

ATTACHMENT

Federal Authority Advice Record: Designation Request under IAA

Response due by **May 12, 2022**

Snake Lake Reservoir Expansion Project

Department/Agency	Health Canada
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1. Has your department or agency considered whether it has an interest in the Project; exercised a power or performed a duty or function under any Act of Parliament in relation to the Project; or taken any course of action (including provision of financial assistance) that would allow the Project to proceed in whole or in part?

Not Applicable

Specify as appropriate.

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2. Is it probable that your department or agency may be required to exercise a power or perform a duty or function related to the Project to enable it to proceed?

No

If yes, specify that power, duty or function and its legislative source.

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3. If your department or agency will exercise a power or perform a duty or function under any Act of Parliament in relation to the Project, will it involve public and Indigenous consultation?

No

Specify as appropriate.

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4. Is your department or agency in possession of specialist or expert information or knowledge that may be relevant to any potential adverse effects within federal jurisdiction caused by the Project or adverse direct or incidental effects stemming from the Project?

Specify as appropriate.

As a federal authority, Health Canada will provide specialist or expert information and knowledge in the Department's possession (expertise) to support the assessment of impacts on human health from projects considered individually or cumulatively under the *Impact Assessment Act* (IAA). It should also be noted that expertise related to assessing human health that is relevant to impact assessment (IA) may be held by other federal, provincial, and municipal partners, reflecting the shared jurisdiction for environmental and human health within Canada. For example, the Public Health Agency of Canada (PHAC) has expertise in the social determinants of health approach and health equity, and may provide that expertise through Health Canada, upon request from the reviewing body(ies). How the expertise provided by Health Canada and PHAC will be used in the IA process will ultimately be determined by the reviewing body(ies).

Health Canada can provide human health expertise in the following areas:

- Air quality health effects;
- Contamination of country foods (e.g. fish, wild game, garden produce, berries, etc.);
- Drinking and recreational water quality;
- Radiological effects;
- Electric and magnetic fields;
- Noise impacts;
- Methodological expertise in human health risk assessment;
- Methodological expertise in conducting Health Impact Assessment (HIA); and
- Public health emergency management of toxic exposure events.

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5. Has your department or agency had previous contact or involvement with the proponent or other parties in relation to the Project?

No

Provide an overview of the information or advice exchanged.

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6. From the perspective of the mandate and area(s) of expertise of your department or agency, does the Project have the potential to cause adverse effects within federal jurisdiction or adverse direct or incidental effects as described in section 2 of IAA? Could any of those effects be managed through legislative or regulatory mechanisms administered by your department or agency? If a licence, permit, authorization or approval may be issued, could it include conditions in relation to those effects?

Specify as appropriate.

Health Canada reviewed the following documents and webpages:

- Enclosure1_Request for Designation_Snake Lake Reservoir Expansion Project
- Request for Designation of Snake Lake Reservoir Expansion Project under IAA – Letter to Federal Authorities
- Alberta Water Portal – Eastern Irrigation District: Projects overview webpage

There are few details in the available documents related to the areas of expertise of Health Canada (HC). However, based on the information provided and HC's experience with similar projects submitted under IAA or the *Canadian Environmental Assessment Act, 2012*, some project activities may lead to a risk of adverse human health effects. HC does not approve or issue licences, permits or authorizations in relation to development projects; therefore, none of the potential effects stated below can be managed by the department. There may be a potential for impacts to human health in the following areas:

Air Quality

There is a potential for adverse impacts to human health due to the degradation of ambient air quality through increased exhaust emissions from machinery, fugitive dust, and fuel combustion by-products during the construction phase of the Project. These emissions may include fine particulate matter, nitrogen dioxide, sulphur dioxide, diesel particulate matter, and volatile organic compounds, among other air pollutants. Without detailed information from the proponent on project emissions, the location of potential human receptors, and an assessment of the potential effects on the ambient air quality, HC cannot provide additional advice on the extent of potential adverse impacts to human health from changes to air quality.

Noise

Ambient noise levels may increase due to machinery use, construction activities, and increased traffic during the construction phases of the Project. There may be potential adverse impacts to human health from increased noise, including but not limited to sleep disturbance, speech comprehension, and the percentage change in highly annoyed. Without additional information from the proponent on the location of potential human receptors, and a noise assessment, HC cannot provide additional advice on the extent of potential adverse impacts to human health.

Water Quality

It is unclear, but if additional land is flooded to increase reservoir capacity there is the potential for conversion of elemental mercury to methylmercury. Surface water may also be impacted by spills of fuels, hydrocarbons, chemicals, and waste products during the construction phase for the Project. This has the potential to impact recreational and drinking water quality and may impact human health through dermal contact or the consumption of water. HC suggests identifying water bodies that are currently used, or may be used in the future, for recreational and cultural purposes (e.g. swimming, fishing) and that may be affected by Project activities.

Local changes to ground water patterns may also affect the quality of potable water sources, particularly for land users. HC recommends the proponent identify all drinking water sources and water bodies used for recreational activities. Additionally, identify all water bodies that are used for traditional purposes and confirm whether Indigenous users consume treated or untreated water near the Project location.

Without additional information from the proponent on the location of potential human receptors, and the identification of water sources used by the community and land users, HC cannot provide additional advice on the extent of potential adverse impacts to human health.

Country Foods

The project can potentially impact the quality of country foods from changes to the water quality and air quality previously discussed. The emissions of contaminants to the environment may lead to increased concentrations of these contaminants in country foods that are then harvested and consumed by community members, land users, and Indigenous people. Some contaminants (e.g., mercury) also have the potential to bio-accumulate in country foods. Without additional information from the proponent on country food harvesting, environmental contaminants of potential concern, and potential changes in contaminant concentrations in country foods, HC cannot provide further advice on the extent of potential adverse human health impacts.

Human Health Setting

There is no information provided on the human health setting. In order to assess potential risks to human health, it is necessary to identify locations of potential human receptors including residences and sensitive human receptor locations (i.e. schools, hospitals, retirement complexes or assisted care homes) through maps and diagrams. The distances between human receptor locations, including traditional land use locations, and the key components of the Project that may impact these receptors should be identified. A human health risk assessment (HHRA) that identifies all relevant contaminants and potential exposure pathways should also be provided. Without additional details and information on the location and characteristics of human receptors in relation to the Project, HC cannot provide further advice on the potential for risks to human health.

Cumulative Effects

Health Canada received two other requests for advice on designation requests for water reservoirs: the Deadhorse Coulee Reservoir Project and the Chin Reservoir Expansion and Modernization Project. Consideration should be given to the potential cumulative effects caused by these three reservoir projects, particularly if these projects overlap with the traditional territory of one or more Indigenous groups.

7. Does your department or agency have a program or additional authority that may be relevant and could be considered as a potential solution to concerns expressed about the Project? In particular, the following issues have been raised by the requestor:
- effects to fish and fish habitat;
 - adverse effects on migratory birds and species at risk and their critical habitats. Special concern species at risk that may be affected includes Great Plains Toad and Northern Leopard Frog. Threatened species at risk that may be affected includes Thick-Billed McCown's Longspur, Tiny Cryptantha, and Rocky Mountain Sculpin. Endangered species at risk that may be affected includes Burrowing Owl, Greater Short-horned Lizard, and Lake Sturgeon (Endangered status under COSEWIC). Other species at risk that may be affected are noted in Appendix 1 of the Request for Designation;
 - changes to the environment on federal lands, including reserve lands and Canadian Forces Base Suffield;
 - changes to the environment that occur in a province or territory other than the one where the Project is taking place, including Saskatchewan;
 - changes to the environment that occur outside of Canada;
 - contribution to climate change due to greenhouse gas emissions and loss of carbon storage capacity by converting native grasslands to irrigated agricultural lands;
 - changes to the environment that could affect the Indigenous peoples of Canada; and,
 - changes occurring to the health, social, or economic conditions of the Indigenous peoples of Canada.

No

If yes, please specify the program or authority.

8. Does your department or agency have information about the interests of Indigenous groups in the vicinity of the Project; the exercise of their rights protected by section 35 of the *Constitution Act, 1982*; and/or any consultation and accommodation undertaken, underway, or anticipated to address adverse impacts to the section 35 rights of the Indigenous groups?

Not Applicable

If yes, please specify.

9. If your department has guidance material that would be helpful to the proponent or the Agency, please include these as attachments or hyperlinks in your response.

Health Canada has published the following guidance documents for evaluating human health impacts:

Guidance for Evaluating Human Health Impacts in Environmental Assessment:

- Human Health Risk Assessment
- Air Quality
- Water Quality
- Country Foods
- Noise
- Radiological Impacts

Guidance is available here:

<https://publications.gc.ca/site/eng/search/search.html?st=1&e=0&f=0&ssti=on&ast=Guidance+for+Evaluating+Human+Health+Impacts+in+Environmental+Assessment&cnst=&adof=on&hpp=10&psi=1&rq.ssp=-5>

Guidance prepared by Health Canada on management of crude oil incidents titled "*Guidance for the environmental public health management of crude oil incidents: a guide intended for public health and emergency management practitioners*" is available as a PDF and in html format through the following link:

<http://publications.gc.ca/site/eng/9.849592/publication.html>

<Original signed by>

Brenda Woo

Name of departmental / agency responder

Regional Manager

Title of responder

May 12, 2022

Date