28 January 2020

Impact Assessment Agency of Canada
600-55 York Street
Toronto, Ontario M5J 1R7

Via email: IAAC.MartenFalls.AEIC@canada.ca and online

Re: Marten Falls Community Access Road Project (Reference #80184 at *https://iaac-aeic.gc.ca/050/evaluations/proj/80184*): Tailored Impact Statement Guidelines and Public Participation Plan

To whom it may concern:

We are providing comments on the draft Tailored Impact Statement Guidelines (TISG) and Public Participation Plan developed by the Impact Assessment Agency of Canada (IAAC) to support the federal impact assessment process for the designated project, specifically, the Marten Falls Community Access Road Project (MFCARP).

In general, the draft TISG is well written and reasonably comprehensive considering the ecological, social, and economic context. We appreciate the efforts by IAAC to solicit our input and feedback as both experts and interested parties throughout the process to date. After describing our expertise, we provide feedback and recommendations on sections of the draft TISG in Section 1. In Section 2, we provide further feedback and recommendations on the Public Participation Plan

Our expertise:

We are submitting this feedback in our capacities as Wildlife Conservation Society (WCS) Canada scientists conducting field and applied research on wildlife species and ecosystems as well as providing technical advice and guidance to First Nation communities regarding monitoring, research, and the design and implementation of Indigenous Protected and Conserved Areas (IPCAs). WCS Canada is a national non-government organization that has been engaged in Ontario since 2004, with research and conservation priorities in Ontario, largely focused on the far north. In addition to field research on large mammals in the region between 2002-2012, Dr. Justina Ray was a member of the Far North Science Advisory Panel, the Ontario Wolverine Recovery Team, the Ontario Caribou Science Advisory Panel, and the Committee on the Status of Species at Risk in Ontario (COSSARO). Dr. Cheryl Chetkiewicz has conducted applied research on cumulative effects, promoted regional and strategic impact assessment in the far north, and is an active board member with Ontario Association of Impact Assessment (OAIA). Cheryl also participated in the Webex session on this project with IAAC staff on January 17, 2020. Dr. Matthew Scrafford leads WCS Canada's Ontario program and is principal investigator of the wolverine program in northern Ontario since 2017. We have extensive research and conservation experience with

caribou and wolverine and currently have ongoing field-based research programs on wolverine and lake sturgeon; we support and collaborate with a number of First Nations in northern Ontario on fish and wildlife research and community-based monitoring as well as provided scientific and technical support for communities engaged with Guardians Programs and the creation of IPCAs.

We have been actively involved in the federal impact assessment (IA) reform process since it was first launched in 2016, have engaged directly with the former Canadian Environmental Assessment Agency and other agencies on multiple occasions regarding projects and process, provided public comments both in person and in writing, throughout the process, and are highly familiar with the *Impact Assessment Act* (IAA) as well as the significant published literature on impact assessment. Similarly, we are very familiar with Ontario environmental assessment and land use planning laws, policies and processes; we alternately advised or provided written comments to various Ontario governments over the past 15 years, including the current government on changes being made or considered to many environmental laws, including Ontario's *Environmental Assessment Act* (EAA).

Section 1. Specific comments on sections of the TIS

1.1 Factors to be considered in the Impact Assessment

- This proposed road is located in a potential area for a pilot regional assessment, having been put forward as one of 22 potential regions in Canada that require attention[1]. This approach is something WCS Canada has championed through provincial, federal, and First Nations pathways since 2012.

2.1 The proponent

- The TISG should describe how IAAC and MFFN is proceeding with Ontario.
- The TISG should direct the proponent to clarify what opportunities have been provided to it to allow them to exercise powers and duties under the Act (par. 114(1)(d) and (e)) in this project.
- The TISG should direct the proponent to identify an interest or effort for the project to be part of an Indigenous-led assessment[2] (ss. 22(1)). We suggest the Impact Statement make this point clearly in relation to the IAA given this project assessment is primarily a non-Indigenous construction, embedded in Canadian legal norms.
- We remain concerned about the ability of the proponent and other First Nations to manage the challenges and potential confusion associated with coordinating the federal and provincial impacts assessment processes.

2.3 Project Location

- The TISG should clarify what is meant by the "area" and "surrounding area". We recommend the biophysical and socio-ecological context (i.e., "environmental significance and value of the geographical setting") be described within a sufficiently large enough area surrounding the project itself.
- The TISG should direct the proponent to include Dedicated Protected Areas (DPAs) and any other areas of ecological and social significance identified by the community during the community-based

[1] Presentation entitled, "Addressing Cumulative Effects of Resource Development" by Dr. David Nanang at the Cumulative Effects Conference, July 5-6, 2019 and subsequent follow-up conversations with Natural Resources Canada staff.
[2] https://gwichincouncil.com/sites/default/files/Firelight%20Gwich%27in%20Indigenous%20led%20review_FINAL_web_0.pdf

land use planning process with Ontario (e.g., Enhanced Management Areas). We are aware that Marten Falls has engaged in formal land use planning under the *Far North Act, 2010* based on an approved draft terms of reference. While there is no approved land use plan, the process has reached advanced stages. These and similar designations in neighbouring land use planning processes as well as IPCA proposals that are within the area should be included in the draft TISG as areas of environmental and cultural significance that were recognized by MFFN and neighbouring communities.

- The Impact Statement must include areas identified by MFFN to be withdrawn for protection under such tools as the Ontario *Mining Act* provisions for Sites of Aboriginal Cultural Significance (SOACS).
- We provide more specific recommendations in specific sections below on what information is needed, and should be mapped, in order to describe the geographical setting and socio-ecological context in which the project is to take place.

2.4 Regulatory framework and the role of government

- An additional requirement should be added regarding the "*provincial* authority's provision of financial assistance to the proponent for the purpose of enabling the project to be carried out, in whole or in part." While we understand the direct relevance of the role of the federal authority to determine federal jurisdiction in this process, we feel it is equally important for the proponent to be transparent about the provincial role in this regard; this is important context in the event there are future requests for substitution.

2.5. Qualifications of Individuals

- The TISG should be revised to better reflect Section 6(3) in the IAA. Under the IAA, the Government of Canada, the Minister, the Agency, and federal authorities are required to adhere to the principles of scientific integrity, honesty, objectivity, thoroughness and accuracy. In support of ensuring the quality of the scientific information and analysis being applied, the proponent must provide information on the individuals who prepared the sections within the Impact Statement related to environmental, economic, social, and health impacts and impacts on Indigenous Peoples. Proponents are required to demonstrate that a qualified individual has prepared the information or studies provided. A qualified individual would include someone who, through education, experience or knowledge relevant to a particular matter, may be relied on by the proponent to provide advice within their area of expertise. Knowledge relevant to a particular matter may include Indigenous and community knowledge.

3. Project Description

3.1 Project components

- It is not sufficiently clear from the draft TISG which project components require mapping. In the preamble to this section, the instructions are to map "key project components" while the bulleted list that follows of "all project components" to be included requires only a description for each, some with locations, some not. Mapping should be required for all project components that are named, to best determine the footprint.
- The draft TISG should include the "Location and area of upland habitats that will be cleared for aggregate". We suspect that the clearing of upland habitat for pits and quarries will remove more

upland habitat than the road itself and require aggregate from outside the current scoped boundaries, particularly because the road will not be decommissioned and will become an industrial route to the Ring of Fire. We acknowledge that this issue, particularly with respect to birds and eskers, is partially addressed in Section 8.10.

3.2 Project activities

- The draft TISG should stipulate the need for written justification for effects selected as having the "greatest potential" in this context, as well as those considered, but not included. This should be included among the "Sufficient information must be included" or "evidence that input from diverse subgroups was sought" guidance.
- The draft TISG should direct the proponent to quantify "anticipated road use by different users" (e.g., traffic volume, maximum weights, etc.).
- The draft TISG should encourage the proponent to develop plausible scenarios of road use. The term "reasonably foreseeable" is not mentioned anywhere in the IAA yet appears in this draft TISG, presumably because of the long history of deployment in project impact assessment. However, this language has had a well-demonstrated inhibiting effect on including consideration of potential future projects, thereby constraining much-needed robust and realistic cumulative effects analyses. We encourage, therefore, a different approach in this new regime. Given the information already provided in the project description, it is known that the intention of this road is to provide access for future mineral development. Therefore, it would be prudent to encourage presentation of plausible future scenarios of road use, rather than relying on one, very conservative scenario that is likely to arise if the Agency uses "reasonably foreseeable". If, for example, future growth is emphasized in Section 4.2, all such growth should be included in this section. We emphasize that what we are recommending is not about predicting the future, but rather about exploring possible futures. This approach provides a way to identify and explore uncertainties and driving forces.

4.2 Need for the project

- The TISG should be explicit about the clearly-stated expectation in the project description and this should be the starting point for guidelines to the proponent. The Summary of the Project Description for MFCARP states that the goal of the project is "an all-season Community Access Road that will connect the Community to Ontario's provincial highway network (Highway 643) to the south via the existing Painter Lake Road, which is maintained by Aroland First Nation". However, this project is essentially "Phase 1" which "could also be used as an industry supply road" (page 10, Project Description Summary).
- We expect the impact statement to clearly show how this project is needed by: 1) MFFN; 2) other First Nations given roles and responsibilities under Treaty No. 9; and 3) the public interest.
- The impact statement must justify the project in the event it becomes part of a larger all-season road network to the Ring of Fire mineral deposits (considered in Section 22).

4.3 Alternatives to the project

- We appreciate the direction in the draft TISG that the proponent must consider the no-action (null) alternative based on all the valued components associated with the project and not just the anticipated "employment and economic opportunities" as stated in the Project Description.

Providing the public with this analysis and describing the feedback will support meaningful engagement in critical decisions about the need for the project and the public interest.

- Given the purpose of the IAA, it should be stated explicitly that these alternatives must be considered from a sustainability perspective.

4.4. Alternative means of carrying out the project

- The TISG should direct the proponent to scope all four alternate routes as described to the public in the Summary of the Project Description. For the purpose of the impact statement and decision-making based on the project, all four routes need to be considered and analyses should be included in order to support and justify reduced scoping of alternative routes.
- The TISG should direct the proponent to consider the alternatives given aggregate sources and identify where aggregate may be coming from eskers and/or other glacial deposits. Aggregate coming from areas beyond currently proposed spatial boundaries needs to also be identified, including access routes, given the proposed road is not going to be decommissioned.
- Eskers are ecologically important (Far North Science Advisory Panel Report 2010: 57) and socially important. However, they are also suspected to be a source of chromium and, potentially, other metals naturally abundant in the region, to northern rivers and lakes (Dyer & Handley 2013). This makes them a potential human health concern as well since removal of esker materials for road building can mobilize these metals into the aquatic and terrestrial environment.
- We appreciate that the guidelines require descriptions of the criteria for determining technical and economic feasibility.

5. Description of public participation and views

- Experts should be included among public participants, given the relative lack of opportunity for external technical experts to review materials (other than the most “difficult” subjects). Many experts are not appropriate to include as “stakeholders”, as they should be participating independently and not representing membership (e.g., most academics who do not represent their institutions, and other qualified individuals).
- Among the subjects the proponents should seek knowledge and views on, should be design of studies to address knowledge gaps.

7. Baseline conditions

7.1 Methodology

- We are supportive of the focus on an ecosystem approach that considers how the project may affect the structure and functioning of biotic and abiotic components with the ecosystem and considering the variability due to potential future climate change.
- We likewise support the consideration of resilience of relevant species populations, communities and associated habitats to the effects of the project.
- Requiring that the proponents demonstrate how their models are developed, applied and extrapolated is also critical, including validation with field data.
- With respect to study area boundaries, we encourage a zone-of-influence analytical approach (e.g., Boulanger et al. 2012, Plante et al. 2018), including consideration of this road segment being part of

a larger access road that will be eventually developed. To this end, Dr. Len Hunt and colleagues of the Centre for Northern Forest Ecosystem Research (CNFER) in the Ontario Ministry of Natural Resources and Forestry (MNRF) investigated this for the Pickle Lake road in the same general region, and will have helpful unpublished results to inform such an analysis for caribou.

7.2 Sources of baseline information

- The process of community-based land use planning by MFFN and Ontario provides another important source of information that should be included in the project. The current draft Terms of Reference identifies the type of information that should be included in the TISG as baseline information on:
  - Cultural heritage protection and enhancement.
  - Traditional land use including but not limited to traplines, travel routes, harvesting, and supporting activities including fish traps, cabins, etc.
  - Environmental protection and enhancement including values, features, and special landscapes, biological diversity and ecological processes (in addition to species at risk such as caribou, wolverine, and lake sturgeon), other areas such as DPAs, Enhanced Management Areas, or sites recommended for withdrawal under Ontario's *Mining Act*.
- Important bird areas (https://www.ibacanada.com/explore_how.jsp?lang=en) and key biodiversity areas (http://www.keybiodiversityareas.org/home), the latter of which are in the process of being identified.
- Data associated with Ontario's Far North Biodiversity Project including information on plants, invertebrates, bats, birds, amphibians, reptiles, fishes, and some mammals (http://sobr.ca/the-far-north-biodiversity-project/). Some of this remains unpublished, but should be accessible.
- We recommend that "reports by think tanks, and government reports" should also include "non-government", as "think tanks" are not really a thing as much as a notional descriptor. Also "peer-reviewed journal" where all manner of experts, including non-academics, are known to publish would be a much better descriptive than "academic publication".
- We recommend that for "similar projects outside the area", it would be useful to explicitly mention road projects in remote regions, peatlands, etc.
- Note that the Ontario-specific information is also (and especially in many cases) maintained by the MNRF and the Ontario Ministry of Environment, Conservation and Parks (MECP). The Natural Heritage Information Centre is in the MNRF, for example.

7.3. Consideration and methodology in selecting valued components (VC)

- We largely agree with the listed factors to be considered in selecting the VC, with the following exceptions:
  - "the extent to which the VC may be under stress from other past, existing or future undertakings in combination with other human activities and natural processes": "cumulative" should be added as in "cumulative stress" to this statement.
  - "the extent to which the VC is linked to federal, provincial, territorial or municipal government priorities": "priorities" should be defined in this statement (e.g., legislation, plans, programs).

- The VC for the project will differ than those identified for cumulative effects assessment (Section 22). The latter should be selected based on the project's regional context and the scale at which cumulative effects must also be addressed.
- The nature of linear projects such as this one that intersects with a variety of habitats (or their proxies) should be deliberately mentioned.
- Explicit guidance for social and economic VCs would be helpful, considering that these may differ from typical biophysical VCs.

7.4 Spatial and Temporal Boundaries: Social and Cultural Boundaries[3]

- Ideally, the appropriate spatial boundary for considering social and cultural impacts of the project is the ancestral homeland. We appreciate that MFFN may not want to disclose this area given the history of colonialization, marginalization, and broken Treaty promises by Ontario and Canada. The appropriate temporal boundary is pre-settler colonialism. We suggest this can be considered through backcasting and discussions with Elders.
- Section 22 directs the proponent to assess cumulative effects to rights of Indigenous peoples and cultures, for all potentially impacted groups "including those located in the Greenstone mineral belt" which will be impacted by increased access to the region by exploration and mineral development projects. The proponent should provide a spatial boundary that coincides with this guidance.
- The TISG should include the 4,265,385 ha area of interest for planning (AIP) identified by MFFN and Ontario during community-based land use planning. We acknowledge that the AIP also is not the ancestral homeland and represents a negotiated compromise with Ontario. This boundary is documented in Marten Falls Draft Terms of Reference and includes the current footprint of the project.
- Other spatial boundaries include the overlap with AIP areas identified by surrounding First Nations including the *Taashykawin* Land Use Plan developed by Eabametoong First Nation and Mishkeegogamang First Nation as well as the AIP for Constance Lake First Nation.
- In recommending the AIP boundary for landscape- and regional-scale considerations of the project on social and cultural values, we want to be clear that the boundaries of AIP lack obvious relationships to ecological boundaries. As such, the AIP is not a suitable boundary for freshwater assessment (quality, quantity, fisheries), cumulative effects, and other important ecological processes such as fire and large-mammal habitats. We provide further guidance on these ecological boundaries below.
- Temporal boundaries for social, cultural, health, and economic values should be developed with the community. We suggest these could include: precolonization, post-colonialism to Treaty in 1905, residential schools to 1980s, and 1980s to current with the latter period focused on government policy, programs, and projects in the far north based on Canada and Ontario's interests in natural resource extraction, national security, etc.

[3] Typo on pg. 25. use the **PA, LAA**, and **RAA**

7.4 Spatial and Temporal Boundaries: Ecological VCs

The size of spatial boundaries influences how the VC is measured, assessed, and tracked. Assessment of impacts on terrestrial and freshwater ecosystems, functions, and processes will also vary depending on the scale of analysis. We provide the following comments on the draft TISG:

- The length of the corridor for the PSA is currently large and varies from 140 to 250 km.
- The width of corridor established for the PSA is currently narrow[4] for assessing baseline and impacts on any mobile or fluid ecological component. Attention to larger spatial extents to consider impacts is important for addressing the wider-ranging effects of roads. For example, it is known that declines in species abundance range from: 40 and 2800 m from the road for birds, between 250 m and 1000 m (and possibly more) for amphibians, and up to 17 km for mammals (Benitez-Lopez et al. 2010).

- We provide additional direction that the TISG should include:
    - For caribou and wolverine: We cannot be sure whether the guidance provided for either caribou or wolverine is adequate, especially without knowing how large the project study area will be. We suggest that rather than providing generic guidelines for buffer width the proponent be instructed to provide spatial boundaries as well as the evidence for their selection. For example, wolverine winter home ranges for Ontario are at the high end of published ranges for North America, with those of males averaging 2,563 km^2 and females 428 km^2 (Dawson et al. 2010).The MNRF and WCS Canada have good telemetry data that can be examined for this purpose.
    - For birds: The extent of BCR 8 that is not within the Area of Undertaking (e.g., habitats that are not already impacted by industrial forestry).
    - For lake sturgeon: The project, as a linear feature, crosses three secondary watersheds (Ekwan, Attawapiskat, Winusk) and has the potential to impact lake sturgeon populations in these watersheds. Haxton and Cano (2006) highlight the significance of these intact watersheds and relatively unperturbed populations. Lake sturgeon are an important cultural and economic resource (*sensu* keystone) for the community (e.g., Hopper & Power 1991). As such, the secondary watershed is the largest relevant scale for considering project impacts on lake sturgeon. In addition, landcover simulations per se is not an adequate way to scope aquatic boundaries for fish. We stress the fact that project is located within the headwaters with likely impacts downstream which are best considered at the watershed scale. We suggest this scale would also enable better consideration of impacts to other fish species that are ecologically and culturally important, but not considered species at risk by Ontario or Canada (e.g., migratory lake whitefish, walleye, pike, suckers, etc.).
- Temporal boundaries for ecological values should also consider backcasting to pre-industrial use and the approximate periods representing changes in human land use including pre-colonization, colonization to 1905, establishment of settled communities, and the onset of industrial land use based on government priorities and interests.

[4] approximately 140 to 250 km of two-lane gravel all-season road on a new right-of-way (ROW); approximately 100 m wide of ROW cleared to a width of 60m

- In general, there is a lack of knowledge about the thresholds of landscape fragmentation and habitat loss in the region, except for caribou at the range scale (Environment Canada 2012). These uncertainties need to be considered more explicitly in the impact assessment with more rigorous application of the precautionary principle. The burden should be on the proponent to demonstrate (with evidence) that the project will not impact the valued component at multiple scales. Failure to consider impacts that exist is more detrimental to the environment than detecting impacts that do not exist. This uncertainty should be disclosed by the proponent and considered by the Agency during review.

The following must be included in relevant sections of the biophysical environment both in written description and on maps. Most Ontario data listed below are available through data sharing agreements and spatial data can be accessed through LIO[5].

- Primary, secondary and tertiary watersheds and major and minor rives and lakes (Sections 8.5, 8.6, 8.9)[6].
- Ecozones, ecoregions, and ecodistricts as per Ontario or Canada's Ecological Landscape Classification (Sections 8.3, 8.4, 8.5, 8.10, 8.11, 8.12)[7].
- The current location of eskers and other post-glacial deposits on a map (Sections 8.3, 8.4).
- **Section 8.5** describes wetlands and riparian area requirements. We support the direction provided particularly to develop a carbon budget and ensuring the wetlands are considered in the context of:
    - the larger watersheds of which they are a part.
    - adjacent land use with a focus on hydrological and other functions.
    - landscape and/or watershed considering topography, soil types and hydrological linkages.
- **Section 8.8** requires a description of the natural disturbance regime (e.g., fire, floods, droughts, etc.).
    - Historical and current fire disturbances should be considered at the largest spatial scale, including the AIP. Fires result in plant communities with age class distributions that fluctuate over time; yet most impact assessments do not address the implications of forest fires resulting in an under-estimate of the total overall disturbance to the land-based and the implications of this disturbance on social and ecological values such as wildlife habitat. Any proximate activities that have resulted in changes to fire regimes should also be described (e.g., fire suppression, flooding, insect infestations).
    - Consider using Ontario's Provincial Satellite Derived Disturbance Mapping digital resource[8] as well as the Canadian National Fire Database[9].
    - Consider using Ontario's Far North Landcover layer for addressing social and economic values (e.g., timber, berries, non-timber products) and ecological values (e.g., conifer, mixed deciduous, etc.).

[5] https://www.ontario.ca/page/land-information-ontario
[6] Typo in the numbering in Section 8; 8.7 is missing
[7] https://www.ontario.ca/page/introduction-ecological-land-classification-systems#section-0; https://www.statcan.gc.ca/eng/subjects/standard/environment/elc/2017-1
[8] https://geohub.lio.gov.on.ca/datasets/fire-disturbance-area
[9] http://cwfis.cfs.nrcan.gc.ca/en_CA/nfdb

- **Section 8.9** on fish and fish habitat seems comprehensive.
    - Provide a map of sites (e.g., waterbodies) of past and current commercial fishing and relevant fisheries management zones (FMZ) (Marshall & Jones 2011).
- **Section 8.10** on birds, migratory birds and their habitat seems comprehensive from an ecological and scientific perspective. Consider adding a specific requirement in the TISG to describe the use of birds, particularly waterfowl, as a source of country foods (traditional foods) and whether consumption has Indigenous cultural use and value to be consistent with guidance on plants, fish, and wildlife.
- **Section 8.11** on terrestrial wildlife and their habitat should include information on biodiversity (e.g., Far North Biodiversity Program http://sobr.ca/the-far-north-biodiversity-project/) within MNRF. Please note for Section 8.11, that the MNRF should be consulted in addition to the MECP as information providers.
- **Section 8.12** on species at risk seems comprehensive[10], although the time window that we have available for our analysis and review constrains our ability to be as thorough as we would like.
- Include specific focus on the interface between the Hudson Bay Lowlands Ecozone and the Ontario Shield Ecozone which available evidence suggests strongly is of ecological significance for caribou as both winter and summer habitat, supports calving and nursery functions and may be important as a conduit for travel (Berglund et al. 2014, Poley et al. 2014).
- Include current core wolverine range as per MNRF Government Response Statement[11].

In addition, there are a number of **existing land uses** that affect the biophysical environment. The following should be included as baseline conditions **and on maps**:

- Current mineral claims as well as the geology and mineral potential of the land based on Ontario Ministry of Energy, Northern Development and Mines (MENDM)[12] (Section 8.3).
- Current mining proposals including but not limited to Eagle's Nest and relevant chromite deposits.
- Current areas of early and advanced mineral exploration (e.g., drill holes, etc.) and areas of third-party interests.
- Current areas of aggregate use based on MNRF and MENDM sources on a map together with eskers and other post-glacial deposits.
- Current locations of linear infrastructure, including but not limited to transmission lines, railroads, and communications features, including broadband.
- Current and historic sites of forestry activities (e.g., non-timber forest products, traditional uses, firewood, biofuel, and any sawmill or other value-added production facilities and sources).
- We suggest the above layers will be useful for determining the extent to which valued components below may be under stress from other past, existing or future undertakings in combination with other human activities and natural processes.

Sections 9-11 – please see our comments in Sections 15, 17, and 18

[10] There is a typo on pg. 73. Area (ha) of each Nursery Area removed by Project
[11] https://www.ontario.ca/page/wolverine-government-response-statement
[12] https://www.mndm.gov.on.ca/en/mines-and-minerals/applications/geologyontario

12. Baseline conditions - Indigenous Peoples

12.1 Physical and Cultural Heritage

- We recommend the development of guidance and policy context documents on this topic must be **co-developed** with Indigenous Peoples to improve this aspect of impact assessment.
    - This section should include areas of cultural heritage including but not limited to tangible values such as gravesites, tools, weapons, village sites, portage routes, as well as important spiritual areas such as sacred sites. We appreciate these areas may be sensitive and recommend providing broad polygons or a larger "study area" to capture the extent of tangible and intangible cultural and spiritual values. In making this recommendation, we acknowledge that the current conventional heritage resource management techniques developed by Ontario and Canada are inadequate and that western scientists understanding of human settlement in the subarctic boreal is limited. We provide further comment on cultural VCs below (Section 17.6).
- Cultural and other social values recognized through the identification of DPAs, Enhanced Management Areas, or sites recommended for withdrawal under Ontario's *Mining Act* in Ontario's community-based land use planning processes.

12.2 Current use of land and resources for traditional purposes

- Traditional land use including but not limited to traplines, travel routes, harvesting, and supporting activities including fish traps, cabins, etc.
- Historic and current traplines and status of commercial fur harvesting based on spatial boundaries. We note that in recommending this that trapping by First Nations and its continued viability regardless of current use, is protected by the Constitution of Canada.
- Current location of tourism camps and other infrastructure (e.g., eco-tourism, including natural heritage, landscape features, historical canoe routes, campsites; recreational tourism. Including sites for outfitting for sport hunting and fishing; and, cultural tourism, including traditional fishing camps, seasonal activities, harvesting techniques, etc.). These data should be available on LIO as well as through Marten Falls Economic Development office and/or Land Use Planning team.
- Current trails and portage routes, winter roads, access roads and trails on a map.
- We suggest these layers will be useful for determining the extent to which valued components below may be under stress from other past, existing or future undertakings in combination with other human activities and natural processes as well as being relevant for considering valued components that affect Indigenous interests or rights of Indigenous Peoples. There is some overlap with current direction in Section 8.1.

12.3 Health, social and economic conditions

- We are unsure if social assessments with the community have already been conducted. Consider issues identified already[13] in order to support a more consistent approach to assessing projects with other First Nations in the region. These could include:
    - Livelihoods (including economic development).
    - Infrastructure (food/water/sanitation/housing).

[13] For example, community assessment reports such as http://northsouthpartnership.net/images/pdf/WebequieAR_07.pdf

- Community participation (including culture and traditions).
- Education and recreation.
- Children and parents (including safety and security).
- Physical and mental health.

- Concerns could include the following:
  - Low income levels and high cost of living (especially food and fuel).
  - Lack of paid employment opportunities.
  - A desperate need for housing, including new construction, repairs and maintenance, and dealing with serious mould problems, and ownership issues.
  - The lack of physical resources for recreation, including the lack of facilities and other alternatives (e.g., arts and crafts).
  - Need for children and youth programs, including sports and recreation, arts and crafts, and especially land-based programs to reunite the younger generation with their cultural heritage.
  - Addictions to gambling, drugs and alcohol, especially among young people.
  - Suicide and its impact on the wider community.
  - The effects of intergenerational abuse and trauma, including stress, depression, anxiety and unresolved grief.
  - Health concerns, including diabetes, nutrition, respiratory illnesses, mental health.

We would expect to see identified community concerns addressed in the impact statement in relevant sections along with baseline information such as population numbers and demographics.

12.4 Conditions related to the rights of Indigenous Peoples (see also Section 19)

- We suspect the proponent like many First Nation communities in northern Ontario is experiencing pre-existing and cumulative effects related to colonialism, racism, violence, particularly against Indigenous women and girls, intergenerational trauma due to residential schools and cultural genocide, and a disregard for treaty relationships. Taken together, these forces already impact the rights of First Nations associated with the project as well as inter- and intra-generational equity around language, culture, and Indigenous Knowledge, among others. This context needs to be described and addressed in this section.

14.2 Changes to groundwater and surface water

- The TISG should be more specific in what it means by “contaminants of potential concern” and who determines what these are. We recommend including arsenic, chromium, mercury, and other “elements of concern” based on Lescord et al. (2020).
- This recommendation is also relevant for Section 16 in terms of health risks and social determinants of health (see our comments below).

14.3 Changes to riparian, wetland and terrestrial environments

- The TISG should be more specific in what it means by “contaminants of potential concern” and who determines what these are. We recommend including arsenic, chromium, mercury, and other “elements of concern” identified in Lescord et al. (2020).

- This recommendation is also relevant for Section 16 in terms of health risks and social determinants of health (see our comments below).

15. Effects to valued components – environment

15.1 Fish and Fish Habitat (also see comments in Section See comments on fish habitat in Sections 20 and 23.1)

- Expert-based models developed for fish sustainability indices for lake sturgeon, walleye, brook trout, and lake whitefish (see Chetkiewicz et al. 2017).
- The TISG should include arsenic in the list of "potential for direct effects of contamination downstream of the project on fish and bioaccumulation of contaminants (e.g., selenium, mercury, chromium)". Other "elements of concern for aquatic wildlife are described in Lescord et al. (2020) and should be included in the TISG.
- This recommendation is also relevant for Section 16 in terms of health risks and social determinants of health (see our comments below).

15.2 Birds, migratory birds and their habitat

- Apply maps, data and models developed through the Boreal Avian Modelling Project (https://borealbirds.ualberta.ca/)
- **Whip-poor-will and Common Nighthawk (see also Section 20)**
  - We agree with direction to the proponent in the draft TISG that "clearings created for the project may create new habitat types thereby attracting species at risk which were not present before (such as the Eastern Whip-poor-will or the Common Nighthawk)". This aspect should be explicitly addressed and described in the impact statement.
  - The TISG should direct the proponent to consider both the health, integrity and availability of wetlands near nesting sites of these birds. Farrell et al. (2019) show that both Eastern Whip-poor-will and the Common Nighthawk respond strongly to the amount of wetland at large spatial scales.
  - Summarize relevant conservation recommendations developed for BCR 8[14] and identify landcover types that are relevant for priority bird species. We are particularly interested in birds associated with upland habitats associated with eskers, levees, etc. since these habitats may be disproportionately important and vulnerable to development (e.g., impossible to replace).

15.3 Terrestrial wildlife and their habitat

- Summarize information available from the Far North Biodiversity Project.
- Include eskers as a VC, particularly as habitat for migratory and nesting birds and possibly bats.
- Note that information and expertise about impacts on wildlife is maintained by MNRF in addition to MECP.

15.4 Species at risk and their habitat

- Various models have been developed to understand large mammal occurrence and distribution that should be consulted including:

[14] https://www.canada.ca/en/environment-climate-change/services/migratory-bird-conservation/publications/strategy-region-8-boreal-softwood.html

- Caribou resource selection probability functions describing the probability of resource use at the range scale (see Hornseth & Rempel 2016).
- Caribou, moose, and wolf occupancy models describing their distribution in the far north (see Poley et al. 2014).
- Wolverine occupancy models describing the distribution of wolverine in the far north (see Ray et al. 2018).
- These publications describe suitable survey methodologies for caribou and wolverine based on winter track observations.
- We are aware that a spatially explicit Population Viability Analysis for caribou has been conducted with MNRF.

15.5 Climate change

- We have concerns about the insufficiency of the instructions to "provide a qualitative description of a project's positive or negative impacts on carbon sinks, including from the removal and alteration of wetlands," considering the disproportionate value of the peatland systems in the region for carbon storage. Although precise quantification methods are not available, proponents should make every effort to conduct an analysis using the excellent information that has been gathered by the Ontario Forest Research Institute and expertise within this research unit.

16. Effects to valued components – Human Health

- We recommend a Human Impact Assessment (HIA) for MFFN and other First Nations. HIA bridges human health risk assessment (identification of hazards and analyses of exposure and risk) with a holistic community health model (determinants of health).
  - Kwiatokowski (2011) provides a model of health which could be considered and we encourage inclusion of Indigenous concepts of health based on the community and other sources (e.g., Union of Ontario Indians and Anishnabek Health Secretariat 2009[15]).
- We support the need for an assessment of pathways between changes in the biophysical environment and health outcomes, using baseline health data on different population groups, and assessing the impacts on different population groups (e.g., Elders, youth, women).
- We recommend including sources information in Lescord et al. (2020) in describing and quantifying the project-related activities, and providing "an inventory of contaminants of potential concern and their sources, potential exposure pathways, adverse human health effects and the potential human receptors of these effects".
- We support specific attention to food and resources derived from the land, including fish, wildlife, plants, medicines, and freshwater sources due to greater exposure to contaminations associated with past, present, and future changes in land use and climate change and therefore higher health risk through bioaccumulation and bioconcentration of contaminants. However, negative impacts are not just biophysical. Indigenous Peoples' fear of their food sources being contaminated (real or perceived) (e.g., Furgal et al. 2005) has resulted in changes or even

[15] http://www.anishinabek.ca/wp-content/uploads/2016/07/Through-the-Eyes-of-a-Child-FN-Enviro-Health.pdf

cessation in hunting and gathering activities with consequent impacts on food sovereignty and rights.

17. Effects to valued components – Social

We also recognize there are overlaps between Social and Health and Culture (see comments below on 17.6) and suggest the following including possible indicators:

- Community well-being including: mental health (depression, anxiety, suicide – rates); physical health (obesity, number of nursing station and hospital visits, mortality rates, infant mortality rate, mean age of fertility); education (educational attainment, quality of education (i.e. class sizes, youth attendance), teacher retention rates); recreation (sport activities and participation, facilities available).
- Community safety including: crime (violent, property); victimization and perceptions of these crimes); injuries (unintentional, vehicle accidents and injuries); perceptions of safety.
- Community connectedness including: participation (volunteers, group activities, hours spent in arts and culture); citizenship (turnout rates for elections at the band, etc.); activities on the land; sharing of country foods; relationships (population, living alone, regional labour force, income distribution, in and out migration rates).
- Economic stability including: economic diversity (diversity index, labour force per sector); housing (housing index, quality of housing, overcrowding); poverty and unemployment (unemployment rate, environmental and remoteness index, cost of living index, grocery survey, % of children living below the poverty line); income and income distribution (median income, median family income).
- Extent of traditional land use practices. Connection to the land has played an important role in Indigenous conceptions of personhood and wellness. Disruption of this link has been a major contributor to the social suffering endured by Indigenous communities (Kirmayer & Valaskakis 2009).
- We recommend replacing “food security” (Section 7.5) with “food sovereignty”. Food sovereignty reflects the inherent right of peoples to healthy and culturally-appropriate food and the maintenance of food systems that are ecologically sound and sustainable. This concept is more holistic and relevant when considering effects on Indigenous Peoples, particularly First Nations.

There is a very obvious need to devise strategies to ensure not only that First Nations influence impact assessments of developments that affect them like this one, but that the results of these assessments help to shape the outcomes of developments considered in project impact assessment.

17.6 Culture

- We recommend the proponent conduct a Cultural Impact Assessment **co-created** between the community and relevant experts or advisors.
    - Given the proponent is a First Nation, we would expect a culturally appropriate process that is ideally co-created within the community (Elders, youth, women, land users as defined by the community).

    - We expect the cultural assessment would include elements below and also describe what has been lost and marginalized through colonialism, residential schools, racism, and violence as well as what is being maintained, revived, and restored.
    - We expect the proponent would also seek consensus with Indigenous First Nations.
    - We expect the cultural impact assessment to consider other research in the region such as Atlin (2019) and references therein as well as any "well-being" research with communities. Atlin (2019:297) notes the call for a "detailed social and cultural impact assessment before making decisions" has been around since the 1980s.
    - Researchers and consultants seeking information about such values for the purposes of aiding decision-making will need to build relationships of trust with the community. McCormack (2016) suggested that "consultants doing cultural assessments should have qualifications equivalent to those of expert witnesses for the courts."
- The spatial and temporal boundaries for the assessment should be determined by the community based on pre-contact as well as more recent time periods that are relevant to the community's understanding of their culture. Atlin (2019) provides some examples of these time periods that may be useful.
- We remain wary of *a priori* cultural categories that may be created by consultants and non-Indigenous Peoples and suggest it would be more socially just to develop the methodology with the community based on their cultural dimensions of concern as well as an open category to be augmented or defined by the community. We also respect the right of First Nation individuals and communities to reject attempts at measurement or categorizing the things they care about most. Turner et al. (2000), Satterfield et al. (2013), and McCormack (2016) offer some guidance including, but not limited to:
    - worldview: explanatory logics, knowledge systems and 'ways of knowing' different from dominant norms, including but not limited to sensory engagement with and/or spiritual and metaphysical properties of animate and inanimate objects; the organization and/or cosmology of the human-natural world and the social obligations that accompany these; as well as norms for appropriate behaviour including how and through whom is knowledge acquired.
    - identity: the sense of belonging to a unique collective.
    - sense of place: the experience of attachment to particular places, based on shared sensory experiences, memories and stories.
    - sense of community: social networks, shared and collective values, roles, norms of reciprocity and participation in collective events and activities.
    - spirituality and ceremony: the sense of connection to a wider force which may provide individuals with special powers and responsibilities.
    - governance: the ability to engage in decision-making and jurisdiction for collective welfare.
    - stewardship: rules regarding resource management.
    - language: legends, stories, place names and instruction used to encode and transmit culture.

        - Indigenous knowledge: knowledge about the land and skills passed through generations.
        - livelihood: means of sustenance and economy.
        - cultural continuity: the ability to engage in the same activities in the same places as ancestors did and to pass those skills and knowledges down to future generations.
    - We suggest that if these concepts aren't articulated, they could be the basis for baseline research and potentially assigned indicators to assess and monitor impacts for follow-up. We recommend co-created research that includes social scientific methods (Satterfield 2013, McCormack 2016). This research must be participatory in nature.
    - The TSIG should include impacts including:
        - visual and acoustic impacts on traditional use sites.
        - access to traditional land use sites (both positive and negative).
    - Our recommendations acknowledge the fact that the definition of culture for Indigenous Peoples as defined by non-Indigenous Peoples is inappropriate. In addition, culture, particularly Indigenous culture, has generally been poorly considered in environmental management and planning processes and often limited to tangible and material elements such as burial sites, petroglyphs, among others) (e.g., Hamilton 2000). Page[16] summarizes a number of cases in recent federal impact assessments as follows:

> "despite recognizing statements by Indigenous Peoples that the traditional economy is more than a means of physical sustenance and includes spiritual and cultural values, the joint panel for the NWT Diamonds Project accepted the proponent's employee rotation schedule as adequate mitigation (Joint Review Panel 1996). Similarly, while the joint panel for the Voisey's Bay Mine and Mill Project in Newfoundland acknowledged the project's potential cultural impacts, it reasoned that the project's economic benefits would be sufficient compensation for Indigenous Peoples' cultural losses (Joint Review Panel 1997). Yet, in the New Prosperity Gold-Copper Mine Project, the joint panel found it did not have the authority to determine the "spiritual significance of a place," and the project was rejected, largely due to its impacts on indigenous peoples' cultural practices that could not be mitigated (Federal Review Panel 2013: 197)."

18. Effects to valued components – economic

- We note ongoing claims in the media by Noront[17], Ontario ministries[18], and First Nations[19] that continue to focus on the anticipated funds from mining operations (not the road) and anticipated jobs.
- We remain concerned that the expectations of significant community benefits by the proponent are high (jobs, revenue sharing) and cannot be anticipated simply based on the current project. At the same time, Ontario's focus is to facilitate development of mines and mineral exploration in the Ring

[16] https://conferences.iaia.org/2017/final-papers/Page,%20Justin%2020Indigenous%20Cultural%20Impact%20Assessment.pdf
[17] https://conferences.iaia.org/2017/final-papers/Page,%20Justin%20-%20Indigenous%20Cultural%20Impact%20Assessment.pdf
[18] https://northernontario.ctvnews.ca/video?clipId=1882825
[19] http://www.matawa.on.ca/certainty-from-first-nations-is-the-key-to-the-emerging-northern-economy-matawa-first-nations-to-the-ontario-governments-standing-committee-on-finance-and-economic-affairs/?fbclid=IwAR0Cz6CeNhXd1cIdUDNrERH_bd3mrsB4Glikbeh5RxntZcn9pU3e8l0QQGk

of Fire. Other examples where community expectations on economic returns were high include De Beers Victor Diamond Mine[20], oilsands developments in northern Alberta (Parlee 2016) and across the north (Irlbacher-Fox 2009). In these examples, projects as designed and approved by provincial and federal governments have not led to increased material wealth and overall improvements in community well-being in First Nation communities.

- Irlbacher-Fox (2009) has stated that there is no empirical evidence that increasing the material wealth of Indigenous people, or increasing economic development of Indigenous communities, in any way improves the mental or physical health or overall well-being in those communities. Development and the associated increase in economic wealth, which we suspect will be seen as a significant positive effect for First Nation communities in the impact statement, often simply increases the social stratification between those educated and qualified to obtain jobs and wealth from the project, program or policy and those who maintain an existence on the land and who engage in land-based practices. Those with jobs spend less time in their communities and with family and Elders, thereby further severing the links with traditional ways and enhancing integration into western society. Responses to these impacts fall into either mitigation and/or adaptation.
- We think there are many assumptions and uncertainties regarding positive economic and social outcomes for First Nations and anticipate more explicit consideration of this in the impact statement under Section 25.

19. Effects to Indigenous Peoples and impacts to the exercise of Aboriginal and Treaty Rights

- In addition to items in Section 19.1, the project needs to be considered in the context of past and current impacts associated with colonialism, racism, violence, particularly toward Indigenous women and girls, intergenerational trauma due to residential schools and cultural genocide, and a disregard for treaty by Ontario and Canada. This context needs to be addressed in this section.
- First Nations maintain their own principles for operating on the land and their own understanding of Treaty and Aboriginal Rights that has typically not aligned with federal and provincial interests. These include governance, jurisdiction, and stewardship interests associated with land and resource use that are difficult to address in project-level impact assessment.
- In addition to an issue resolution process for this project, we reiterate our request for a regional assessment that could support a governance model with First Nations that has been absent to date (e.g., Regional Framework Agreement, others).
- We remain concerned about the ability of the proponent and other First Nations to manage the challenges and potential confusion associated with coordinating the federal and provincial impacts assessment processes, including the disparity in approaches to cumulative effects between Ontario and Canada.

20. Mitigation and enhancement measures

- The same guidance as provided in Section 4.4. regarding criteria for technical feasibility should be repeated in this section.

[20] http://wildlandsleague.org/attachments/striking%20it%20poor.pdf

- The guidance that "Measures are to be specific, achievable, measurable and verifiable", is critical, given the propensity in our experience to use untested measures. We note, however, that this guidance is hidden in the preamble and does not receive sufficient emphasis in the bulleted "must" statements that follow.
- **In relation to birds**[21]
    - We support the guidance that mitigation must also focus on mitigation of impacts to eskers and related features rich in aggregate material that constitute upland habitats for birds and the direction to describe this at the broadest scale (e.g., LSA).
    - In relation to Eastern Whip-poor-will and Common Nighthawk, the TSIG should direct the proponent to consider both the health, integrity and availability of wetlands near nesting sites of these birds. Farrell et al. (2017, 2019) show that both Eastern Whip-poor-will and the Common Nighthawk respond strongly to the amount of wetland at large spatial scales.
- **In relation to bats**
    - We are not sure whether the guidance for bats will be sufficient or appropriate, and are particularly concerned about important hibernacula in areas being used for aggregate materials. The removal of aggregate will destroy essential habitat for numerous species if these sites are indeed used for this purpose.
    - Roosting sites in forested areas are also important, but the setback distances provided in the guidance are not sufficiently tested and context-dependent, in our experience.
    - The timing consideration for tree clearing seems odd, as the impact avoidance for a maternal roosting site will only potentially be effective for one year, after which the habitat is destroyed.
    - It is unclear how underpasses can be considered in the current project and environment.
- **In relation to caribou**
    - For a major disturbance like a primary road going through undisturbed habitat, the best management guidelines issued by MNRF are likely to be inadequate, depending on traffic levels.
    - Many of the measures described in the recommended resources are well-meaning, but have not been tested or verified and scale is important. Ultimately, range scales and population level analyses are important for assessing the value of proposed mitigation approaches. This uncertainty could constrain mitigation.
- **In relation to wetlands**
    - This section should acknowledge the particular importance of peatlands, for which there is very little experience of restoration, other than at small scales associated with peatland extraction at more southern latitudes.
    - This lack of knowledge should constrain options for impact mitigation typical of southern projects associated with wetland impacts.
- **In relation to freshwater fish (see also Section 23.1)**
    - Sections 3.1, 3.2.1, and 3.2.2 directs the proponent to describe the location, design, construction, maintenance, and permanency of culverts. These structures must be

[21] Typo in this section. ***cumulate effects***

considered explicitly in the impact statement as well as under current and predicted future water flows and require assessment at tertiary and secondary watershed scales.

- Culverts come in a variety of shapes and sizes to mitigate road crossings on aquatic systems. The project anticipates at least 30 water crossings, only a few of which will be bridges. Improperly installed or maintained culverts pose a high risk for freshwater fish as they may restrict movement if they become impassable due to flow, debris, or "perching". For example, a study of culverts in northeastern Alberta found 30% of culverts to be impassable to fish (Park et al. 2008) while only 36% of stream crossings are estimated to be fully passable to fish in the Great Lakes Basin (Januchowski-Hartley et al. 2013). Berglund (2007) found species richness, abundance, biomass and density were all were significantly lower for freshwater fish communities below culverts in 10 watersheds northeast of Thunder Bay.

22. Cumulative Effects Assessment

- We remain concerned about the disparity between federal and provincial obligations to assess cumulative effects.
- This project will directly cause or encourage other projects and activities to occur. For example, it is an access road to a proposed mine. However, the access road may also enable other exploration project activity and potentially other mining proposals in the region. This induced future growth projects must be included in the cumulative effects assessment (e.g., Johnson et al. 2019). For example, any growth that justifies the need for the project should be included in the cumulative effects assessment
- See comments from Section 3 above on "reasonably foreseeable" and the use of plausible future scenarios.
- VCs for cumulative effects assessment are not necessarily the same as for the project and should be clearly described.
- Determining geographic scope: We support the guidance in the draft TISG towards tailored spatial boundaries for ecological VCs and the need for rationale. The ecological implications of land use change and their significance cannot be evaluated in impact assessment based only on information about project-affected areas, in isolation from their wider ecological context.
- Determining other projects that should be considered: We support the inclusion of the minimum set of projects that the proponent must consider given the long history of projects and exploration in the region, including the diversions to major river systems.
    - The TISG should include the transload facility at the CN railroad as part of the "transportation of ore".
    - The TISG should include a "potential East-West Road" which is a perpetual issue of discussion in the Ring of Fire. This East-West Road is likely to impact MFFN rights, based on overlap with AIP and other First Nations land use for example, through direct and cumulative impacts on VCs, including Indigenous rights.
- We support the use of scenarios with and without the project and the inclusion of assessment on Missisa, Nipigon, and Pagwachuan ranges caribou ranges and the rights of Indigenous Peoples and their social and cultural values within the AIP and other appropriately scoped boundaries for social and cultural VCs.

- We support the direction to assess the implications of applying project-specific mitigation and enhancement measures within a regional context given the list of projects to be considered.

23.1 Effects of potential accidents and malfunctions

- We support the inclusion of "worst-case scenarios" that assess accidents and malfunctions during migration periods for migratory birds; nesting periods for migratory birds; spawning periods for fish; and the presence of sensitive wildlife and/or seasonally-important habitat.
- We recommend scenarios for freshwater explicitly consider the viability of culverts and their impacts on freshwater fish biodiversity, health, and movement.

24. Canada's ability to meet its environmental obligations and its climate change commitments

- We support the inclusion of the three main federal areas of focus based on the Convention on Biological Diversity (CBD), Convention on Wetlands of International Importance, and the Convention for the Protection of Migratory Birds in the United States and Canada.
- However, the focus on biodiversity as limited to Species at Risk is wholly inappropriate. Article 14 of the Convention: "Impact assessment and minimizing Adverse Impacts" -- requires its contracting parties (the signatory governments) to introduce appropriate procedures for impact assessment of proposals that might have effects on biological diversity, and to ensure they have ways of taking biodiversity impacts into account.
    - In 2016, COP13 adopted a decision on mainstreaming that included a focus on impact assessment, inviting Parties and other governments "to take measures to improve the effectiveness of environmental impact assessments and strategic environmental assessments, including by strengthening the application of strategic environmental assessment methodologies and by using tools to evaluate potential impacts on biodiversity and ecosystem functions and services, including on resilience."
    - At COP14 (in November 2018), they agreed to consider the mainstreaming of biodiversity in the following key sectors: energy and mining; infrastructure; manufacturing and processing; and health. The use of IAs are highly relevant to the first three sectors in particular.
    - The International Association for Impact Assessment (IAIA) teamed up with CBD and Ramsar Conventions since the 1990s to produce materials, including principles and guidance on "biodiversity-inclusive impact assessment" – the most recent version in January 2018.
    - Importantly, these Principles embody the need to go beyond "business as usual" to achieve positive and demonstrable outcomes for biodiversity and ecosystems through rigorous application of the mitigation hierarchy (MH) as part of impact assessment. The CEAA guidance is woefully out of date[22], referencing a 1996 paper, although it does include a comprehensive definition of biodiversity.
- "Best practice" for biodiversity in impact assessment now requires a more explicit and comprehensive integration of biodiversity based on a valid and transparent risk assessment. This contrasts, in general terms, with a standard approach that may fail to deliberately take into account these other issues.

[22] https://www.ceaa-acee.gc.ca/default.asp?lang=En&n=7392AC38-1&offset=2&toc=show

- We recommend modifying the TSIG to include the IAIA Principles[23] such as:
    - Must adopt a complete definition of biodiversity, not limited to species at risk
    - Embrace and understand the relationship between biodiversity and human livelihoods and quality of life, rights, values, dependencies, and benefits
    - Adopt and adhere to goal of no net loss outcomes and deploy the mitigation hierarchy (note, this is standard practice internationally with International Finance Corporation Principle #6, which governs lending practices of multi-lateral banks and there is no equivalent lever in Canada where financing is private).
        - From IAIA: "emphasis on preventive measures and including off sets for residual impacts on biodiversity, ecosystems and the services they provide."
        - From IAIA FasTips[24]: "Identify major constraints, high risk areas, and significant impacts on biodiversity and ecosystem services at the outset, seeking alternatives to avoid them. Only when impacts are unavoidable should measures to minimize, restore, off set biodiversity loss, and compensate for lost ecosystem goods and services be addressed."
    - Important sites, e.g., key biodiversity areas, RAMSAR sites, etc.: The stated reasons for the site's designation, formalises explanations of the status of its values, functions and attributes, its conservation objectives and any management plan that exists, will in addition give a robust basis for 'scoping' decisions about the factors the assessment should address. In some cases, these need to be no development zones, and offsets considered.
    - Expanding the scope of analysis to include biodiversity characteristics, evaluating impacts holistically using a wider ecosystem approach as per CBD, and considering long-term and cumulative secondary impacts in addition to more immediate, primary impacts, as early as possible in the process.
        - The significance of seasonality and natural cycles/variability for biodiversity measurement and monitoring (e.g. project timescales may not allow for long-term surveying of biodiversity).
        - Resource use to supply development and operational stages (e.g. water, timber and food requirements that can affect biodiversity away from the core activity area).
        - The significance of biodiversity for people's livelihoods and quality of life AND different stakeholder perspectives as to what biodiversity is of value.
        - Important sites for biodiversity that have not been designated for protection.
        - Non-protected species, but part of biodiversity.
    - Prioritize the long-term management, archiving and publishing of data generated during the IA process. The primary biodiversity data collected during impact assessment is typically gathered as a 'one off' and varies greatly in precision, accuracy and type. There is a need to standardize methods used to collect and store or archive data to capture data in forms and formats that make them accessible and re-usable, and accessible after the completion of the IA.

[23] https://www.iaia.org/uploads/pdf/SP3%20Biodiversity%20Ecosystem%20Services_1.pdf
[24] https://www.iaia.org/uploads/pdf/Fastips_5Biodiversity.pdf

- Precautionary principle. For example, explicitly stating in the IA the important gaps in information, assumptions made, or limitations in knowledge or understanding that may have influenced the reliability of impact predictions or effectiveness of mitigation recommendations, and pose significant risks of irreversible or unacceptable impacts on biodiversity or ecosystem services.
- Establish robust adaptive management systems in monitoring and follow-up.

25. Description of the project's contributions to sustainability

- This section provides direction for developing a qualitative statement of sustainability. We think a good question would also be: will this proposal make a net contribution to environmental, social and economic well-being for: 1) MFFN; 2) other First Nations given roles and responsibilities under Treaty No. 9; and 3) the public interest?
- What are the decision-making criteria for assessing sustainability in this project? Gibson (2013) provides a generic set that could be considered with the proponent and communities to develop context-specific criteria.
    - long-term socio-ecological system integrity.
    - livelihood sufficiency and opportunity for everyone.
    - intra-generational equity.
    - inter-generational equity.
    - resource maintenance and efficiency.
    - socio-ecological civility and democratic governance.
    - precaution and adaptation.
    - immediate and long-term integration.
- The TISG should direct the proponent to consider the context for specific trade-off rules and factors to guide decisions on trade-offs (e.g., Atlin & Gibson 2017).
- A core tenant of considering sustainability of the project is that it must fit within a broader regional and possibly strategic vision. We reiterate our request for a regional assessment that would include this project and others and create a governance model with First Nations that has been absent to date.

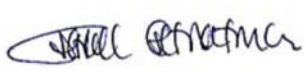
26.2 Follow-up program monitoring

- In general, the direction provided to the proponent regarding monitoring seems adequate. We stress that Ontario has provided few resources to monitor a number of species at risk including caribou, lake sturgeon, and wolverine. Many of these species require long-term monitoring given the area and habitat requirements (e.g., caribou, wolverine) and longevity (e.g., lake sturgeon). We are not aware of commitments by Ontario to monitoring programs in the region for birds, bats, and freshwater fish.
- We suggest that the proponent work with scientists, other experts, and other communities in the design, implementation, and management of monitoring associated with the project, especially for cultural keystone species. Ontario and Canada should support these efforts in terms of funding and other resources given the importance of the project.

Section 2. Comments on the Public Participation Plan

- In addition to any follow-up on our comments on the draft TISG, we would benefit from an opportunity to consider technical matters around baseline data collection and effects assessment. Ideally, this could be face-to-face, but can also be a webinar or similar remote session with the proponent and IAAC to discuss the ecological data and baseline studies, particularly on caribou, wolverine, lake sturgeon, and wetlands. Ideally, this would happen before Phase 2. Our rationale is that having a better understanding of the location, nature, and extent of baseline studies conducted to date would support feedback, recommendations, and guidance from WCS Canada moving forward and provide opportunities to consider modeling and other analyses before they are conducted. This is particularly important given that no new information beyond what is required in the TISG can be requested without strong rationale. We have provided some additional data sources in the relevant sections above. It is not clear how much of this information is available to the proponent.
- We continue to be engaged through public notices, comment periods and emails. Open Houses in Thunder Bay are useful for staff based there and are opportunities to interact with First Nation members as well as consultants and staff. We are pleased with the level of engagement with WCS Canada staff to date and appreciate the opportunity for one-on-one webinars provided during this phase.
- We also appreciate the funding made available to our organization through the Act (s. 75) and have found the enhanced Canadian Impact Assessment Registry to be both efficient and easier to use. We particularly appreciate the availability of policy context and guidance documents as well as the efforts to provide plain-language and concise materials including the TIS. These measures support our ongoing participation.
- We are deeply concerned about the all-too-brief timelines, and particularly the amendments brought in by the Senate that the planning phase clock can only be stopped where requested by the proponent, or for matters specified in the regulations, which in turn only allow the clock to be stopped in order to collaborate with another jurisdiction. This comment period, falling as it did over the holiday period, has challenged our ability to provide more thorough feedback.

Thank you for the opportunity and we are available to engage in any discussions regarding our recommendations and comments. Please feel free to contact us below.



Cheryl Chetkiewicz, Ph.D.
Conservation Scientist
cchetkiewicz@wcs.org
780-860-5130

Justina Ray, Ph.D.
President and Senior scientist
jray@wcs.org
416-850-9038 x 22

Matthew Scrafford, Ph.D.
Associate Conservation Scientist and Lead for Ontario's Northern Boreal
mscrafford@wcs.org
807-925-9126

Claire Farrell, M.Sc.
Freshwater Scientist - Ontario Northern Boreal Program
807-925-9125

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