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ELECTRONIC MAIL

March 23, 2020

Matthew Hebert
Alberta Transportation
3rd Floor Twin Atria Building
4999 98 Avenue
Edmonton, Alberta T6B 2X3

Sent via email to: Matthew.Hebert@gov.ab.ca

Subject: Technical Review of the Information Request Responses for the Springbank Off-Stream Reservoir Project – Information Request Package 4

Dear Mr. Hebert:

The Impact Assessment Agency of Canada (the Agency) conducted a technical review of Alberta Transportation's June 14, 2019, responses to the first round of Agency information requests, and the November 5, December 10, and December 16, 2019, responses to the gaps in the information request responses for the Springbank Off-Stream Reservoir Project.

Upon review of the information, the Agency determined that there were several areas where information is still required to fully understand the potential effects of the Project to areas of federal jurisdiction. Attached is Information Request Package 4. This package concludes the second round of the technical review.

Written comments received by the Agency regarding the second round of the technical review have been provided to you and are available on the Canadian Impact Assessment Registry (Reference #80123). Alberta Transportation is encouraged to review all of the comments submitted as they include detailed information and advice not presented in the Information Request package.

In accordance with CEAA 2012, time taken by Alberta Transportation to provide the required information is not included in the legal timeframe within which the Minister of Environment and Climate Change must make the EA decision. The issuance of this Information Request Package will pause the timeline at day 209.

The Agency welcomes the opportunity to discuss the outcome of this review with you and provide further advice on how to best address the information required to move forward with the assessment process. To this end, the Agency proposes a technical workshop with federal experts and your team to facilitate a better understanding of the expectations of the Agency and federal authorities, and to ensure complete responses to information requests. In light of recent public health recommendations, we are proposing a virtual meeting or teleconference at this time. Please contact the Agency to confirm availability for a discussion during the next few weeks. If you have any questions, please contact me at Jennifer.Howe@canada.ca or <personal information removed>

Sincerely,

Jennifer Howe
Project Manager
Prairie and Northern Region

cc:
Mark Svenson, Alberta Transportation
Wayne Speller, Golder
Barbara Pullishy, Impact Assessment Agency of Canada
Anna Kessler, Impact Assessment Agency of Canada

Attachment (1): Information Request Package 4 – Technical Review Round 2 – Springbank Off-Stream Reservoir Project

Information Request Package 4 – Technical Review Round 2

Springbank Off-Stream Reservoir Project

Contents

List of Acronyms and Short Forms

Agency/IAAC	Impact Assessment Agency of Canada
CEAA 2012	*Canadian Environmental Assessment Act, 2012*
DFO	Fisheries and Oceans Canada
ECCC	Environment and Climate Change Canada
EIS	Environmental Impact Statement
EIS Guidelines	Environmental Impact Statement Guidelines
IR	Information Request
VC	Valued Component

IR4-01: Project Operation – Release Scenarios

Sources:

EIS Guidelines

EIS Volume 1, Volume 2, and Volume 3

ECCC Technical Review, June 18, 2018

DFO ANNEX 2 Technical Review, June 19, 2018

IAAC Information Requests Related to the Environmental Impact Statement Round 1 Part 1, IR1-04; Round 1 Part 3, IR3-08, IR3-09, IR3-10, IR3-11

Alberta Transportation Responses to IR Round 1, SR1 CEAA IR Package 1, June 14, 2019

DFO Round 1 IR Completeness Review Comments, June 28, 2019

ECCC Round 1 IR Completeness Review Comments, July 3, 2019

Alberta Transportation Responses to IR Round 1, SR1 CEAA IR Package 1, June 14, 2019

Alberta Transportation Responses to IR Round 3, SR1 CEAA IR Package 3, June 14, 2019

ECCC Technical Review Round 2, February 6, 2020

DFO Technical Review Round 2, February 6, 2020

Context and Rationale:

The EIS Guidelines require a description of the operation of key Project components, multiple components of hydrology of the Elbow River watershed, and changes to water quality and quantity, fish and fish habitat, and vegetation.

The EIS presented a release scenario where floodwaters would be held in the reservoir until flows in the Elbow River return to below bankfull levels (20 m^3/s) and then released. Federal authorities and Indigenous groups have raised many concerns regarding holding the water in the reservoir for an extended period of time, including potential effects from releasing dirty floodwaters back into the clear/low-flow river water, the effects to the fish entrained in the reservoir, and the effects of the settling of sediment on vegetation in the reservoir. Fisheries and Oceans Canada noted that the objective should be to return turbid water back to the system as quickly as possible while a turbid high flow scenario still exists in the river.

The Agency understands that Alberta Transportation is working on a new release scenario where draw down occurs as soon as flows in the Elbow River drop below 170 m^3/s. Given this release model, clarity for draw down times for each flood scenario (1:10, 1:100, design flood) and an analysis of potential effects to VC are needed in order to determine changes to sediment deposition, potential effects to water quality and quantity, and potential effects to fish and fish habitat. Additionally, it was discussed in the February 2020 Technical Advisory Group Meeting that it is still unclear how the capacity of the low-level outlet (27 m^3/s) was determined.

This new release scenario requires the identification of mitigation measures for effects to VCs when draw down occurs as soon as flows drop below 170 m^3/s, where as the information and mitigation presented in the EIS considers effects to VCs from holding the water until flows in the river return to below bankfull levels. The Agency understands that the actual operational release rates from the off-stream reservoir will vary depending on the circumstances at the time of the diversion and this may result in a release timing between the two scenarios presented. To fully assess potential effects of the Project, it is necessary to understand how potential effects to various parameters and VCs and associated mitigation measures would change from operations through the full range of draw down and release scenarios.

Information Requests:

a) Describe operation of the Project for the proposed new release scenario where draw down occurs as soon as flows in the Elbow River drop below 170 m^3/s.
    i. Describe the criteria that would be used to determine when and why this release scenario would be used as opposed to the one presented in the EIS.
b) For the draw down scenario described in part a), provide an analysis of potential effects and associated mitigation measures for the following parameters:
    i. Fish and fish habitat, providing specific consideration for:
        - Temperature and dissolved oxygen in the reservoir.
        - Newly listed Species at Risk Burbot – consider thermal tolerances identified by DFO and identify mitigation measure should temperatures exceed these levels.
        - Measures to attract fish to the low level outlet to ensure minimal fish stranding in the reservoir.
    ii. Water quality, providing specific consideration for:
        - Water quality in the Elbow River at the time of release.
        - Water quality in the reservoir and whether it will meet regulatory guidelines.
    iii. Sediment transport and deposition in the Elbow River
        - Settling of fine sediments on fish and fish habitat, including suitable spawning substrates and eggs.
    iv. Sediment deposition in the reservoir area and associated effects to vegetation and the current use of lands and resources for traditional purposes
c) For the draw down scenario described in a), provide a table with values demonstrating the total retention time for each flood scenario (1:10, 1:100, and design flood), including retention during flooding, draw down time, and any additional time needed for water left in the reservoir to dry out or be released.
d) Provide a rationale for the capacity of the low-level outlet (27 m^3/s).
e) Identify if any new or different mitigation would be required if draw down occurs at any point between the scenario described in a) and the scenario presented in the EIS.

IR4-02: Mercury and Methylmercury

Sources:

EIS Guidelines Part 2, Section 6.2.2, 6.3.1, and 6.4

CEAA Annex 2: A) Early Technical Issues, December 19, 2017

EIS Volume 3B, Section 7

IAAC Technical Information Requests Round 1, Package 1, IR1-06

Alberta Transportation Responses to CEAA Annex 2: A) Early Technical Issues, May 11, 2018

ECCC Technical Review, June 18, 2018

Alberta Transportation Responses to IR Round 1, SR1 CEAA IR Package 1, June 14, 2019

ECCC Technical Review Round 2, February 6, 2020

Context and Rationale:

The EIS Guidelines require the identification of any potential adverse effects to fish and fish habitat, including the potential risk of production, increase, interaction, and accumulation of contaminants, including methylmercury. In IAAC Information Requests Related to the Environmental Impact Statement Round 1 Part 1, IR1-06, the Agency required the proponent to provide baseline methylmercury data in water of the Elbow River or describe a plan to collect such data prior to proceeding with the Project.

In response to IR1-06, Alberta Transportation described total mercury concentrations in the Elbow River to be below the analytical detection limit of 0.0000050 mg/L or 5 ng/L. Methylmercury in water was not specifically measured, but Alberta Transportation estimated methylmercury concentrations to be 1-15% of total mercury, based on literature values.

ECCC notes that the method detection limit of the laboratory total mercury measurements (0.000005 mg/L or 5 ng/L) is too high for total mercury measurements in natural water bodies. For analysis of natural waters, a method detection limit of 0.1 ng/L for total mercury and 0.02 ng/L for methylmercury is commonly achieved in academic, commercial, and government mercury analytical laboratories using cold vapor atomic fluorescence spectrophotometry and is appropriate for the Project.

Application of appropriate method detection limits during baseline sampling is needed to support adequate understanding of total mercury or methylmercury baseline conditions and to support the assessment of potential effects to fish and fish habitat, and associated monitoring.

Information Request:

a) Provide a plan for collecting baseline data of total mercury and methylmercury in potentially impacted river water using an accredited laboratory with a method detection limit of 0.1 ng/L for total mercury and 0.02 ng/L methylmercury or lower and monitoring these concentrations post-flood.
    - Describe what adaptive mitigation measures could be implemented should increases in mercury or methylmercury in the reservoir water and food web in downstream ecosystems be observed.

IR4-03: Migratory Birds and Species at Risk

Sources:

EIS Guidelines Part 2, Sections 6.3.2, 6.3.3, 6.4

EIS Volume 3A, Section 11, Volume 3B, Section 11.3.4.1-2, and Volume 4, Appendix H

ECCC Technical Review, June 18, 2018

IAAC Information Requests Related to the Environmental Impact Statement Round 1 Part 1, IR1-07, IR1-08

Alberta Transportation Responses to IR Round 1, SR1 CEAA IR Package 1, June 14, 2019

IAAC Annex 1 – Gaps identified in Alberta Transportation's response to IR Round 1, Part 1, IR1-07

Alberta Transportation Responses to Agency Gaps - Package 1, Conformity IR1-07

ECCC Technical Review Round 2, February 6, 2020

Context and Rationale:

The EIS Guidelines require the identification of any potential direct and indirect adverse effects to migratory birds or their habitat, including staging and nesting areas, foraging groups, and landing sites, and to federally listed species at risk.

The EIS describes how the Project is predicted to increase bird and wildlife mortality risk in the project development area during a flood. IAAC Information Requests Related to the Environmental Impact Statement Round 1 Part 1, IR1-07, required Alberta Transportation to identify and describe mitigation measures that would be undertaken during operation to address the increase in mortality risk to birds listed under the *Migratory Birds Convention Act* and to any species listed in the *Species at Risk Act* and to provide a plan to avoid incidental take and mortality, given there is sufficient advanced notice of an impending flood. Alberta Transportation's response notes that there are no mitigation measures proposed during flood operations as it will not be possible to salvage eggs, nestlings, and amphibian species at risk due to safety concerns and the limited notice of impending flood events.

The Agency recognizes that due to safety concerns, effects to migratory birds and species at risk in the reservoir area during flooding are unavoidable and the frequency of flooding the reservoir will be low. However, the February 2020 Technical Advisory Group meeting and associated conversations identified some plans and measures that Alberta Transportation can take to minimize potential effects to migratory birds on a case by case basis. It is important for the Agency to understand how Alberta Transportation and/or Alberta Environment and Parks will endeavor to avoid potential effects to migratory birds and species at risk and comply with the *Migratory Bird Convention Act* and *Species at Risk Act*.

Information Request:

a) Provide the principles and criteria that will be used to select mitigation for the potential effects to migratory birds and species at risk present in the reservoir area during seasons when use of the Project is anticipated.

IR4-04: Air Quality

Sources:

EIS Guidelines Part 2, Sections 6.1.1; 6.1.9; 6.2.1; 6.3.4; 8

EIS Volume A, Section 3, 5.4.4; Volume 3B, Section 3, 15.4.2.3; and Volume 6, Section 2.2

ECCC Technical Review, June 18, 2018

HC Comments on the EIS – June 15, 2018

IAAC Technical Information Requests Round 1, Package 3, IR3-35

Alberta Transportation Responses to IR Round 1, SR1 CEAA IR Package 3, June 14, 2019

ECCC Technical Review Round 2, February 6, 2020

Health Canada Technical Review Round 2,

Context and Rationale:

The EIS Guidelines require a description of baseline air quality levels and changes in air quality, as well as an assessment of the effects of changes to air quality on Indigenous peoples.

IAAC Information Requests Related to the Environmental Impact Statement Round 1 Part 3, IR3-35, required Alberta Transportation revise the air quality assessment to consider the 2017 Canadian Ambient Air Quality Standards (CAAQS) for nitrogen dioxide (NO_2) and provide specific measures to mitigate the potential risk for adverse health effects from air contaminants.

In response to IR3-35, Alberta Transportation describes the intent to develop a monitoring plan and potential air quality mitigation. Providing this draft air quality management plan would be beneficial for the Agency to understand proposed monitoring and mitigation for potential effects to Indigenous peoples' health.

Additionally, in response to IR3-35, Alberta Transportation noted that the Project is predicted to exceed the CAAQS for 1-hour NO_2 during the Application Case and for 24-hour and annual $PM_{2.5}$ in both the Project and Application case. Alberta Transportation proposed monitoring for $PM_{2.5}$ and the implementation of additional mitigation measures if the Alberta Ambient Air Quality Objectives (AAAQO) are exceeded; however, no visual monitoring is proposed. In the February 2020 Technical Advisory Group Meeting, Rocky View County identified the need for visual monitoring of dust and implementation of adaptive mitigation measures.

Alberta Transportation does not propose any monitoring or mitigation of NO_2 emissions. Health Canada noted that NO_2 is a non-threshold air contaminant, which means that health effects may occur at any level of exposure. Collecting NO_2 data is important even if there is no adaptive mitigation in place as this data can be reported and available for public knowledge and use.

Understanding potential exceedances in CAAQS is important for the Agency to understand the potential effects of changes to air quality on Indigenous peoples' health. Health Canada noted that the CAAQS are health and environment-based environmental quality guidelines intended to be benchmarks against which the Government of Canada and provincial and territorial governments can use to inform risk management decisions (e.g., regulation or other actions to reduce air pollution) as well as report on progress on reducing the health and environmental burden of air pollution. The CAAQS represent targets agreed upon by federal and provincial/territorial governments and a multi-stakeholder group. The program under which CAAQS exist (the Air Quality Management System or AQMS) was an approach championed by several parties including industry, environmental and health groups and some governments. As such, they have a broad basis of legitimacy and are the appropriate metric against which to assess environmental and health impacts of air pollution. The CAAQS are not designed to be pollute up to levels, but levels where increasing risk management and adaptive management should be used to implement mitigation to prevent an increased risk to human health.

Information Request:

a) Provide a draft air quality management plan that includes:
    - CAAQS as targets for implementation of the plan;
    - consideration of visual monitoring and adaptive mitigations for $PM_{2.5}$;
    - commitments to continuous monitoring of NO_2 and reporting to appropriate regulatory body and/or public source; and
    - adaptive mitigation measures should NO2 exceed CAAQS.

IR4-05: Project Area Land Use and Access

Sources:

EIS Guidelines Part 2, Section 6.1.9; 6.3.4

EIS Volume 1, Sections 1.3.2.1; 1.3.2.2

Louis Bull Tribe – EIS Review Submission, June 18, 2018

Piikani Nation – Technical Review of EIS, June 15, 2018

Tsuut'ina First Nation, Ermineskin Cree Nation, and Kainai First Nation – Technical Review of the EIS – Annexes – Combined

Ermineskin Cree Nation and Blood Tribe – Springbank EIS Technical Comments

IAAC Information Requests Related to the Environmental Impact Statement Round 1 Part 2, IR2-09

Alberta Transportation Responses to IR Round 1, SR1 CEAA IR Package 2, June 14, 2019

IAAC Annex 1 – Gaps identified in Alberta Transportation's response to IR Round 1, Part 2

Alberta Transportation Responses to Agency Gaps - Package 2

Kainai Nation/Blood Tribe Comments Technical Review Round 2, February 6, 2020

Ermineskin Cree Nation Comments Technical Review Round 2, February 6, 2020

Context and Rationale:

The EIS Guidelines require an assessment of effects of changes to the environment on Indigenous peoples' current use of lands for traditional purposes, including any chances to the alienation of lands from Indigenous traditional use.

In the gaps identified in Alberta Transportation's response to IR2-09, the Agency required an updated Draft Principles for Future Land Use of the Proposed Springbank Off-Stream Reservoir that identified conditions under which Indigenous land use would be permitted and any measures or commitments by Alberta Transportation and/or Alberta Environment and Parks, to promote, enhance, or ensure Indigenous land use.

In response to gap IR2-09, Alberta Transportation provided updated draft principles for land use, which noted that secondary uses of the project area would be determined after engagement with First Nations and stakeholders and secondary use for the exercise of rights "may" be considered a priority. Commitments within the document do not provide certainty for continued Indigenous use of the area.

Additionally, the document notes that traditional activities, including the exercise of treaty rights such as hunting, will be allowed as a secondary use. In the February 2020 Technical Advisory Group Meeting, it was identified that use for hunting conflicts with other uses for safety reasons.

It is important for the Agency to understand how Alberta Transportation/Alberta Environment and Parks intend to manage the land use of the project area to understand effects to Indigenous people's current use of the lands for traditional purposes.

Information Requests:

a) Describe the principles that Alberta Transportation/Alberta Environment and Parks will use to prioritize secondary land uses, and how competing land uses will be managed.
b) Describe how land use will be managed to support current use of lands for traditional purposes and the exercise of rights.
c) Should the project area be managed in a way that does not support certain current land uses, identify other mechanisms available for the Government of Alberta to enhance or protect this use elsewhere.
d) Describe commitments and opportunities for Indigenous groups to participate in decisions related to the management of the land.
e) Discuss related recommendations from Indigenous groups.