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Alberta Transportation Mark Svenson, Environmental Coordinator 2nd Floor, Twin Atria Building 4999 – 98 Avenue Edmonton, Alberta T6B 2X3 Telephone: 780-644-8354 Email: <u>springbank-project@gov.ab.ca</u>

RE: Piikani Nation Statement of Concern for Alberta Transportation Springbank Off-Stream Reservoir Project

Dear Sir/Madam:

The Piikani Nation (Piikani) is filing this Statement of Concern on the above mentioned application. The Springbank Off-Stream Reservoir Project (the Project), as proposed, will impact the rights and interests of our members and the natural resources upon which they depend. As a result, this Project is of great interest to Piikani.

The Project:

Alberta Transportation has applied to the Natural Resources Conservation Board (NRCB) and Alberta Environment and Parks for approval to construct and operate the Project, located approximately 15 km west of Calgary in Rocky View County. Alberta Transportation is also applying to the Canadian Environmental Assessment Agency (CEA Agency) for approval by the federal Minister of Environment and Climate Change. The Project is a dry reservoir that will store water temporarily during a flood and is intended to work in tandem with the Glenmore Reservoir in Calgary. It would have a storage capacity of 70.2 million cubic metres or about 28,000 Olympic-sized swimming pools. When peak waters have passed, an outlet structure will provide controlled release of the water back to the Elbow River.

The total area within the Project perimeter is approximately 3,870 acres, including road allowances, structures and the maximum extent of any backwater during emergency scenarios. This perimeter also includes surplus borders around the various components of the infrastructure that may or may not be required as the precise location of the components is defined through additional engineering assessment and design. The reservoir's full supply level is achieved when it is storing the 2013 flood event (water elevation 1,210.5 metres, based on current conceptual design). Based on the current dam location this flooded area would be approximately 1,950 acres.

Except for the Elbow River, road allowances and a small area of land at the Highway 8 and Highway 22 intersection, the Project development area is all privately-owned land. There is no leased land. The Project falls within Rockyview County and Treaty 7 lands, the Traditional Territory of the Blackfoot people. The Project lies within Piikani Nation's traditional territory, north of IR 147 and approximately 200km northwest of Piikani's population centre of Brocket. The Piikani Nation has endeavored to explain to Alberta Transportation the significance of the impacts the Project will have on the Piikani Nation and along with other Blackfoot communities has demonstrated to Alberta Transportation that the Project area was well used in the past and contains multiple Blackfoot traditional use sites.

Piikani Rights and Interests

The Piikani Nation have the following rights to the use and enjoyment of our traditional lands and reserve lands which the environmental and socio-cultural impacts of the Project will adversely affect:

- Piikani activities, practices, and traditions that are integral to our culture and protected by Section 35 of the Constitution Act, 1982;
- As beneficiaries of Treaty 7, treaty rights including the right to hunt, trap and harvest natural resources within our traditional territory, to our way of life, to the use, enjoyment and control of lands reserved for us and the right to a livelihood and cultural and spiritual practices from our traditional lands;
- While Alberta has the ability to "take up" lands for various purposes pursuant to Treaty 7, this right is limited by Pikani Nation's right to sufficient lands, and access to them, within our traditional territory, of a quality and nature sufficient to support the meaningful exercise of their treaty rights;
- The right to hunt for food in all seasons pursuant to the Natural Resources Transfer Agreement (being schedule 2 of the Constitution Act, 1930);
- The right to be consulted and accommodated with respect to potential adverse effects on our rights and the interests secured by these rights;
- The right to use and enjoyment of our reserve lands pursuant to section 18(1) of the Indian Act (R.S. 1985, C. I-5);
- The statutory right to hunt, fish and trap on Crown lands pursuant to the Hunting, Fishing and Trapping Heritage Act (S.A. c. H-15.5).

Piikani Technical Review of Project Environmental Impact Assessment/Statement

Piikani retained a team of consultants, representing the interests of Piikani members, to undertake a review of the Environmental Impact Assessment/Statement that was filed by Alberta Transportation in March 2018 with the NRCB and CEAA.

The appended technical review provides a summary of Project-specific and cumulative effects issues of concern as well as potential mitigation measures for consideration during consultation between Piikani Nation and Alberta Transportation and between Piikani Nation and the governments of Alberta and Canada. Where appropriate, recommendations are made to address an identified issue or concern.

Funding for this technical review was provided through a CEAA Contribution Agreement for the Springbank Offstream Reservoir Project.

Highlights of Piikani's Technical Review of the Project

Piikani will be adversely impacted by the Project in several ways as detailed in the attached technical review of the EIA/EIS. Highlights of issues and concerns identified in the technical review include:

Hydrogeology:

- Baseline assessments involve multiple rounds of water quality samples through all the seasons, with
 statistics applied to establish both Baseline values spatially in the monitored units, as well as the range
 of natural variation in parameters (if any), by location and aquifer. The results as presented were not
 considered Baseline, but rather a snapshot in time of conditions in fall 2016, during low water.
 Additional monitoring is required to validate assessment predictions to better understand potential
 effects on groundwater quality and quantity in the RAA.
- Long-term effects on groundwater resources downgradient of the Project did not appear to have been explicitly addressed in the numerical groundwater flow model. No sensitivity analysis or assessment of the model limitations and uncertainties appeared to have been performed on the model. Further monitoring of the existing network along with additional further water level monitoring at locations at further distances from the PAA are recommended to help verify model predictions and reduce uncertainty.
- The Project has the potential to affect groundwater levels and flow patterns because of construction (dewatering) and dry operations (seepage into the diversion channel). Since groundwater quality is dependent upon its flowpath through the sub-surface, flow velocities, and recharge/discharge relationships with surface water (notwithstanding other anthropogenic alterations of groundwater quality), alterations to the Baseline groundwater flow regime can create secondary effects on groundwater quality. Adequate groundwater (levels and quality) monitoring during construction and dry operation of the Project will be necessary to confirm the localized effects on groundwater surface water interaction.

While it is acknowledged that recent land use for the PAA has been private and the land has been
utilized for agriculture activity, traditional use predated current uses and there remain opportunities for
such use. However, the application did not appear to have assessed potential existence of groundwaterdependent, traditionally used culturally sensitive areas, such as cabins, recreational sites, fishing,
hunting, and plant gathering areas within the PAA that could be impacted by the Project. Alberta
Transportation should confirm that it has considered potential traditional groundwater use in any
culturally sensitive areas and if traditionally used, develop mitigative measures to protect these sensitive
areas and consult with community members to inform and participate in related monitoring activities.

Hydrology:

There is uncertainty associated with the sediment transport modelling component of the assessment
related to actual suspended sediment concentrations during flood streamflows and mobility thresholds
for suspended and bedload sediments. This uncertainty might influence the predictions about sediment
transport and channel morphology during flood and post-flood operations. The assessment did not
describe any contingency plans to address the implications of this uncertainty (e.g., dredging of reservoir
if sediment deposition rates were greater than expected or mitigation of excessive suspended sediment
during reservoir releases). Alberta Transportation should explain and clarify what measures will be in
place to maintain coarse sediment and/or bedload transport downstream in the Elbow River
downstream of the diversion channel; how storage capacity would be maintained on an annual basis
when it might be reduced due to sediment deposition within the reservoir and how the integrity of the
low-level outlet channel would be maintained.

Surface Water Quality and Aquatic Ecology:

- Fish and fish habitat will be affected during the construction and flood or post-flood scenarios. Construction activities were stated to potentially change sediment concentrations, water temperatures, habitat structure, nutrient concentrations, fish food supply, and fish access in the Elbow River and tributaries in the local area. These changes will result in permanent alteration or destruction of fish habitat, including habitats of fish supporting Commercial, Recreational and Aboriginal (CRA) fisheries, which could affect the distribution and abundance of fish in the area. For example, construction of the diversion structure will result in the permanent alteration or offset for any lost fish habitat were not described in this application. Piikani Nation community representatives should be consulted about plans to provide fish habitat replacement or offset, including the DFO consultation and Authorization process.
- The application did not sufficiently address the issues of pesticide/herbicide transport and potential
 mercury methylation and bioaccumulation. Alberta Transportation should consider aquatic impacts
 related not only to herbicides applied to control vegetation during Project operations, but also any
 existing hydrocarbons including herbicides that are on lands within the full project footprint. Alberta
 Transportation should also assess the potential for methylmercury to be produced within the flooded
 reservoir and transported to the Elbow River during water release; assesses the potential for

methylmercury produced in the flooded reservoir to be bioaccumulated by fish to levels that might not otherwise occur (and that might exceed human consumption guidelines in the Elbow River). Monitoring should also include inorganic mercury and methylmercury in reservoir sediments, in water overlying sediments, and at the low-level outlet during water release, as well as in fish tissue just prior to salvaging fish back to the Elbow River.

• There was no discussion of the potential for cyanobacterial (bluegreen algae) blooms or microcystin release in the reservoir or downstream, as required by the Terms of Reference, including potential impacts on drinking water or recreation; and negligible consideration for the potential impact of existing hydrocarbon-contaminated surface soils on water quality and the aquatic environment, as required by the Terms of Reference. Alberta Transportation should provide an assessment of the potential for the off-stream reservoir to develop cyanobacterial blooms, which might result in the production of microcystin toxins that could be introduced downstream during water release to the Elbow River and the drinking water supply, Glenmore Reservoir and develop and communicate contingency plans.

Terrain and Soils:

- Alberta Transportation concluded that effects to soil quality and quantity were not significant because there would be a change in land use after the Project was approved, but it failed to consider other effects that changes to soil quality and quantity would have on terrestrial resources, such as vegetation and wildlife, despite the Project Terms of Reference, which stated: *discuss the relevance of any changes for the local and regional landscapes, biodiversity, productivity, ecological integrity, aesthetics and future use*. To meet the ToR, an assessment of how changes to soil quality and quantity might impact other terrestrial resources, including biodiversity, productivity, and ecological integrity, must be completed and should involve revisions to the determination of significance for the soil quality and quantity section.
- The EIA did not address potential Project impacts to Indigenous land use in the LAA and RAA resulting from changes to terrain and soil conditions and types. Terrain and soils are closely linked to the terrestrial resources (e.g., vegetation and wildlife) that Indigenous people rely on, meaning that changes to soil conditions will have implications to Indigenous resource use. An assessment of how changes to terrain and soil conditions might impact Indigenous land use resulting from implications for terrestrial resources (e.g., vegetation and wildlife) should be completed in collaboration with, and informed by, the Piikani Nation.
- Alberta Transportation indicated that reclaimed areas would be revegetated with a native seed mix but it should first collaborate with Indigenous communities to ensure that the seed mix (and revegetation plan more generally) includes species of importance to the Piikani Nation and other Indigenous communities. Revegetating stockpiles with native species of importance to the Piikani Nation and other Indigenous communities would (i) allow Alberta Transportation and Piikani Nation personnel to collaborate on techniques for successful propagation and establishment of native species of importance to the Piikani Nation, and (ii) help to maintain a seedbank on soil stockpiles for native species of Indigenous importance.

Vegetation and Wetlands:

- Few Field Surveys were conducted in the buffer between the PDA and LAA which is the main study area for assessment of Project impacts and the EIA did not present an explanation of how survey locations were selected. Alberta Transportation should complete additional surveys in the 1-km buffer between the PDA and LAA to ground-truth all mapped ecosites and to determine if there are any rare plants, rare plant communities, and/or traditional use species that should be considered for mitigation.
- The EIS was not clear about how much existing disturbance in the LAA would be absorbed during Project construction. More effort is required to ensure that existing disturbance is incorporated into project footprints, especially for projects such as this that are in heavily fragmented areas that have few remaining areas with sufficient interior habitat area to support undisturbed traditional use.
- Alberta Transportation did not consult with Piikani Nation members to: include rare traditional plants in the rare surveys, determine if the rare species identified in the RAA and LAA were traditionally important plants, or to develop species-specific mitigation plans for the three SOMC that might be removed by the Project.
- Alberta Transportation identified traditional use plants using data compiled from reports and other secondary documents but it did not consult directly with the Piikani Nation to validate the data. The EIA stated that there was no indication that these plants were being used by Indigenous groups and concluded that because the species were generally common and widespread that the effects of the Project to traditional use plants would be low in magnitude. Alberta Transportation should consult members of all potentially affected Indigenous groups to ensure accuracy of conclusions in the EIA for traditional use plants and the completeness of the underlying data and analysis.
- The EIS presented misleading arguments in the assessment of traditional use plant species for Flood and Post-flood Operations. Alberta Transportation argued that permanent loss of traditional plants was not anticipated because the plants would recover with time. This does not match the information presented in the Design Flood section which included only three different types of modified grasslands and graminoid dominated marsh; all submerged upland and wetland communities would be permanently lost along with many associated upland and wetland traditional use plant species. The impact assessment for traditional use plant species was further misleading because Alberta Transportation did not present adequate information (e.g., scientific evidence and/or case studies) to demonstrate that successful grassland and marsh recovery supporting traditional plants and uses could be achieved. The impact assessment of traditional use plant species (Section 10.2.3.2) for Flood and Post-flood Operations should be revised to reflect the loss of traditional use plant species that will be lost with upland and wetland communities submerged during the design flood.
- The EIS presented some brief statements about monitoring but there was no indication that the Piikani Nation would be engaged in monitoring, including in the planning and implementation phases of monitoring. It is necessary that Alberta Transportation engages affected Indigenous communities when developing reclamation monitoring plans to help define meaningful monitoring criteria and indicators

for traditional land use objectives and targets including planning for biodiversity potential to support traditional land uses on the post-reclamation landscape.

• Alberta Transportation estimated regional cumulative effects to vegetation and wetlands using current conditions as a Baseline for comparison and concluded that the contribution of the Project to cumulative effects would be minor and not significant relative to the current availability of vegetation and wetlands remaining in the RAA. This approach does not acknowledge the accumulation of impacts that have occurred on the landscape since industrial development began in the region) which is also the baseline for comparison that is most meaningful to the region's Indigenous communities. Alberta Transportation should compare Project cumulative effects to a pre-development Baseline and revise the significance ranking in the Vegetation and Wetlands section of the Cumulative Effects Assessment.

Wildlife:

- Alberta Transportation considered traditional importance when selecting wildlife indicators, but they did
 not directly consult with Piikani Nation members to validate and ensure accuracy of the underlying
 wildlife data for Piikani Nation specifically. The proponent should consult members of all potentially
 affected indigenous groups to: (i) validate lists of traditionally important wildlife species, (ii) add unique
 or overlooked species of traditional importance, and (iii) identify if indigenous members have specific
 knowledge about wildlife patterns within the LAA. Failure to consult may result in negative implications
 to wildlife species in the surrounding region and to communities that rely on them.
- The wildlife assessment indicated that historical data in the LAA was limited and observational data collected as part of Project-specific data collection surveys was collected as well but, as is typical for these projects, the survey intensity was insufficient to meet model quantity and spatial distribution validation requirements. Alberta Transportation should collect more data to calibrate habitat suitability models for specific key indicators and validate assessment predictions.
- The EIA presents various access-related mitigations to reduce animal-vehicle collisions and other negative implications of increased access, but it does not provide a formal access management plan (AMP) and there is no mention of consulting indigenous communities to develop an AMP. Alberta Transportation should collaborate with Piikani Nation and other Indigenous communities to develop an access management plan (AMP) for roads and other linear access features associated with the Project with restrictions on non-essential access, and with reasonable allowances that give Indigenous communities access to traditional lands.
- Revegetation measures are insufficiently detailed in describing the benefits of the mitigation efforts on wildlife habitat re-instatement. Alberta Transportation should provide a more detailed reclamation plan that outlines how revegetation efforts will mitigate wildlife habitat loss and develop a detailed reclamation plan in collaboration with members of Piikani and other Indigenous communities.
- Alberta Transportation predicts that the residual environmental effects on wildlife will not be significant, yet they acknowledge that a measurable change in the abundance and distribution of ungulates in the

LAA is possible due to installation of permanent structures and un-crossable gaps of rip rap in the diversion channel. It appears that the prediction of non-significance is based in part on questionable and untested provisions to maintain ungulate movement, such as materials to cover rip-rap at regular intervals. Alberta Transportation should provide supporting information to demonstrate that successful ungulate crossings can be achieved with the proposed cover materials for rip-rap and revise the significance rating to reflect the predicted measurable change in the abundance and distribution of ungulates in the LAA.

• A follow-up monitoring program was proposed by Alberta Transportation to be designed to verify predictions made on Project effects to wildlife movement in the LAA during construction and dry operation, monitor wildlife use of the diversion channel during dry operation, and where appropriate determine effectiveness of mitigation to reduce Project effects on wildlife movement. Alberta Transportation should provide a more detailed description of its monitoring program and provide capability for the Piikani Nation to participate in the monitoring program.

Biodiversity:

- The EIA contained a list of broad mitigations and monitoring actions to reduce Project effects on biodiversity, but it did not present criteria or thresholds to use for monitoring and measuring the effectiveness of mitigations to re-establish biodiversity to support traditional land uses on reclaimed areas. It is Piikani Nation's view that monitoring plans for biodiversity should be completed as a condition for approval and that the plans should be submitted to the Piikani Nation for examination and input.
- The EIA rated the Project's effects on landscape diversity change (i.e., habitat fragmentation) as
 reversible even though the RAA and LAA were within an already highly disturbed and fragmented
 landscape. Alberta Transportation should reassess habitat fragmentation using an approach that can be
 compared to the literature, such as density of linear disturbance, and it should examine the results
 against a pre-development Baseline (e.g., pre-1930s), which is also the Baseline for comparison that is
 most meaningful to the region's Indigenous communities. This revised approach would show that
 landscape connectivity is already under sustained harm and that additional disturbance in the near term
 will worsen this impact, regardless of future mitigations, such as reclamation of temporary disturbances.
 Alberta Transportation should revise the Project's residual effects on landscape diversity change to
 significant and irreversible.
- There are several instances in the EIA in which Alberta Transportation cited "reclamation of temporary disturbances" as the basis for assessing residual project effects as not significant or low in magnitude, but did not present adequate information (e.g., scientific evidence and/or case studies) to demonstrate that successful reclamation could be achieved.

Land Use and Resource Management:

- Piikani Nation provided a TLU report prior to Alberta Transportation submitting the EIA. Alberta
 Transportation suggested that: TLRU information contributed to the understanding of existing land uses,
 was used to identify lands that are used traditionally and informed the assessment of potential effects.
 While this information did not directly affect the significance definition, it has been incorporated into the
 analysis of effects on which the significance determination was based. Piikani Nation requests that
 Alberta Transportation discusses how issues of concern to Piikani Nation, their Treaty and Aboriginal
 Rights and traditional knowledge has been used in Project planning and site selection.
- The EIA stated that the Project falls within Rockyview County and as such land use was reviewed within the context of provincial legislation and municipal bylaws however, the land use section failed to acknowledge that the Project falls within Treaty 7 lands, the Traditional Territory of the Blackfoot people. Piikani Nation requests that Alberta Transportation discusses how issues of concern to the Piikani Nation and its traditional and contemporary land uses and Aboriginal Rights have been used in Project planning and site selection.
- Alberta Transportation will allow Indigenous groups to access Area A for traditional purposes and Area C will also be publicly available. Area A is also considered a conservation area, with general public access and opportunities for low impact recreation. Alberta Transportation will maintain access to identified "current" use sites located outside for the designated construction and Project site limits during construction and operation (including hunting and fishing) and will advise Indigenous groups on post-construction access management. Affects to access will be continuous, long-term and irreversible. It is not clear how access for Piikani Nation members would be coordinated such that they would be able to carry out ceremonies within the conservation area (Area A) or how the province would facilitate activities such as hunting within an area intended for multi-use including access by recreational users.

Historical Resources:

Baseline data collection was not yet completed due to lack of landowner permission to access required areas. In addition, ACT may require a deep testing program in areas of high potential for deeply buried sites. As deep testing is highly invasive, investigation has been delayed until the Project has received approval to avoid unnecessary interference with potential sites. As a result, additional archaeological work was recommended in the HRIA report and might be required by ACT prior to Project approval. As there is potential for additional cultural and archaeological sites and artifacts to be unearthed during construction of the berm and diversion channel, particularly from the cliff on the west side of the Elbow River, Alberta Transportation should include the Piikani Nation in discussions with ACT related to further investigations of identified sites; present the results once all Baseline information is collected; and provide an opportunity to monitor construction activities near known cultural resources including the flats north of the berm location, the bottom of the Elbow riverbed and on a tributary creek channel off the Elbow River.

Piikani Nation Traditional Land Use Study:

- Even though the EIA listed the multiple traditional use sites and resources within the Project's study area, and made some effort to reiterate the knowledge the Piikani Nation has shared describing the spiritual and cultural importance of these sites and the significant impact destruction of these sites will have with respect to long-term access and the ability to carry out traditional pursuits in the Project Area, Alberta Transportation stated that *"the effects of the Project will not result in the long-term loss of traditional use sites and areas in the RAA... the results are not significant"*. Acknowledging the significance of the impact is important; not only in terms of respecting the Piikani People and its culture, and attempting to reconcile past infringements to Aboriginal and Treaty rights, but also because the significance rating should influence project decisions and Alberta Transportation's commitments related to the types of mitigation measures, management strategies, monitoring any other accommodations measures carried out for the Project.
- While the EIA provided some discussion and proposed mitigations for effects to access, hunting, fishing, trapping and plant harvesting, the EIA did not make any specific commitments to protect/avoid TLUR and cultural sites, or any specific commitments to mitigate or accommodate tangible and intangible cultural impacts to Blackfoot culture, traditions and practices that will occur as a result of the Project.
- Table 14-5 suggested that no current medicinal plant gathering areas were located in the RAA, there were no Blackfoot traditional camps and that Elbow River was not used by the Piikani Nation for fishing, or as a water source. Table 14-3 listed some of the natural resources used by the Piikani Nation, but this list was not complete. Alberta Transportation should review this information at a workshop so that Piikani Nation use of resources is accurately captured. With so many camps it is likely that water was harvested from the Elbow River and other waterways and that a variety of food and medicinal plants were historically harvested from these areas.
- The Piikani Nation has raised concerns with general alteration of the land within the flood basin, which provides habitat for a variety of vegetation and wildlife species if one species is altered that the whole ecosystem might be affected. Alberta Transportation should: discuss the availability of vegetation, fish and wildlife species for food, traditional medicinal and cultural purposes in the LSA and RSA in the Conservation and Reclamation plan; develop a monitoring plan with the Piikani to assess Project effects on hunting, trapping, fishing, plant harvesting and cultural use following Project development; develop Project-specific triggers and limits with Piikani for the Project's mitigation, management and monitoring plans that reflect Community TEK and ecological and cultural values; and consider supporting Piikani's cultural retention strategies, including plans to establish community-based monitoring of key cultural species and practices.

As identified above, and detailed in our technical review, the Project has the potential to directly and adversely affect Piikani's rights and interests and the tangible and intangible resources that support them. Piikani expects that the requests and recommendations provided in our technical review of the Project will be addressed in a fashion similar to the SIRs provided by the regulators to Alberta transportation and will become part of the public record where appropriate to assess the sufficiency of the information provided in the EIA/EIS and impacts of the proposed Project (including adequacy of mitigation).

In Closing:

No consultation has yet occurred with Alberta or Canada. Piikani requests direct consultation to address the project specific and cumulative loss of lands and natural resources and resulting loss of meaningful opportunities for the exercise of Piikani's treaty and aboriginal rights and interests.

As a directly affected rights-holder, the Project is of interest and concern to Piikani and we look forward to working with Alberta Transportation as well as the regulators as the Project moves through the regulatory process. Please contact me directly at 403-965-2522 or <u>ira.p@piikanination.com</u> should you have any questions or wish to discuss this letter further.

Sincerely, <Original signed by>

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cc Piikani Nation Chief and Council
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