
NRCan – 4	***5.1.1 Terrain, geology, soils and permafrost***	**SUBJECT: Permafrost (including terrain sensitivity/stability and hazards)** The intent of NRCan's suggested text is to increase clarity and ensure that information provided in the DAR is adequate for technical review and ensures an efficient process. The intent is not to be prescriptive but to ensure that sufficient information is provided to enable the MVEIRB to assess the validity of the conclusions, provided in the DAR, regarding environmental impacts.	Last 2 bullets (pg 14) – It is suggested that this list also include an assessment of how future climate change may affect permafrost conditions such as ground temperature and active layer thickness.

NRCan – 5	***5.1.4 Water quality and quantity***	**SUBJECT: Permafrost (including terrain sensitivity/stability and hazards)** The intent of NRCan's suggested text is to increase clarity and ensure that information provided in the DAR is adequate for technical review and ensures an efficient process. The intent is not to be prescriptive but to ensure that sufficient information is provided to enable the MVEIRB to assess the validity of the conclusions, provided in the DAR, regarding environmental impacts.	It may be appropriate to request a description of bank stability/instability and areas of erosion.
NRCan – 6	***5.2.8 Land use***	**SUBJECT: Permafrost (including terrain sensitivity/stability and hazards)** The intent of NRCan's suggested text is to increase clarity and ensure that information provided in the DAR is adequate for technical review and ensures an efficient process. The intent is not to be prescriptive but to ensure that sufficient information is provided to enable the MVEIRB to assess the validity of the conclusions, provided in the DAR, regarding environmental impacts.	It is assumed that a description of land use within the corridor will include the Norman Wells oil pipeline. It is suggested that a description of the proximity of the proposed highway to the existing pipeline be required as well as the locations of any crossings (note: this may be more appropriate for section 6).
NRCan – 7	***6.1 Project components and activities***	**SUBJECT: Permafrost (including terrain sensitivity/stability and hazards)** The intent of NRCan's suggested text is to increase clarity and ensure that information provided in the DAR is adequate for technical review and ensures an efficient process. The intent is not to be prescriptive but to ensure that sufficient information is provided to enable the MVEIRB to assess the validity of the conclusions, provided in the DAR, regarding environmental impacts.	See comment above – it is suggested that description of the proximity of the proposed highway to the existing Norman Wells pipeline be required as well as the locations and design of any crossings.
NRCan – 8	***6.1 Project components and activities***	**SUBJECT: Regulatory Authority (*Explosives Act)*** Based on the Proponent's project description, NRCan will need to issue an explosives manufacture and/or storage licence pursuant to paragraph 7(1)(a) of the *Explosives Act.* The *Explosives Act* does not administer the use of explosives; use is administered by the territorial government. The intent of NRCan's suggested text is to increase clarity and ensure that information provided in the DAR is adequate for technical review and ensures an efficient process. The intent is not to be prescriptive but to ensure that sufficient information is provided to enable the MVEIRB to assess the validity of the conclusions, provided in the DAR, regarding environmental impacts.	11th bullet – It is suggested that this be revised to "Explosives manufacturing plant, storage and transportation".

NRCan – 9	***7.0 Assessment of environmental impacts and cumulative effects***	**SUBJECT: Permafrost (including terrain sensitivity/stability and hazards)** The intent of NRCan's suggested text is to increase clarity and ensure that information provided in the DAR is adequate for technical review and ensures an efficient process. The intent is not to be prescriptive but to ensure that sufficient information is provided to enable the MVEIRB to assess the validity of the conclusions, provided in the DAR, regarding environmental impacts.	NRCan agrees that the Developer should be encouraged to utilize lessons learned from the assessment of the Mackenzie Gas Project. The Developer could also be encouraged to utilize lessons learned from the existing Norman Wells pipeline, an existing linear development that traverses a significant portion of the proposed highway corridor.
NRCan – 10	***7.3.1 Terrain, soils and permafrost***	**SUBJECT: Permafrost (including terrain sensitivity/stability and hazards)** The intent of NRCan's suggested text is to increase clarity and ensure that information provided in the DAR is adequate for technical review and ensures an efficient process. The intent is not to be prescriptive but to ensure that sufficient information is provided to enable the MVEIRB to assess the validity of the conclusions, provided in the DAR, regarding environmental impacts.	The potential for icings could be included here (or in 7.3.4). Consideration of the effect of the highway on snow distribution and consequent effects on ground thermal regime could also be included.
NRCan – 11	***7.3.4 Water quality and quantity***	**SUBJECT: Permafrost (including terrain sensitivity/stability and hazards)** The intent of NRCan's suggested text is to increase clarity and ensure that information provided in the DAR is adequate for technical review and ensures an efficient process. The intent is not to be prescriptive but to ensure that sufficient information is provided to enable the MVEIRB to assess the validity of the conclusions, provided in the DAR, regarding environmental impacts.	7th bullet – It is suggested that this be revised to "Changes to water quality due to thaw slumps and other slope instability at water crossings". Changes to snow distribution and potential impacts on drainage could also be included in this section. Potential issues related to borrow extraction including melting of ground ice and potential changes in drainage etc. could also be included.
NRCan – 12	***8.0 Effects of the environment on the project***	**SUBJECT: Permafrost (including terrain sensitivity/stability and hazards)** The intent of NRCan's suggested text is to increase clarity and ensure that information provided in the DAR is adequate for technical review and ensures an efficient process. The intent is not to be prescriptive but to ensure that sufficient information is provided to enable the MVEIRB to assess the validity of the conclusions, provided in the DAR, regarding environmental impacts.	With respect to climate change it is suggested that the Developer include consideration of reasonable scenarios for future climate and describe the predicted effects on the project and the environment. The determination of volumes of granular resources required for ongoing road maintenance will depend to some extent on the changes in permafrost conditions resulting from the presence of the road and in response to a changing climate. It is therefore suggested that this section also include the impact of the environment on granular resource needs (and therefore the area to be disturbed to meet these needs).

NRCan – 13	***9.0 Potential accidents and malfunctions***	**SUBJECT: Regulatory Authority (*Explosives Act)*** Based on the Proponent's project description, NRCan will need to issue an explosives manufacture and/or storage licence pursuant to paragraph 7(1)(a) of the *Explosives Act.* The *Explosives Act* does not administer the use of explosives; use is administered by the territorial government. The intent of NRCan's suggested text is to increase clarity and ensure that information provided in the DAR is adequate for technical review and ensures an efficient process. The intent is not to be prescriptive but to ensure that sufficient information is provided to enable the MVEIRB to assess the validity of the conclusions, provided in the DAR, regarding environmental impacts.	Second set of bullets – 3rd – It is suggested that this be revised to "Transportation, storage, manufacture and use of explosives".
AANDC-1	***3.2.3 Key lines of Inquiry***	The MVH Project will cross two settled land Claims in addition to regions where land, resources and/or self government agreements have not been negotiated. It is important the project identify the different land ownership regimes along with the different land claim jurisdictions the highway will cross and whether any provisions of these land claims will apply. As an example, in both the Gwich'in and Sahtu Claims Agreement, a Mackenzie Highway routing is identified, which sets out certain consultation requirements, should the acquisition of Private Lands be required.	The Project must detail the land ownership and jurisdictions and implications (if any) to land quantum of those settled land claims it will cross and what mechanisms will be used to secure, where needed, tenure/ownership of the highway right of way. A subset of this information will be delineated the exact location of the project route against the highway right of way corridor, as described in the Gwich'in and Sahtu land claim agreements (SCHXVII of both agreements).
AANDC-2	***7.2.2 Key lines of Inquiry***	In the local economic considerations section, the Review Board wants the developer to describe and evaluate potential effects of the project on a number of elements including cost of living and consumer prices, contribution to gross domestic product. The draft workplan suggests that the Board will examine and assess economic impacts of the proposed development	Suggest that since the Mackenzie Valley Resource Management Act does not provide specifically for the examination of direct economic impacts, the Board should limit its consideration to economic impacts as they are raised in the context of the social and cultural environment in the Mackenzie Valley. Therefore, some of the elements listed under this key line of inquiry should be removed.

AANDC-3	***1.4 Legal context and the Terms of Reference development process & 2.0 DAR General Requirements***	Under the MVRMA s.46(1), First Nations, governments, and licensing bodies are required "...to carry out their powers in accordance with the land use plan applicable in a settlement area". The proposed project runs through two land claim areas with approved, and legally-binding Land Use Plans – the Gwich'in and Sahtu. Land Use Plans provide clarity for proponents and regulators as to how land use should be carried out. Addressing the requirements of the Land Use Plans in the ToR and DAR is an important step for future regulatory considerations and decisions.	1) Add a sub-section under 1.4 - Legal Context (or other appropriate heading) that acknowledges the legally-binding nature of the approved Gwich'in and Sahtu Land Use Plans, and that MVEIRB processes will be carried out in accordance with each area's Land Use Plan. 2) Add a sub-section to ensure that the proponent clearly identifies throughout each applicable section of the DAR how the project either conforms to each of the approved Land Use Plans, and/or if applications for 'Exemptions' from a Plan would be required for any specific activities.
AANDC-4	***5.1.1 Description of the exisiting environment-Biophysical information requirements***	The TOR suggests that Borrow materials be identified in respect of location, materials size, ice content and ownership. It should be clear to the proponent that detailed information in respect of volumes proposed to be removed from the different locations (borrow sources), the cumulative volumes of borrow material required (perhaps by region or Land Claim area) should also be defined. They should be required to state with confidence that the volumes exist in the quality the project requires to successfully complete the construction and long term maintenance. The TOR section asks for this, but could be more specific. The proponents statements need to be defendable and based on some level of geotechnical assessments of the locations. Granular resources are the single most utilized material that will be needed, and it will all be excavated from the near field sites of the right of way. It should be given addition attention than what is outlined in the DRAFT Document.	Describe borrow materials including locations, size of borrow areas, volumes to be extracted, quality of materials at each location, and the existence and extent of ice rich permafrost area which may be excavated. Ownership of the specific sites is also required along with the ability to demonstrate that the information provided is the result of one or more geotechnical assessments for the proposed borrow locations.
AANDC-5	***7.1.2 Identification of potential environmental effects***	The spatial boundary of the cumulative effects assessment should reach far beyond the geographic scope of the project. For example, the MVH will have a significant effect on development in the Inuvialuit Settlement Region.	The spatial boundary of the cumulative effects assessment must also account for induced development in the Inuvialuit Settlement Region.
AANDC-6	***7.1.2 Identification of potential environmental effects***	Cumulative effects are experienced by valued components at a regional scale, rather than being project-specific. Therefore, the cumulative effects assessment should take a regional approach to assess effects on valued components at the appropriate scale.	The cumulative effects assessment should take a regional approach to assess effects on valued components at the appropriate scale. For example, for boreal caribou at a herd-scale, and for water at an appropriate watershed-scale (Mackenzie River).

AANDC-7	***7.1.2 Identification of potential environmental effects***	Climate warming has caused documented changes in valued components of the region in the last 30 years. Assessment of project or other development-related effects must also account for documented and predicted environmental changes related to climate warming.	Assessment of project or other development-related effects must also account for documented and predicted environmental changes related to climate warming.
AANDC-8	***7.1.2 Identification of potential environmental effects***	A comprehensive cumulative effects assessment should consider the interacting effects of multiple stressors on valued components over both space and time. The current terms of reference does not address the issue of interacting effects.	The cumulative effects assessment should consider the interacting effects of multiple stressors on valued components over both space and time.
AANDC-9	***10.0 Cumulative Effects Assessment***	Section 10 states that "a project-specific assessment of cumulative effects is not responsible for assessing all external effects". While we agree with this statement, we believe that the Developer should be responsible for making reasonable and conservative assumptions about external effects when there is an absence of data. This will ensure that all past, present, and reasonably foreseeable future developments are accounted for in the environmental assessment, and that the precautionary principle is followed with respect to estimating potential external effects.	In a project-specific assessment of cumulative effects the Developer is not responsible for assessing all external effects; however, the Developer is responsible for making reasonable and conservative assumptions about external effects when there is an absence of data.
AANDC-10	***11.0 Follow-up and Monitoring***	CIMP recommends that the Developer adopt specific data collection and analysis protocols for monitoring that correspond with those already used by local and regional monitoring agencies. This will ensure that data can be combined and analyzed by CIMP to gain a regional understanding of valued components.	The Developer should discuss and adopt common data collection and monitoring protocols with local and regional monitoring programs including GNWT-Wildlife and the Sahtu Renewable Resource to facilitate project impact analysis.
TC-1	***7.3.4 Water quality and quantity***	Does not address Transport Canada's mandate	Describe any change in the environment which may in turn impact navigation on navigable waterways.
TC-2	***7.3.1.2 Culture and traditional land use***	Does not address Transport Canada's mandate	Describe the results of Aboriginal consultation specifically related to navigation on navigable waterways in the project area.

EC-1	***Section 7.3.8 Birds and bird habitat***	Section 7.3.8, Birds and bird habitat refers to the importance of the Mackenzie Valley to waterfowl, but this term excludes other important species groups, therefore EC recommends also including "waterbirds" in the description. By also referring to waterbirds, this notes that other species groups such as loons, grebes, shorebirds, rails, cranes etc. also use aquatic habitats in the project area.	EC recommends that the wording "The Mackenzie Valley is a migratory flyway for waterfowl and contains staging and breeding areas," be changed to, "The Mackenzie Valley is a migratory flyway for waterfowl and contains *important staging and breeding areas for waterfowl and other waterbirds*".
EC-2	***Section 7.1.3 Mitigations / Section 7.3.4 Water Quality and Quantity***	Section 7.1.3 Mitigations and Section 7.3.4 Water quality and quantity should outline water quality mitigations to be addressed by the Proponent.	EC recommends that water quality and quantity mitigations in the draft Terms of Reference be expanded to include the following text: Water quality mitigations shall include, but not be limited to: a) Development and implementation of: • Spill prevention and response plans; • Ammonium nitrate management plan, including predicted nitrogen loss rates and nitrogen loadings to the receiving environment; • Sediment and erosion control plan; • Waste management plan; and • Water quality monitoring plans, including objectives and action levels for adaptive management. b) Discuss how best practices will be implemented to promote the protection of water with respect to: a. Water crossings and construction near waterbodies; b. Bulk fuel storage areas; c. Explosives; d. Camp wastewater and solid waste; and e. Hazardous materials.

EC-3	***Section 7.3 Subjects of Note***	Section 7.3 Subjects of Note addresses areas of importance of which the developer is expected to describe and evaluate the potential effects of the project. While sediment is briefly mentioned under the Water quality and quantity section, EC would like to see further details on the potential effects of the project on sediment quality.	EC recommends the addition of a section on Sediment Quality with the following points: *7.3 Sediment Quality* Describe and evaluate the potential effects of the project on sediment quality, including consideration of: • Potential effects related to changes in water quality and quantity; • Potential issues associated with clearing of vegetation; • Potential increases in TSS concentration associated with construction, modification and use of roads and water crossings; • Potential effects on the aquatic environment;
EC-4	***Section 7.3.4 Water Quality and Quantity***	Section 7.3.4 Water quality and quantity is lacking consideration of the biotic components of an aquatic environment.	EC recommends that Section 7.3.4, Water Quality and Quantity, be revised to include the following additional bullet: • Potential effects on the aquatic environment including biota.
General	***Sections 5.1.3, 7.1.6, 11.2, and 11.3***	There are gaps where sections numbered 5.1.3, 7.1.6, 11.2 and 11.3 should be found in the Table of Contents as well as the body of the draft Terms of Reference.	It is recommended that the review board account for the numbering gaps in the systematic numbering of the table of contents and body either by adjusting the numbers, or adding sections to fill the current gaps.
General	***Sections 3.5.1, and 3.5.2***	Sections 3.5.1 and 3.5.2 are labelled in Table of Contents, and mentioned in the content but not labelled with section numbers.	The sections should be labelled in the document.
General	***Section 5.2.6 Socio-cultural Patterns***	Section 5.2.6 Socio-cultural Patterns is labelled in the Table of Contents, but the section is missing from content of the Terms of Reference.	The section should either be added to the document, or the section deleted from the Table of Contents to avoid further confusion.