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November 16, 2017

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

Sent via email: Mark.Svenson@gov.ab.ca

SUBJECT: Outcome of conformity review of the Environmental Impact Statement for the Springbank Off-Stream Reservoir Project

Dear Mr. Svenson:

On October 17, 2017, the Canadian Environmental Assessment Agency (the Agency) received the Environmental Impact Statement (EIS) and EIS Summary for the Springbank Off-Stream Reservoir Project (the Project) from Alberta Transportation (the proponent).

The Agency has reviewed the EIS and determined that the it does not fully conform to the requirements outlined in the *Guidelines for the Preparation of an Environmental Impact Statement pursuant to the Canadian Environmental Assessment Act, 2012 for the Springbank Off-Stream Reservoir Project* (EIS Guidelines), issued to Alberta Transportation by the Agency on August 10, 2016. Advice on the conformity of the EIS was provided to the Agency by Fisheries and Oceans Canada, Environment and Climate Change Canada, Health Canada, Transport Canada, Natural Resources Canada, and Infrastructure Canada.

Alberta Transportation is required to address the EIS deficiencies identified in Annex 1 (attached) before the federal environmental assessment can proceed to the detailed technical review and public comment period. Based on the nature of the deficiencies, the Agency has determined that the proponent must submit a fully revised EIS that includes insertions or changes made throughout the EIS main text, Addenda, and EIS Summary. The Agency anticipates sending an additional Annex in the near future, for your consideration, that will contain (but may not be limited to) advice and early

indications of technical deficiencies that would lead to information requests following the technical review of the EIS.

The outcome of this conformity review, including this letter and Annex, will be shared with federal authorities and Indigenous groups and will be posted on the Canadian Environmental Assessment Registry Internet Site found at http://www.ceaa.gc.ca/050/details-eng.cfm?evaluation=80123 .

Upon receipt of a revised EIS and EIS Summary, the Agency will conduct a conformity review of the revised documents in accordance with its *"Operational Policy Statement: Information Requests and Timelines, February 2016"* https://www.ceaa-acee.gc.ca/Content/E/6/5/E65B85D2-1F68-4E0C-A405-4322BB425454/OPS-Information_Requests_and_Timelines.pdf. If the deficiencies are not addressed, the Agency will identify to Alberta Transportation the information that remains outstanding.

If the Agency determines that the revised EIS conforms to requirements, the Agency will commence the technical review of the EIS. This involves posting the documents on the Agency's website for public comment; Indigenous groups' review and comment; and review by the Agency's Technical Advisory Group for the Project, which includes subject matter experts in federal departments; municipalities and Indigenous groups. The Agency would then consider comments received, and request additional information, as required, until it has sufficient information to prepare the Environmental Assessment Report to inform the Minister of Environment and Climate Change's decisions under the *Canadian Environmental Assessment Act, 2012* (CEAA 2012).

The Agency welcomes the opportunity to discuss the outcome of this conformity review with you and provide further advice on how to best address the information requirements identified. If you have any questions, please contact me at 780-495-2580 or via email at CEAA.Springbank.ACEE@ceaa-acee.gc.ca.

Sincerely,

Shelly Boss
Project Manager

Cc. Margot Trembath, Alberta Environment and Parks
Miles Zurawell, Environment and Climate Change Canada
Melissa Gorman, Health Canada
Jackie Barker, Transport Canada
Deborah Campbell, Natural Resources Canada
Kyle Antonchuk, Fisheries and Oceans Canada
Arkin, Infrastructure Canada
Mai-Linh Huynh, Canadian Environmental Assessment Agency

Annex 1: Information Required to Conform with the EIS Guidelines

(1) EIS Summary

Context and Rationale

Part 1, Section 4.5 of the EIS Guidelines require the proponent to provide a summary of the EIS to the Agency as a separate document that follows a specific structure and that includes specified information. The purpose of the EIS Summary is to provide a concise yet thorough summary of the Project, effects assessment, and conclusions that allows for public review. Notwithstanding that access to all EIS documentation is enabled through the Canadian Environmental Assessment Registry (CEAR) Internet Site, the EIS Summary is the main document distributed for review during the public comment period.

Alberta Transportation has provided an Executive Summary which is structured appropriately but does not have sufficient detail for readers to learn and understand the Project, potential environmental effects as a result of the Project, cumulative effects, mitigation measures, and the significance of residual effects. In general, the level and breath of information included in the EIS Summary needs to be increased. For example, the EIS Summary does not adequately describe the project phases (e.g., what is involved in construction, dry operations, flood and post flood operations) and requires additional detail on Project components and activities (e.g., dimensions of storage dam, relocation of utilities (i.e., pipelines and transmission lines). Examples of additional information required for the effects assessment include: baseline conditions for each valued component (VC), potential interactions of the Project with the environment, key specific mitigation measures such that the evidence used to draw conclusions on significance of residual effects is clear.

Examples of sufficient EIS Summaries can be viewed on the CEAR.

Information Required to Conform

Provide an updated EIS Summary in English and French that incorporates any changes or revisions made to the EIS in response to information requirements outlined in this document and includes:

a) a concise description of all key components of the Project, related activities and alternative means assessment with sufficient detail to provide the reader with an understanding of the key Project activities, their potential interactions with the environment, and the potential adverse effects resulting from those interactions;

b) a summary of the consultation conducted with Indigenous groups, the public, and government agencies, including a summary of the issues raised and the proponent's responses;

c) a summary of the environmental and cumulative effects assessment for each VC, including a clear articulation of baseline information, anticipated changes to the environment, anticipated effects,

mitigation measures and significance of residual effects. Ensure the key information used to arrive at conclusions is evident for readers; and

d) additional information regarding follow-up and monitoring programs, including a description of the monitoring program, intervention mechanisms in the event of non-compliance with legal and environmental requirements, and any opportunities for the participation of Indigenous peoples in monitoring.

(2) Concordance Table

Context and Rationale

Part 1 Section 4.4 of the EIS Guidelines require that the proponent include a table of concordance, which cross references the information presented in the EIS with the information requirements identified in the EIS Guidelines. Given that the information included in the EIS is intended to meet the requirements of both CEAA 2012 and applicable provincial legislation, a well referenced CEAA concordance table with correct referencing is critical.

The concordance table provided in Volume 4, Appendix A lacks the rigorous referencing required to ensure technical reviewers do not miss critical information that appears throughout the various documents and reports. For example, under Part 2 Section 4 of the EIS Guidelines (Public Participation and Concerns) Alberta Transportation's concordance table only indicates that Volume 1, Section 6.0, 6.1 and 6.3 provides the information required. A review of the EIS and Appendices reveal that Sections 6.0-6.3 present a high level summary of Public engagement and concerns, but that the Appendix B, Consultation and Engagement, contains more detailed information on Public engagement.

All references should be provided and clearly delineated even when the information can be dispersed across a chapter, or multiple sections.

Information Required to Conform

a) Submit a comprehensive table of concordance which rigorously and accurately cross-references the information presented in the complete EIS with information requirements identified in the EIS Guidelines.

(3) Alternative Means of Carrying out the Project

Context and Rationale

Part 2 Section 2.2 of the EIS Guidelines requires the proponent to identify and consider the effects of alternative means of carrying out the Project that are technically and economically feasible, including the location of the Project; Project component configurations; routing and realignment of access roads; modifications to pipelines and transmission lines (if under care and control of the proponent);

construction methods for instream components; reservoir capacity selection; and project design components related to environmental effect mitigation, such as sediment control, navigation, and fish movement.

Volume 1, Section 3.0 of the EIS provides a description of the various Project components including the diversion system (floodplain berm, access road, auxiliary spillway, diversion structure, and diversion inlet), diversion channel, emergency spillway, off stream reservoir, off stream dam, and lower outlet works. The EIS includes information on the Project Alternatives considered and a detailed comparison of the Project with a location upstream on the Elbow River near McLean Creek. However, there is no description of the alternative means considered for the specific Project components and design components listed in Part 2 Section 2.2 of the EIS Guidelines, other than the design criteria outlined in Volume 1 Section 3.1 of the EIS. There is no description of the evaluation criteria considered (e.g., the approach used in identifying a preferred means), including the environmental effects used to evaluate the alternative means.

Information Required to Conform

a) Update the EIS and EIS Summary, as applicable, to include an alternative means assessment in accordance with the Agency's Operational Policy statement entitled "Addressing "Purpose of" and "Alternative Means" under the Canadian Environmental Assessment Act, 2012" for the main Project components including the diversion system components, diversion channel, emergency spillway, off stream dam, lower outlet works, and for Project design components related the construction of instream components, sediment control, navigation or fish movement . The procedural steps to be addressed in the alternative means assessment include the following:

   i. An analysis of alternative means for the main Project components and for Project design components described above;

   ii. Identification of the evaluation criteria for the alternative means analysis; and

   iii. An assessment of the environmental effects (as per Section 5 CEAA 2012) for the alternative means considered.

(4) Atmospheric Environment

Context and Rationale

Part 2, Section 6.2.1 the EIS Guidelines requires the proponent to carry out appropriate atmospheric dispersion modelling of the main contaminants in order to estimate the contaminant concentrations present in the entire area that could potentially be affected by atmospheric emissions resulting from various Project-related activities (sources), including the deposition of sediment within any areas of the Project that will be temporarily flooded. The proponent will be required to compare anticipated air quality against the *Canadian Ambient Air Quality Standards* (CAAQS) for fine particulate matter.

The EIS hydrological modelling predicts that during flooding, sediment deposits greater than 10 cm thick will cover an area of approximately 143 ha. Once dried, this deposited sediment represents a large potential area source of fugitive dust emissions. The EIS states that natural mitigation (in the form of vegetation) and additional mitigation measures will ensure that fugitive dust levels will be "minimal." However, the analysis of the potential for dust emissions is purely qualitative. A quantitative estimate of the level of fugitive dust emissions was not provided and dispersion modelling was not carried out. An estimate of the level of mitigation that would be expected to be achieved (i.e. percentage) was also not provided. The potential for high levels of sediment deposition during major floods to kill vegetation (thereby reducing natural mitigation) was also not considered.

Information Required to Conform

Update the EIS and EIS summary, as applicable, to include the following information:

a) Provide a quantitative analysis (including dispersion modelling), to determine the potential impact of dust to the area in a post-flood scenario, including a comparison of estimated particulate matter levels ($PM_{2.5}$, PM_{10}, and TSP) to appropriate guidelines (including the CAAQS).

b) Provide additional evidence to demonstrate that the emission of dust from dried deposited sediment is effectively mitigated, including a description of specific mitigation measures and their proposed effectiveness, and follow-up and monitoring which will be implemented to verify the accuracy of the predictions /determine the effectiveness of the mitigation measures.

c) Update the assessment of effects (direct, cumulative, and from accidents and malfunctions) for atmospheric environment and other VCs that are associated with changes to atmospheric environment (e.g., human health), and monitoring and follow-up programs, as appropriate.

(5) Hydrogeology

Context and Rationale

Part 2, Section 6.1.4 and 6.2.2 of the EIS Guidelines requires baseline characterization of local and regional hydrogeology and predicted changes to groundwater, respectively. The EIS does not include the Volume 4: Appendix I: Hydrogeology Technical Data Report, which is referenced as supporting information throughout the EIS Volumes 3A and 3B Sections 5.

Part 2, 6.2.2 of the EIS Guidelines requires the proponent to carry out modelling as required to present and substantiate anticipated changes to groundwater and surface water in all operational scenarios.

The effects assessment for hydrogeology during the construction and dry operations phase of the Project primarily uses qualitative assessment techniques rather than predictive modelling and corresponding quantitative assessment. In Volume A 5.4.1 (p.32) the proponent asserts "…, the locations requiring dewatering, depths of excavations required, and duration of dewatering required are site specific and will depend upon the final design elevations for project components, water table elevations

at given location and time of construction, construction timeframes and logistics, and other factors that have not been finalized at this time. This precludes the use of analytical or numerical (quantitative) assessment techniques that rely upon strict definition of these parameters".

A quantitative assessment is necessary to substantiate the conclusion made in Section 5.5 of Volume 3A that construction and dry operations phases of the Project would not decrease the yield of groundwater supply wells to the point where they can no longer be used.

Information Required to Conform

Update the EIS and EIS summary, as appropriate, to include the following information:

a) Provide a finalized version of the missing Appendix I, Hydrogeology Technical Data and make any associated updates to the EIS, including to Volumes 3A and 3B, Hydrogeology.

b) Provide a quantitative hydrogeology assessment during the construction and dry operations phase, using conceptual or preliminary designs for project components where necessary.

c) Update the effects assessments (direct, cumulative, and from accidents and malfunctions) for hydrogeology and other VCs that are associated with changes to hydrogeology, e.g., fish and fish habitat, migratory birds and their habitats, federal lands, and Aboriginal health including drinking water, and monitoring and follow-up programs, as appropriate.

(6) Water Management

Context and Rationale

Part 2, Section 3.2.1 and 3.2.2 of the EIS Guidelines requires that details of water management should be included throughout each Project component and that a detailed water management plan be included.

The EIS states that for water management during construction, "the details of the methods (for instream works), and any proposed modifications will be the responsibility of the contractor." The details provided on water management, during a flood event are limited, as are details on post flood management. Although the diversion flow rate at the commencement of a flood and the time to drain the reservoir are provided, these do not fulfill the requirement of a detailed water management plan. A detailed water management plan and additional details on water management, including water management scenarios related to all components of the Project, are necessary to understand potential changes to water quality, which may affect fish and fish habitat.

Information Required to Conform

a) Update the EIS and EIS Summary, as applicable, to provide a detailed water management plan outlining how water will be managed through all stages of the Project (Construction through Post-Flood) to mitigate potential adverse effects from the Project on water quality.

(7) Surface Water Quality

Context and Rationale

Part 2, Section 6.2.2 and 6.3.1 of the EIS Guidelines requires that any changes to TSS, turbidity, oxygen levels, water temperature, pH, dissolved oxygen, ice regime, water quality including metals, methyl mercury, nutrients, dissolved/total organic carbon, biological oxygen demand, carbonaceous biochemical oxygen demand, pesticides, aquatic indicators, and sediment quality be included in the EIS.

Volume 3B, Section 7 of the EIS (Table 7-1) only acknowledges TSS, temperature, dissolved oxygen, and methyl mercury in their effect pathway, and the only measurable parameters listed are total phosphorus, and methylmercury. In addition, only TSS, temperature, dissolved oxygen, and methyl mercury are either qualitatively or quantitatively assessed to predict the concentrations that may be discharged back to the Elbow river post-flood. This information is not sufficient to understand potential environmental effects to water quality, which may impact fish and fish habitat and other VCs.

Information Required to Conform

Update the EIS and EIS summary, as appropriate, to include the following information:

a) Discuss all water quality parameters listed in the EIS Guidelines with regards to their potential to change in concentration during the flood and post-flood operations of the Project, including within the reservoir and during discharge back to the Elbow River.

b) Complete modelling for all parameters so that an accurate representation of the water quality being discharged back to the Elbow River is presented, or provide a robust rationale as to why estimates for certain parameters would not be required for the assessment of predicted effects.

c) Update the assessment of effects (direct, cumulative, and from accidents and malfunctions) for surface water quality and other VCs that are associated with changes to surface water quality, and monitoring and follow-up programs, as appropriate.

(8) Fish and Fish Habitat

Context and Rationale

Part 2, Section 6.1.5 of the EIS Guidelines requires a characterization of fish populations on the basis of species and life stage, abundance, distribution, and movements, including information on the surveys carried out and the source of data available (e.g. location of sampling stations, catch methods, date of catches, species); and maps, at a suitable scale, indicating the surface area of potential or confirmed fish habitat for spawning, nursery, feeding, overwintering, migration routes, etc.

Part 2, Section 6.3.1 of the EIS Guidelines require the identification of any potential adverse effects to fish and fish habitat as defined in subsection 2(1) of the *Fisheries Act*, including the calculations of any potential habitat loss (temporary or permanent) in terms of surface areas (e.g. spawning grounds, fry rearing areas, feed), and in relation to watershed availability and significance.

The EIS acknowledges that, the "Likelihood of harm is a function of fish species distribution, abundance, and life stage relevant to the Project and specific sensitivities of fish to Project activities in the LAA.". However, the EIS does not include an assessment of fish abundance and distribution, and is missing maps of fish habitat distribution.

Information Required to Conform

Update the EIS and EIS summary, as appropriate, to include the following information:

a) Provide an assessment of fish abundance and distribution.

b) Provide a description of the likely effects of the proposed work, undertaking or activity on fish that are part of a commercial, recreational or Aboriginal fishery, or on fish that support such a fishery, and the likely effects on the habitat of those fish. Include: the fish species likely to be affected and the life stages of the individuals of those species; and the extent and type of fish habitat that is likely to be affected.

c) Provide maps/diagrams of fish habitat at the proposed work, undertaking, or activity, and the area likely to be affected by the proposed work, undertaking, or activity. Describe the extent and type of fish habitat likely to be affected.

d) Update the assessment of effects (direct, cumulative, and from accidents and malfunctions) for fish and fish habitat and other related VCs, and monitoring and follow-up programs, as appropriate.

(9) Migratory Birds

Context and Rationale

Part 2, Sections 6.2.3 and 6.3.2 of the EIS Guidelines requires the proponent to assess the environmental effects of the Project on migratory birds and their habitats, respectively.

The EIS notes the potential for 54 bird species to find suitable habitat in the area of the Project, and that 79 bird species were recorded during field surveys. These include bird species listed under the *Migratory Birds Convention Act*, federal listed species at risk, and culturally important species and species important to Indigenous current use of resources (Volume 3A, Section 11; Appendix H: Wildlife Technical Reports).

In the EIS, the Olive-sided Flycatcher and Sprague's Pipit, two bird species which are species at risk, have been selected as indicators under the Valued Component of Wildlife and Biodiversity. Potential direct and indirect effects to migratory birds other than these two species are not specifically assessed and no

specific determination or assessment of environmental effects of the Project on migratory birds is provided as required by the EIS Guidelines.

Information Required to Conform

Update the EIS and EIS summary, as applicable, to include the following information:

a) Provide the information required by Section 6.2.3 and 6.3.2 of the EIS Guidelines for the migratory bird species identified in the EIS as potentially affected by the Project construction and operation, and update any associated analyses throughout the EIS, including cumulative effects, accidents and malfunctions, and current use of land and resources for traditional purposes.

b) Alternately, provide a robust rationale for how the assessment of effects to two migratory bird species is sufficiently representative of Project effects to migratory birds. For example, describe how the information provided through habitat suitability modelling for five key indicator Wildlife species (EIS Section 11, Vol 3A/3B, and Appendix H) supports conclusions on significance of the Project's residual effects to all migratory birds (e.g., birds listed under the *Migratory Birds Convention Act*) and bird species at risk.

c) Describe specific mitigation measures which would be implemented to address potential effects, assess residual effects to migratory birds, and describe follow-up and monitoring which will be implemented to verify the accuracy of the predictions and assess the effectiveness of any mitigation measures.

(10) Species at Risk

Context and Rationale

Part 2, Section 6.3.3 of the EIS Guidelines requires the proponent to identify the potential effects of the Project on federally listed species at risk and those species listed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) classified as extirpated, endangered, threatened or of special concern (flora and fauna) and their critical habitat; and to identify any potential direct or indirect effects on those identified species at risk.

The EIS and EIS Summary state that, "Twelve species at risk listed on the federal *Species at Risk Act* (SARA) have the potential to occur in the RAA: yellow rail, long-billed curlew, red knot, short-eared owl, common nighthawk, peregrine falcon, olive-sided flycatcher, loggerhead shrike, Sprague's pipit, rusty blackbird, little brown myotis, and northern leopard frog." This is not consistent with elsewhere in the EIS and appended technical reports (Appendix H, Wildlife Technical Report), which indicate the potential for nine additional species to occur. For example, barn swallow and bank swallow are noted in the EIS as observed, along with their colonial nesting sites in field surveys of the Project area. Horned grebe, little brown myotis, and western tiger salamander are noted in the EIS as observed in historical field studies. Baird's sparrow, bobolink, American badger, and western toad are described as potentially occurring in the RAA. Of these federally listed species, the EIS includes effects assessment information for only three

SARA listed species, Olive-sided Flycatcher, Sprague's Pipit, and Northern Leopard Frog, and one COSEWIC assessed species, Grizzly Bear. Potential direct and indirect effects to the other identified species at risk (federal species at risk, including both SARA listed and COSEWIC assessed such as those identified in the EIS in Table 3-12, Appendix H) are not specifically addressed in the proponent's assessment.

Information Required to Conform

Update the EIS and EIS summary, as applicable, to include the following information:

a) Provide species-specific information regarding potential effects of the Project on federally listed species at risk and those species listed by COSEWIC (21 species in total).

b) Provide proposed mitigation measures to avoid effects and follow-up and monitoring commitments for SARA listed and COSEWIC assessed species noted in the EIS to support the description of potential direct and indirect effects to these species. Consider available recovery strategy documents in these assessments.

c) Update any associated analyses throughout the EIS, e.g., cumulative effects, accidents and malfunctions, and current use of land and resources for traditional purposes.

(11) Traditional Territories

Context and Rationale

Part 2, Section 1.3 of the EIS Guidelines requires the proponent to provide a description of traditional territories as part of the Project location information and Part 2, Section 6.1.9 of the EIS Guidelines requires that that the proponent provide the location of traditional territories (including maps where available) for each Indigenous group identified in Part 2, Section 5.1 of the EIS Guidelines. The EIS does not include information on traditional territories.

Information Required to Conform

a) Update the EIS and EIS Summary, as applicable, to provide information (e.g., maps and descriptions) on the traditional territories for each Indigenous group identified in Part 2, Section 5.1 of the EIS Guidelines, and a rationale for any exclusions.

(12) Engagement Activities

Context and Rationale

Part 2, Section 5.1 of the EIS Guidelines requires the proponent to describe all efforts, successful or not, taken to solicit the information required from Indigenous groups to support the preparation of the EIS, and to share these records with the Agency.

The EIS states that, “Alberta Transportation has documented and will continue to document engagement activities with Indigenous groups, as well as any issues, concerns, and recommendations raised by Indigenous communities; Alberta Transportation will prepare a final report outlining all engagement activities with each Indigenous group.” The EIS also states that, “Records of key issues, concerns, and recommendations shared by each Indigenous group and the follow-up responses and outcomes has been included in a confidential file submitted to AEP and the CEA Agency.” No such report or file has been submitted to the Agency or included in the EIS.

Information Required to Conform

a) Respecting any confidentiality commitments made to Indigenous groups, provide a report of all proponent engagement activities to date, including records of key issues, concerns and recommendations shared by each Indigenous group and the follow-up responses and outcomes.

(13) Aboriginal Peoples - Current Use of Land and Resources

Context and Rationale

Part 1, Section 4 of the EIS Guidelines requires that the proponent will provide Indigenous groups the opportunity to review and provide comments on the information used for describing and assessing effects on Aboriginal peoples (further information on engaging with Indigenous groups is provided in Part 2, Section 5 of the EIS Guidelines). Where there are discrepancies in the views of the proponent and Indigenous groups on the information to be used in the EIS, the EIS will document these discrepancies and the rationale for the proponent’s selection of information.

The Agency's draft technical guidance "Assessing the Current Use of Lands and Resources for Traditional Purposes under CEAA 2012" states that, “If, instead of conducting a new Traditional Land Use Study as part of the EA, the EA relies on previous studies, their original purpose should be transparent and they should reflect the views and knowledge of the Aboriginal group. It is best practice to seek the permission of Aboriginal groups prior to using existing studies and that these studies be validated in the current context. If significant time has elapsed since the study was completed, consideration should be given to conducting new research to update the previous study.”

The assessment of current use of lands and resources for traditional purposes in the EIS relies heavily on secondary sources of baseline information. The original purpose of the references used for the baseline is not described. It is also unclear whether permission from Indigenous groups was sought to use existing studies and whether the information was validated in the current context.

The EIS states that, “Additional TUS reports are anticipated from Tsuut’ina Nation and Stoney Nakoda Nations. Alberta Transportation will review the TUS reports. TLRU information received after the EIS has been filed will be used for project planning and design purposes, where appropriate.” The Agency must be notified of any additional traditional use reports submitted by Indigenous groups and of any

proponent considerations made in response to these reports (e.g. changes to follow-up and monitoring commitments, mitigation measures, or project plans and design).

Information Required to Conform

a) Confirm whether permission from Indigenous groups was sought to validate the baseline traditional use information presented in the EIS. If permission was not granted by an Indigenous group, provide reasons why. Provide documentation of the validation process including any discrepancies in the views of the proponent and Indigenous groups on the current use information used in the EIS.

b) As an addendum to the baseline information presented in Vol 3A, Section 14.2 of the EIS, describe the rationale for selecting each study cited in the literature review.

c) Should any traditional use reports be filed prior to the submission of the revised EIS, amend the EIS to incorporate findings of these additional traditional use reports.

(14) Aboriginal Peoples – Country Foods

Context and Rationale

Part 2, Section 6.1.9 and 6.3.4 of the EIS Guidelines requires an assessment of the consumption of country foods.

Country foods are foods which are trapped, fished, hunted, harvested or grown for subsistence or medicinal purposes, or obtained from recreational activities such as sport fishing and/or game hunting. The EIS provides a list of country foods harvested in the region of Southern Alberta based on a literature review, however, details regarding which country foods are harvested within the PDA, where they are harvested, and frequency of consumption is not provided. While there would be limited access to the PDA during construction and dry dam operations (i.e. within Area A - Conservation Zone and potentially in Area C – Option for Lease/Grazing), opportunities for the harvesting of country foods could remain.

The EIS does not include an assessment of effects to country foods during Project construction, dry dam operations, and flood and post-flood operations.

Information Required to Conform

Update the EIS and EIS summary to include the following information:

a) Provide an assessment of country foods, describing what is available in all areas to be impacted by the Project, include predicted rates of consumption, and assess which country foods may be contaminated by Project activities throughout all Project phases, for example through airborne dust deposition on plants.

b) Substantiate any conclusions and clearly state any assumptions, if secondary sources such as literature-based information are used, to determine baseline rates of consumption and predicted effects.

c) Update the assessment of effects (direct, cumulative, and from accidents and malfunctions), other relevant VCs, and monitoring and follow-up programs, as appropriate.

(15) Aboriginal Peoples – Drinking and Recreational Waters

Context and Rationale

Part 2, Section 6.1.9 of the EIS Guidelines requires baseline information on drinking water sources, with respect to current use of lands and resources for traditional purposes, and drinking and recreational water sources, with respect to health and socio-economic conditions. Part 2 Section 6.3.4 of the EIS Guidelines requires a description and analysis of how changes to the environment caused by the Project will affect Aboriginal peoples.

The EIS does not provide details on the location of drinking and recreational water sources (permanent, seasonal, periodic, or temporary) used by Indigenous peoples and does not address potential effects of changes to recreational waters on Indigenous peoples.

All sources of drinking and recreational water should be identified within the area of potential impact, given that there is some public access to areas in the PDA during all phases of the Project, including opportunities for recreation post-construction within the PDA.

Information Required to Conform

Update the EIS and EIS summary to include the following information:

a) Provide a description, including any maps, of sources and use of drinking and recreational water (permanent, seasonal, periodic, or temporary), including springs referred to in the EIS, used by Indigenous groups.

b) Provide an assessment of potential effects of changes to drinking and recreational waters on Indigenous peoples for all phases of the Project.

c) Update the assessment of effects (direct, cumulative, and from accidents and malfunctions), other relevant VCs, and monitoring and follow-up programs, as appropriate.

(16) Aboriginal Peoples – Human Health and Socio-economic Conditions

Context and Rationale

Part 2, Section 6.1.9 and 6.3.4 requires a description of baseline conditions and analysis of how changes to the environment caused by the project will affect Aboriginal peoples.

The EIS does not differentiate between Indigenous and non-Indigenous receptors for the public health, acoustics, or socio-economic assessments.

Information Required to Conform

Update the EIS and EIS summary, as applicable, to include the following information:

a) Provide an updated receptors list identifying the locations where Indigenous receptors are present.

b) Clearly describe the location and distance from the project site(s) of each potential human receptor (permanent, seasonal or temporary), considering the different types of land uses (e.g. residential, recreational, industrial, etc.); and identifying all sensitive receptor locations (e.g. schools, hospitals, retirement complexes or assisted care homes).

c) Update the assessment of effects of the Project to human health in a manner that differentiates between the Indigenous and non-Indigenous population, including any seasonal and temporary Indigenous receptors (e.g. cabins, camps).

d) Update the assessment of effects of the Project on socio-economic conditions in a manner that differentiates between the Indigenous and non-Indigenous commercial activities and recreational uses of the Elbow River.

(17) Regulatory framework and the role of government; Federal Decisions

Context and Rationale

Part 2 Section 1.4 of the EIS Guidelines requires the proponent to identify any federal power, duty or function that may be exercised that would permit the carrying out (in whole or in part) of the Project or associated activities. Part 2, Section 6.3.5 of the EIS Guidelines requires the proponent to describe effects as a result of a federal decision based on the changes to the environment that have been identified in Section 6.2 of the EIS Guidelines.

The EIS Section 1.3 lists federal legislation (Acts), but does not identify permits or approvals that may be required under legislation to permit the carrying out (in whole or in part) of the Project or associated activities.

Information Required to Conform

Update the EIS and EIS summary, as applicable, to include the following information:

a) A description of any federal permits, approvals or funding that may be applicable to the carrying out of the Project or associated activities such as under the *Fisheries Act* or the *Navigation Protection Act*, and the specific Project components for which these may be required.

(18) Federal Lands

Context and Rationale

Part 2, Section 6.3.5 of the EIS Guidelines requires the proponent to describe effects to federal lands based on the changes to the environment that have been identified in Part 2, Section 6.2 of the EIS Guidelines.

The EIS does not include an explicit analysis of effects to federal lands despite the proximity of Tsuut'ina Nation Reserve No. 145 (Tsuut'ina Reserve) to the Project. Although the Tsuut'ina Reserve is within in the spatial assessment boundaries for a number of VCs, there is no explicit analysis or conclusion of potential Project effects to the Tsuut'ina Reserve based on the predicted changes to the environment, such as air quality, noise, visual impacts, vegetation/wetlands, hydrology and hydrogeology, including on-reserve drinking water wells or from accidents or malfunctions (such as a failure or breach of the auxiliary spillway).

Information Required to Conform

Update the EIS and EIS summary, as applicable, to include the following information:

a) A description of potential effects to the Tsuut'ina Reserve caused by the Project from predicted changes to the environment, including an assessment of any other VCs of importance or VCs Tsuut'ina Nation has identified that are not already covered in other subsections of the EIS guidelines that may be affected by the changes to the environment.

b) A description of specific mitigation measures which would be implemented.

c) A description of follow-up and monitoring which will be implemented to verify the accuracy of the predictions and determine the effectiveness of any mitigation measures.

(19) Accidents and Malfunctions

Context and Rationale

Part 2, Section 6.6.1 of the EIS Guidelines requires that the proponent identify the magnitude of an accident and/or malfunction, including the quantity, mechanism, rate, form and characteristics of the contaminants and other materials likely to be released into the environment, during the accident and malfunction events, that would potentially result in an adverse environmental effect as defined in

section 5 of CEAA 2012. The assessment should consider all seasons of the year and take into account site-specific sensitivities and potential pathways of effects.

The EIS does not provide details on the expected quantities, mechanisms, rates, form or characteristics of potential contaminants that may be spilled or released to the environment as a result of accidents or malfunctions. Site specific sensitivities and potential pathways of effects are also not identified.

The EIS Guidelines also requires a description of the safeguards that have been established to protect against such occurrences and the contingency and emergency response procedures in place if such events do occur. The EIS only makes reference to plans that will be developed without providing any details on contingency and emergency response procedures.

Information Required to Conform

Update the EIS and EIS Summary, as applicable, to include the following information:

a) Provide information for all accident and malfunction scenarios including details on expected quantity, mechanism, rate, form and characteristics of each contaminant or other material likely to be released into the environment during the accident and malfunction events presented in the EIS.

b) Provide detailed information on any site-specific sensitivities and potential pathways of effects as part of the assessment.

c) Provide supporting information that outlines contingency and emergency response procedures including but not limited to: response capacity, expected response times, and spill notification procedures to regulators and the public.

(20) Mitigation

Context and Rationale

Part 2, Section 6.4 of the EIS Guidelines requires that mitigation measures are to be specific, achievable, measurable and verifiable, and described in a manner that avoids ambiguity in intent, interpretation and implementation. Measures are to be written as specific commitments that clearly describe how the proponent intends to implement them and the environmental outcome the mitigation is designed to address. Further, the EIS is to specify the actions, works, minimal disturbance footprint techniques, best available technology, corrective measures or additions planned during the Project's various phases to eliminate or reduce the significance of adverse effects. The EIS is also to present an assessment of the effectiveness of the proposed technically and economically feasible mitigation measures.

For all Project phases and particularly for flood/post-flood phases**,** many of the mitigation measures included in the EIS are broadly characterized, (e.g., 'sediment control measures', 'implementation of best management practices and future plans') and therefore do not conform to these requirements. For example, Volume 3A, Section 8.4.3.4 of the EIS states that erosion control measures during construction

and dry periods will be installed, monitored, and repaired. However, details were not provided on which erosion control measures are to be used and their effectiveness to avoid potential impacts on fish and fish habitat.

There is a resulting lack of certainty as to how measures contribute directly to mitigating an environmental effect and in the prediction of residual effects on VCs.

Information Required to Conform

Update the EIS and EIS Summary, as applicable, to include the following information

a) Ensure all mitigation measures identified in the EIS apply the requirements of the EIS Guidelines and provide updated mitigation measures for all phases of the Project such that they are written as specific commitments that clearly describe how they will be implemented. The Agency recommends listing all mitigation measures for the Project in a table format that can be updated as the environmental assessment process proceeds.

b) Provide details of any standard mitigation measures, techniques and best management practices that will be used, and adequately cross-reference these within the EIS if the information is contained in appendices. Include specific erosion and sedimentation control practices that are to be used during construction.

c) Discuss the level of confidence that the proposed mitigation measures will be effective.

d) Identify who is responsible for the implementation of the mitigation measures and the system of accountability, including a discussion of the mechanisms the proponent would use to require its contractors and sub-contractors to comply with commitments, policies, auditing and enforcement programs.

e) Update analyses and determinations of significance, as appropriate, based on revised mitigation measures.

(21) Significance of residual effects

Context and Rationale

Part 2, Section 6.5 of the EIS Guidelines specify the criteria that the proponent should use in determining the significance of residual effects. These are magnitude, geographic extent, duration, frequency, reversibility, ecological and social context, and existence of environmental standards, guidelines or objectives for assessing the effect. On May 15, 2017 the proponent was provided with the interim document 'Technical Guidance Determining Whether a Designated Project is Likely to Cause Significant Adverse Environmental Effects under the Canadian Environmental Assessment Act, 2012'. This guidance includes the additional criteria, timing, to be used in determining the significance of residual effects. The EIS uses the criteria outlined in the EIS Guidelines in the assessment, but should be updated to include the criteria of timing.

Part 2, Section 4.2 of the EIS Guidelines specify the proponent take an ecosystem approach that considers both scientific and community knowledge and Aboriginal traditional knowledge[1] and perspectives regarding ecosystem health and integrity and that the assessment of environmental effects on Aboriginal peoples will undergo the same rigour and type of assessment as any other VC. Part 1, Section 4.3.2 of the EIS Guidelines also requires integration of Aboriginal traditional knowledge into all aspects of its assessment including both methodology and analysis.

The study methodology in the EIS separates intangible components, where provided, from the analysis of residual effects and determination of significance of each VC. The EIS also separates project effects on traditional land and resource use by Indigenous groups (i.e. Section 14.7 in Volume 3A and Section 14.6 in Volume 3B) from the overall effects assessment and conclusions for the "Traditional Land and Resource Use Valued Component". This assessment methodology does not comply with the EIS requirement to integrate Aboriginal traditional knowledge and perspectives. Indigenous groups may have knowledge and views on how the Project may affect cultural transmission, language retention, governance systems, and patterns of cultural behaviour, among other issues, that need to be considered in the assessment and characterization of effects and determination of significance for each VC.

Information Required to Conform

Update the EIS and EIS Summary, as applicable, to include the following information:

a) Throughout the EIS and in Volume 3D, Table 3-1 'Summary of Environmental Effects', update the analysis and determinations of significance of residual effects, as appropriate, to include the criteria of timing.

b) Throughout the EIS and in Volume 3D, Table 3-1 'Summary of Environmental Effects', update the analysis and determinations of significance of residual effects, as appropriate, to include Aboriginal traditional knowledge and perspectives.

[1] *Footnote - *Aboriginal Traditional Knowledge encompasses knowledge about cultural, environmental, economic, political and spiritual inter-relationships (refer to the Agency's Policy Guidance on Considering Aboriginal traditional knowledge in environmental assessments conducted under the Canadian Environmental Assessment Act, 2012: https://www.canada.ca/en/environmental-assessment-agency/services/policy-guidance/considering-aboriginal-traditional-knowledge-environmental-assessments-conducted-under-canadian-environmental-assessment-act-2012.html)*

(22) Cumulative Effects Assessment

Context and Rationale

Part 2 Section 6.6.3 of the EIS Guidelines require the proponent to identify and assess the Project's cumulative effects, including: consideration of regional flood mitigation works and strategies; accidents or malfunctions associated with the presence and/or modification of existing or anticipated future overlapping infrastructure (e.g. pipelines, transmission lines) and cumulative effects on Elbow River, including its hydrology and seasonal flood processes; fish and fish habitat, including bull trout, cutthroat trout and other valued fish species; migratory birds; species at risk; and Indigenous peoples.

Volume 3C, Section 1.2, Table 1-1 of the EIS lists the projects or activities that have been or will be carried out for inclusion in the cumulative environmental effects assessment. The potential future projects or activities identified do not extend beyond 2020, the projected construction completion date for the Project. Vol 3C S01, Section 1.1 of the EIS indicates that the cumulative assessment was only conducted for the construction and dry operations phases because of an inability to identify future projects which may be occurring at the same time as a flood.

Volume 3D, Section 1.7 concludes that because none of the potential future projects or activities identified for consideration of cumulative effects have overlapping infrastructure with the Project, no cumulative effects relating to accidents and malfunctions are predicted. Section 1.9 of the EIS (Wildlife and Biodiversity) does not assess cumulative effects on migratory birds or species at risk except for the key indicator species (Sprague's pipit, olive-sided flycatcher, and grizzly bear).

The cumulative effects assessment only presents qualitative descriptions of predicted changes even for those VCs in which data has been presented to support a quantitative analysis. Proposed mitigation measures frequently refer to standard operating practices and manuals without identifying the specific mitigation measures that will be implemented. Follow-up and monitoring to verify the predictions has not been included.

A cumulative effects assessment of the flood and post flood operations is required to understand the relationship between the adverse residual effects from flood and post flood operations and other physical activities including the modifications to overlapping infrastructure (pipelines, transmission lines, roads) and other flood mitigation works. Reasonably foreseeable future projects or activities should go beyond the construction phase, to reflect regional and community development plans.

The assessment should include an evaluation of the cumulative effects with and without the Project.

A cumulative effects assessment relating to accidents and malfunctions is required for construction and flood post-flood operation which overlaps with construction and operation of pipelines, transmission lines and road infrastructure.

A cumulative effects assessment for migratory birds and all species at risk is required.

Where appropriate, a quantitative assessment with specific references to mitigation measures is required to understand the conclusion reached regarding the significance of cumulative effects.

Information Required to Conform

Update the EIS and EIS Summary, as applicable, to include the following information:

a) Complete a cumulative effects assessment of the flood and post flood operations that includes consideration of modifications to overlapping infrastructure (pipelines, transmission lines, roads), other flood mitigation works, and reflects reasonably foreseeable projects in regional and community development plans. The assessment should evaluate the cumulative effects with and without the Project.

b) Complete a cumulative effects assessment for all phases of the Project for migratory birds and species at risk.

a) Where appropriate, provide a quantitative analysis of cumulative effects for fish and fish habitat, including bull trout, cutthroat trout and other valued fish species; migratory birds; species at risk; and Indigenous peoples. Provide an explanation if a quantitative analysis is not undertaken on these items.

c) Complete a cumulative effects assessment for accidents and malfunctions during construction, flood, and post flood operations for overlapping existing and potential future projects including pipelines, transmission lines, and road infrastructure.

d) Describe specific mitigation measures which would implemented to address potential effects, and follow-up and monitoring which will be implemented to verify the accuracy of the predictions determine the effectiveness of the mitigation measures.

(23) Follow-up and Monitoring

Context and Rationale

Part 2, Section 8 of the EIS Guidelines requires that preliminary follow-up and monitoring programs be presented in the EIS. The Agency defines follow-up programs as programs designed to verify the predictions made in the environmental assessment and determine the effectiveness of any mitigation measures. A follow-up program creates an information base for determining whether systems (both physical and procedural) for mitigating adverse environmental effects of a project work as intended. Follow-up is an integral step of any adaptive management approach to Project implementation and is a requirement under section 19 of CEAA 2012.

The goal of a monitoring program is to ensure that proper measures and controls are in place to decrease the potential for environmental degradation and impacts to Indigenous peoples during all phases of Project development, and to provide clearly defined action plans and emergency response

procedures to account for human and environmental health and safety, and potential impacts to Indigenous peoples. An appropriately developed monitoring program will identify the means by which mitigation measures will be evaluated and opportunities to implement intervention mechanisms should unexpected deterioration of the environment occur.

The information presented in Volume 3C, Section 2, 'Proposed Follow-up and Monitoring Programs' and other various Sections of the EIS is lacking a comprehensive description of the proposed preliminary follow-up and monitoring programs and how they link to specific VCs and the assessment of mitigation measures. The EIS makes reference to existing mechanisms for monitoring and planning (i.e., Alberta Transportation's Civil Works Master Specifications and Environmental Construction Operations Plan) but information on these programs is not detailed in the EIS or necessarily clearly linked to predicted effects and mitigations for the Project.

Information Required to Conform

Update the EIS and EIS Summary, as applicable, to include the following information:

a) Present a preliminary follow-up program, including any areas where scientific uncertainty exists in the prediction of effects. As described in the EIS Guidelines, include details on a description of the objectives of the follow-up program and the VCs targeted by the program, the number of follow-up studies planned as well as their main characteristics (list of the parameters to be measured, planned implementation timetable, etc.), intervention mechanism used in the event that an unexpected deterioration of the environment is observed.

b) Present an outline of the preliminary environmental monitoring program, including a description of the characteristics of the monitoring program where foreseeable, guidelines for preparing monitoring reports (number, content, frequency, format), and opportunities for the participation of Indigenous peoples in monitoring during each phase of the Project.

c) Provide a detailed rationale where the EIS indicates that no follow-up or monitoring is proposed.

(24) Impacts to Rights

Context and Rationale

Part 1, Section 4.2 of the EIS Guidelines requires that criteria for evaluating impacts to potential or established section 35 rights should also consider input sought by the proponent and/or provided by Indigenous groups. Part 2, Section 5 of the EIS Guidelines requires the proponent to document, for each group identified in Section 5.1 of the EIS Guidelines, section 35 rights, including title and related interests, potential adverse impacts of each of the Project components and physical activities, mitigation measures and potential adverse impacts on potential or established section 35 rights.

The EIS does not provide an assessment of the Project's potential impacts to Indigenous rights nor does it carry forth or consider its conclusions from the assessment of CEAA 2012 paragraph 5(1)(c) effects.

Information Required to Conform

Update the EIS and EIS Summary, as applicable, to include the following information:

a) Using updated information that incorporates any changes or revisions made to the effects assessment of biophysical VCs required in this Annex:
    i. Provide an assessment of the Project's potential impacts to potential or established Aboriginal or treaty rights for each of the Project components and physical activities for all project phases.

    ii. Include the potential adverse impacts to potential or established Aboriginal or treaty rights that may result from the residual and cumulative environmental effects caused by the Project.

    iii. Include the perspectives of Indigenous groups on the assessment of impacts to potential or established Aboriginal or treaty rights that may result from the residual and cumulative environmental effects caused by the Project and a description of how the assessment considered Indigenous comments.

b) Review all measures identified to mitigate potential adverse impacts to potential or established Aboriginal or treaty rights and ensure that the mitigation measures are written as specific commitments that clearly describe how the proponent intends to implement them.

c) Provide a discussion of the views of Indigenous groups on the effectiveness of the mitigation or accommodation measures.