February 15, 2023

Executive Committee
Yukon Environmental and Socio-economic Assessment Board
c/o Panel and Hearing Manager
Suite 200 – 309 Strickland Street,
Whitehorse, Yukon, Y1A 2J9

Re: Draft Environmental and Socio-economic Effects Statement Guidelines for the proposed Casino Mine Project (YOR # 2022-0154).

Dear Executive Committee Members:

Please accept this letter as a submission in response to your Committee's invitation for interested persons and organizations to comment on the draft Environmental and Socio-economic Effects Statement Guidelines (ESE Guidelines) for the proposed Casino Mine Project. Thanks for the opportunity to comment on this important document.

These comments have been prepared by Yukon-based scientists working for WCS Wildlife Conservation Society Canada. WCS Canada is a non-profit, charitable organization. Our mission is to save wildlife and wild places through science, conservation action, and inspiring people to value nature. We work at national and regional scales in Canada with head office in Toronto. WCS Canada scientists have been working in Yukon since 2004 on land use and protected areas planning, land and water management, wildlife conservation research, and policy applications for conservation science. Our role is to provide long-term site-based research and syntheses of science that inform policy and practice and that support the implementation of effective conservation measures by providing technical advice and by engaging relevant decision-makers at all levels, from local to federal.

Overall, we find the draft ESE Guidelines to be clear, detailed, and comprehensive for most subjects and valued environmental and socio-economic components (VESECs). YESAB has invested substantial effort in covering the necessary topics to a sufficient degree. There are, however, some areas where we think that more detail is required to make sure that sufficient information is provided to the future Panel Review to fully assess the effects of the proposed project. Here, we outline our thoughts, following the structure of the draft ESE Guidelines document, and summarize them in specific Recommendations (italics).

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Part B-2: Project Overview and Description

4. Project Description

4.2 Project Components

The draft Guidelines seem to be missing direction to the proponent to describe the specific products of the mine and how those would be transported from the mine site to destinations elsewhere. “Ore” is only mentioned with respect to the mill, and “concentrate” is not mentioned at all. “Transportation” is mentioned with respect to potential impacts on some cultural and economic activities. However, the details of what is to be transported, how, and to where are not discussed.

This seems to be an important oversight, because, with a mine of this size, the volume of material products to be removed from the mine site would seem to be large. What mode(s) of transport will be used, and with what frequency? The exact nature of those materials being transported is relevant with respect to risks in accidents and to other travellers, which are topics raised elsewhere in the draft Guidelines. The destination of the materials is important to know so that the assessors, and the public, can understand the route and geographic scope of impacts of traffic.

Recommendation 1: That the draft ESE Guidelines include a specific section (probably titled Mine Products and their Transportation, and situated within 4.2 Project Components) dealing with mine products, and requiring the proponent to provide descriptions of those products, modes of transport from the mine site, volumes and masses of transported materials, frequency and seasonal timing of the transportation, and transportation routes (including to what road heads).

4.4 Technologies

4.4.7. Liquid Natural Gas Power Generation

Some more detail could be provided here to help understand the potential impact of LNG (“in and outside Yukon”, which is the scope of the review) as the principal fuel source for powering this proposed mine. This is particularly true because the proponent has stated, in its Proposed Casino Project Modifications (Oct 6, 2022), that the mine would require 130MW of power for ongoing operations (and a capacity of 200 MW including backup). This is a total capacity similar, if not in excess of, the entire power generation capacity of current Yukon infrastructure. This is a massive amount of power. Specifically, where does the proponent propose to source the LNG (which currently operational fields, or potentially exploitable fields), and how is the gas extracted at those fields?

Recommendation 2: That the text of section 4.4.7. Liquid Natural Gas Power Generation include a requirement for the ESE to describe likely source(s) of the LNG (which jurisdictions and fields) and the mode of gas extraction at those fields.

4.5 Alternatives and Chosen Approach
4.5.2.5. Power Generation
Understanding how the proponent chose the means of power generation, from among a number of choices, is certainly an important section of the ESE. The draft ESE Guidelines only ask for an assessment of alternative power generation methods (i.e. alternative to LNG) that were considered. They do not request a scoping of a prescribed set of alternatives (including solar, wind, nuclear, micro-hydro). The ability to assess the ESE Statement would be enhanced by a scoping of all of these alternatives in comparison to LNG, and also by an evaluation of establishing a set of different power sources (in terms of carbon footprint and backup and redundancy).

Recommendation 3: That the section on alternative Power Generation (4.5.2.5) request that the proponent provides an assessment "in relation to economic viability, technical feasibility, and potential social and environmental effects" of a specified set of power generation alternatives (to include solar, wind, nuclear, and micro-hydro) as well as any other alternatives, and possible mixed portfolios of these alternative sources.

Part B-3: VESECs
The draft ESE Guidelines describe spatial boundaries for the assessment of some VESECs, and, for some other VESECs, leave these spatial boundaries up to the proponent to describe. However, the spatial boundaries generally do not extend beyond the region west of Carmacks, including the proposed mine site, new access road, and associated watersheds (i.e. generally the Dawson Ranges and adjacent Yukon River valley).

In our estimation, this is too small an assessment region for some of the VESECs. We conclude this mainly because of the massive size of this proposed project and the consequent major changes in traffic volume that are likely to occur on long stretches of Yukon highways (notably the Alaska Highway from British Columbia to west Whitehorse; North Klondike Highway Whitehorse to Carmacks; South Klondike Highway Whitehorse to Skagway). This proposed project is likely to be among the largest single mine developments in Yukon's history. Apart from the construction phase, the proposed mine, when operating, will require a large fleet of trucks to transport fuel (likely Liquefied Natural Gas) to the power plant, and a second fleet of trucks to move ore or concentrate out of the Yukon. The impacts of such vehicle traffic may well include increased mortality for humans and for wildlife (notably caribou of the Carcross, Atlin, Swan Lake, and Little Rancheria herds; elk of the Braeburn herd; mountain goats of the Montana Mountain herd), plus changes in noise and air quality (notably through Whitehorse, Carmacks, and Carcross). These would be direct impacts of the proposed project. They should be considered because the Matters to be Considered (section 2.2 of Section 2.0: Preparation of ESE Statement in the draft ESE Guidelines) include the following text (underlines added by ourselves):

> "(c) the significance of any environmental or socio-economic effects of the project or existing project that have occurred or might occur in or outside Yukon, including the effects of malfunctions or accidents
> (d) the significance of any adverse cumulative environmental or socio-economic effects that have occurred or might occur in connection with the project or

existing project in combination with the effects of other projects for which proposals have been submitted under subsection 50(1) or any activities that have been carried out, are being carried out or are likely to be carried out in or outside of Yukon"

Recommendation 4: That the spatial boundaries for the consideration of some VESECs (Part B-3: Air Quality; Noise; Wildlife - Caribou) be expanded to include those portions of the Yukon highway network directly impacted by increased truck traffic during the operation of the mine, and deal with potential impacts of vehicular traffic on those VESECs (including all affected herds of caribou).

Recommendation 5: That the detail requested with regard to Operations (section 4.2.10.3) of the Access Road (Part B: 4.2.10) be more detailed, specifically with regard to Traffic Volume, such that not only "seasonal variation" is described, but that "traffic" is classified, at least, by vehicle type and load (notably LNG or other fuels, and ore/concentrate).

10. Wildlife
10.7. Passerine and Bird Species at Risk
First, the title of this section may be misleading. Does it reference all "Passerine Birds" and "Bird Species at Risk" (as could be inferred by the text in 10.7.3) in which case it should read: Passerine Birds and Bird Species at Risk. If it only references bird species at risk, then it should read: Bird Species at Risk.

Recommendation 6: That the title of section 10.7 be re-written to avoid the problem that arises by apparently using the word "passerine" as an adjective, when it may have been meant to be a noun.

In section 10.7.3. Project Effects Characterization, there is no mention of mortality of birds as a result of the project (except for possible loss of nests). If wind energy is proposed as a power source, then direct mortality to birds is a potential direct impact. Also vehicular traffic on access road will be a source of mortality.

Recommendation 7: That section 10.7.3 (Project Effects Characterization for Birds) include a section on direct mortality as a result of project activities.

10.11 Sheep
Section 10.11.3 Project Effects does not include potential interruption of movements between seasonal ranges (that consist of isolated patches of habitat for this population), or changes in the effectiveness of seasonal ranges due to human disturbance (mainly from the road). The list of bulleted points needs to deal with this potential effects, so that their mitigation can be considered in another section (10.11.4).

Recommendation 8: That the list of Project Effects (10.11.3) include possible interruption of movements (probably along specific routes) between habitat patches, and changes in habitat effectiveness due to disturbance.

10.12. Little Brown Myotis
Section 10.12.3. Project Effects Characterization needs to include "mortality risk" because wind power infrastructure is a possible source of energy for the mine, and this

bat species has significant potential mortality risk with wind turbines, requiring mitigative measures.

Recommendation 9: That section 10.12.3 (Project Effects Characterization for Little Brown Myotis) include a section on direct mortality as a result of project activities.

Part B-4: Additional Information.
16. Effects of the Environment on the Project
16.5 Wildfire
The proposed project sits in a region of Yukon with relatively high likelihood of wildfire, that could therefore pose serious risk to the project. The draft ESE Guidelines document does not require the proponent to specify how wildfire will be discovered, monitored, or fought. These are typically responsibilities of the Yukon Government using public resources, but the sufficiency of the public resources and plans with respect to the project infrastructure, and the expectations of the proponent regarding those resources, need to be described.

Recommendation 10: That this short section include a bullet requiring the proponent to describe the proponent's expectations as to what public resources (principally in terms of fire suppression) the Yukon Government will be expected to provide for fire spotting, fire surveillance, and fire fighting, including specifics on the geographical area involved.

16.6 Climate Change
16.6.1 Effects of Climate Change on the Project
This section requires the proponent to "Provide information, …, on the potential for climate change to impact the operations of the Project". Merely describing the potential impacts is insufficient, and the text does not require the proponent to describe how the project has been designed to avoid, minimize, and/or mitigate such impacts. Such information may have been provided in other sections dealing directly with project infrastructure, but this is a logical place to provide it (at least in conceptual terms).

Recommendation 11: That the section on Effects of Climate Change on the Project include information on how the project has been designed to avoid, minimize, and/or mitigate such effects and their impacts, or provides reference to other sections of the ESE Statement where such design elements have been included.

16.6.2 Greenhouse Gas Emissions
This section is placed within section 16 of the Guidelines which deals with *effects of the environment on the project*. It is misplaced, because greenhouse gas emissions from the project are predominantly *effects of the project on the environment*. It would be better situated in section B-3, dealing with VESECs (valued components that the project may impact), and given its own VESEC: Atmosphere, or perhaps included within the VESEC of Air Quality. It is essentially a question of atmospheric pollution.

Recommendation 12: That the section on Greenhouse Gas Emissions (currently 16.6.2.) be re-positioned and re-classified within the ESE Guidelines so it is not inappropriately categorized as an effect of the environment on the project (i.e. not placed in section 16).

This section is fairly thorough in the level of detail requested to assess the GHG footprint of the project. However, it is important to include some more detail to insure that the ESE is comprehensive, and that the full scope of emissions is considered in light of Yukon's contribution to the Nationally Determined Contributions. Two bulleted sections of text in the draft Guidelines need more detail:

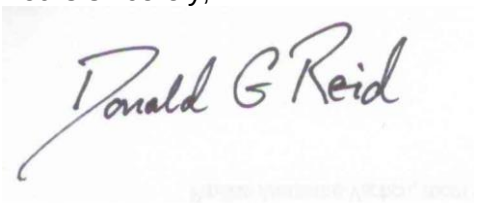
- Baseline projections of GHG emission generation, by type, over the life of the Project by source
- Provide details on GHG emissions by identifying project sources and describing GHG type(s) for each source"

These bullets and associated text do not specify the scope of "project sources" (mentioned in both bullets). An assumption could be made that sources are only those at the proposed mine footprint. That would be insufficient. The project will produce substantial GHG emissions through (i) land and soil clearing along the access road as well as at the mine site, (ii) combustion of fossil fuels to create power, and (iii) combustion of fossil fuels to transport the massive volumes of fuels (likely LNG) and mine products (ore and concentrate?) and other materials and people to and from the mine site. All these sources need to be assessed for a complete picture of GHG emissions.

Recommendation 13: That the text dealing with Greenhouse Gas Emissions (currently 16.6.2) be expanded to specify that the scope of "sources" of these Emissions must include: the clearing of land and soil (for access and operations); the combustion of fuels on site; and the combustion of fuels in the transport of materials to and from the mine at least for that component of the transport occurring within all of Yukon.

Thanks for considering these comments in future revision to the ESE Guidelines document.

Yours sincerely,



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