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Impact Assessment Agency of Canada (IAAC/CEAA)
Attention: Jennifer Howe (IAAC / CEAA)

April 26, 2021

Re: Biodiversity and Fish

Summary of Findings:

- **Offsetting plans and costs for wetlands and fish offsets are missing from the Proponent's submissions.**
- **Fish impacts are negative and rescue operations, as discussed by the Proponent at the NRCB hearing are costly and unrealistic.**
- **SR1 contravenes the SSRP's statements on intact native grasslands.**
- **Wetland Policy**
- **Desktop analysis for Elk mapping is inconsistent with observed elk in the area.**
- **SR1 is at odds with Alberta Wetland Policy.**
- **Cumulative impacts have not been adequately considered and the regional assessment area is not consistent with the Terms of Reference.**

Offsetting Plans:

The Stoney Nakoda raised omissions in the offsetting plans for fish, which they have apparently been told will include offsetting habitat on the Bow River. Until the NRCB hearing, we hadn't heard of this plan at all! We do not see plans of any sort for wetland offsets even though there is permanent loss of wetlands. We are totally unclear if there are any other offsets required for the loss of native fescue grasslands, which are unlikely to be successfully re-established, according to both Cliff Wallis and Dr Osko. Does IAAC require details on these offsetting plans in advance of the final report for SR1? Additionally, no costs have been provided by the Proponent for any offsetting plans which appears to be a gap in the submissions.

Fish:

The Proponent should be required to estimate fish entrainment at the various SR1 structures in various flood scenarios. From the SCLG final argument, page 68, from Allan Locke:

“Based on the information provided to date for this project and what is known for irrigation headworks, all that is possible should be done to first, keep fish out of the diversion channel, secondly return fish during lower flow diversions where it is feasible, and thirdly have a good fish rescue plan”

For fish, SR1 is clearly negative. There are no redeeming outcomes from the Project and there will be much work required to minimize the negative impacts.

Fish rescue plans are rather confounding. At the hearing, the Proponent stated that it may require 30 people + supervising biologists wandering around the reservoir as it drains, using electrofishing equipment. First, the cost of this will be substantial and, depending on the duration of rescue operations, could easily reach the hundreds of thousands of dollars. Second, is it possible for fish rescue personnel to work in damp or wet sediment between 20cm and 100cm in depth over hundreds of acres? Are they walking through this? Will it support their weight or will they sink? Will the sediment be safe? Will the air quality be acceptable as the edges of the reservoir dry out and sediment becomes airborne? Will rescuers be able to drive specialized equipment over the sediment and collect fish? This could be an expenditure of hundreds of thousands of dollars in a big flood. Also, what is the expected success of this rescue operation? Too many unknowns exist here and there is no supporting evidence to suggest any rescue is possible given the difficult working conditions in the reservoir post-flood.

Further, we as IAAC to consider the timing and scope of the bull trout study. The Alberta Transportation August study of Bull Trout is insufficient to determine Bull Trout populations and movements. The Bull Trout movement study by Popowich and Paul along the Elbow River in 2003-2005 demonstrated movements of up to 2.5kms/day following fall spawning for this species.

Elk & Grizzly: Desktop Analysis Based on Habitat Suitability vs Observed Behaviour

In Ex 406 pdf pages 92-97, Mr Wagner asked a series of questions on elk and grizzly habitat conclusions reached by the Proponent:

1 A. MR. TERRY: Yeah, good question, Mr. Wagner.
2 So the grey areas, what you're looking at there,
3 is largely the effect of the assumption in the model
4 about animals, in this case, elk, avoiding roads. And
5 so when you put some of the disturbance buffers on
6 Highway 22, Highway 1, and even the township roads,
7 your township road buffers were smaller.
8 But because the area is heavily roaded, you
9 basically get a merging of all the setback buffers, and
10 that starts to produce a lot of these grey areas.
11 So, again, it's not habitat. The model is
12 predicting, relative to the other feeding patches that
13 you would expect to see elk, they're going to be
14 farther away from the road -- I've just been told to
15 slow down -- so it's not -- again, it's not that we
16 wouldn't see elk in the grey areas, it's just relative
17 to the other categories, they would be less likely to
18 occur compared to the red and orange areas.

It is striking that area residents see the elk along Springbank Road near RR40, both north and south of the road, but the habitat suitability modelling shows that area as low suitability due to roads. In our view, this indicates that the desktop analysis was not appropriately vetted against reality. They had 7 years to do this!

Regarding grizzlies, Mr Wagner asked whether grizzlies prey on elk:

5 But it's important to probably point out too that,
6 you know, the Springbank lands just west of Highway 22
7 occur in the grizzly bear support zone, which is
8 identified in the provincial grizzly bear recovery
9 plan. And the bears that were seen in Springbank,
10 again, following the recovery plan zones, the support
11 zones are really designed to help manage grizzly bears
12 that typically have been living mostly in the recovery
13 zone, which is west of the Springbank study area, that
14 have home ranges that do overlap into some of the
15 private agricultural and ranchlands on the east slopes.

16 So, again, there -- recognized that there are
17 bears that occur, and, of course, there will be
18 management during the project to deal with bears.

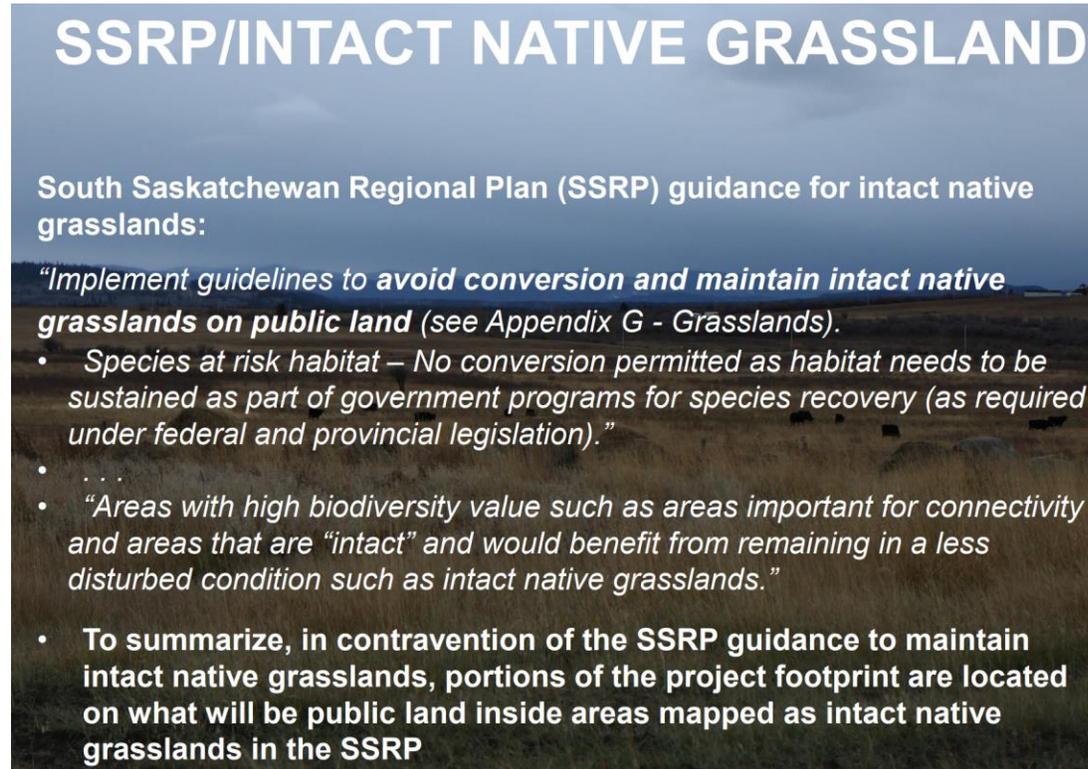
19 Q. Thank you for that answer. Does AT recognize the link
20 between grizzly bears and the primary food supply of
21 elk calves?

22 A. MR. TERRY: Yes. We're aware that grizzly
23 bears do prey on elk calves.

If the elk habitat modelling doesn't accurately reflect reality, how are we to trust the grizzly mapping?

South Saskatchewan Regional Plan:

From Ex 402, Cliff Wallis presentation:



SSRP/INTACT NATIVE GRASSLAND

South Saskatchewan Regional Plan (SSRP) guidance for intact native grasslands:

“Implement guidelines to avoid conversion and maintain intact native grasslands on public land (see Appendix G - Grasslands).”

- *Species at risk habitat – No conversion permitted as habitat needs to be sustained as part of government programs for species recovery (as required under federal and provincial legislation).”*
- *“Areas with high biodiversity value such as areas important for connectivity and areas that are “intact” and would benefit from remaining in a less disturbed condition such as intact native grasslands.”*
- **To summarize, in contravention of the SSRP guidance to maintain intact native grasslands, portions of the project footprint are located on what will be public land inside areas mapped as intact native grasslands in the SSRP**

The SSRP has been disregarded for the SR1 project by the Proponent, but that regulators must consider this plan. Ex 414, page 91 concludes that:

392. The South Saskatchewan Regional Plan mapped some of the project area as Intact Native Grasslands. As noted by Mr. Wallis in his report, Ex. 271, pdf 14 – 16, the South Saskatchewan Regional Plan (SSRP) guidance requires that an area mapped as intact native grasslands should remain “intact” and conversion for industrial or other uses should be avoided.
393. Section 2.1 of the *Natural Resources Conservation Board Act* requires the Board to act in accordance with any applicable ALSA regional plan in carrying out its mandate. By virtue of section 2.1 of the NRCB Act, the Board must consider the provisions of the SSRP and act in accordance with its directions in determining this application.
394. This means that the Board must, in accordance with the guidance of the SSRP, ensure that intact native grasslands within the project area remain intact and in an undisturbed state. Any application, such as the SR1 Project, that would result in destruction of the intact native grasslands should be a factor in denying this project.

Wetland Policy:

From Mr Wallis' presentation:



ALBERTA WETLAND POLICY

"Alberta's Wetland Mitigation Hierarchy can best be described as follows:

1. Avoidance – The primary and preferred response is to avoid impacts on wetlands.
2. Minimization – Where avoidance is not possible, proponents are expected to minimize impacts on wetlands.
3. Replacement – As a last resort, and where avoidance and minimization efforts are not feasible or prove ineffective, wetland replacement is required."

Stantec notes in Exhibit 217, pdf page 24 that dry operations would result in the loss of over 52% of wetlands classed as either moderate or high value.

To summarize, despite proposed and suggested mitigation, there will be residual negative biodiversity impacts of the project on valuable wetlands and streams through sediment deposition during flood events and activities to remove sediment following floods, as well as modification of stream flow or outright loss of these features under project components.

In contravention of the avoidance direction in Alberta's Wetland Policy, some wetlands and streams will be permanently lost.

From the SCLG final argument, page 93:

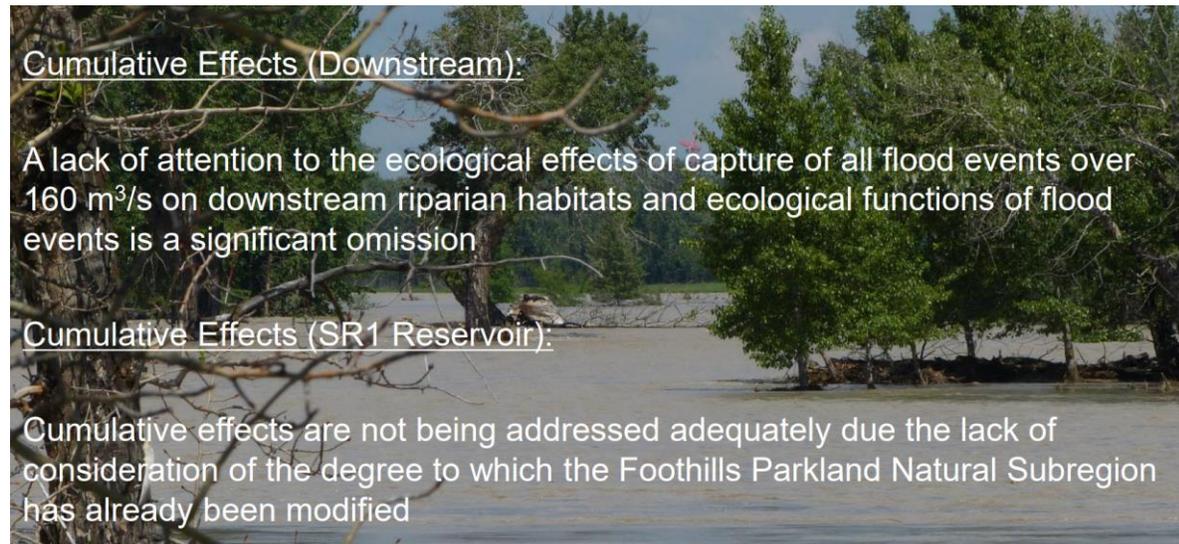
401. Mr. Wallis testified on April 1, 2021 Ex. 406, Tr. p. 2430 that the project will also directly impact 5 kilometers of productive stream courses and numerous productive wetlands during construction. The adverse impacts on wetlands are not limited to flood operations but extend to dry operations. According to Stantec in Ex. 217, pdf 24, over 52% of wetlands classed as either moderate or high value will be lost during dry operations. This impact is significant even though AT suggests otherwise.
402. In AT's views, the impacts should not be considered significant because the wetlands will be replaced. Replacement of wetlands is the last option in Alberta's wetlands' policy. The first preference is always to avoid direct impacts to wetlands because of their ecological significance. Replacing a wetland is at a cost to Alberta taxpayers. As confirmed by Mr. Speller at Ex. 395, Tr. p. 2161, this cost has not been factored into the cost opinion for this project.
403. Other than wetlands that will be permanently lost during construction, the project will impact wetlands during flood operations. As confirmed by AT in Ex. 217, pdf 24, the duration of inundation in the reservoir (for instance, 73 days for a 1 in 10 year flood, 82 days for a 1:100 year flood and 58 days in a design flood) will alter wetland function.

Mr Wallis expressed concerns about the ecological value of wetland replacement. Exhibit 406, pdf page 276: "I think not all of that compensation money is replacing like with like and, in fact, is damaging some pretty significant habitats in the process."

Additionally, from Exhibit 406, pdf pg 239, Mr Wallis states: "Stantec, in Exhibit 94, PDF page 114, also notes that there will be permanent diversion of five small tributary streams intersected by the diversion channel." We do not believe the impact of these tributaries intersecting the diversion channel has been properly explored and there was not adequate time to pursue this at the hearing.

Regional Assessment Area & Cumulative Impacts:

The foothills parkland natural subregion habitat has already been heavily modified. This existing loss has not been adequately addressed in the Proponent's analysis. Every incremental loss of native habitat is a significant loss for the natural subregion. [Ex. 406, p 2437]. This omission, as Mr. Wallis points out in Ex. 406, Tr. p. 2439-2440, is inconsistent with the project's Terms of Reference for the EIA. Mr. Wallis also noted that the use of a 15km buffer for assessing cumulative impacts is arbitrary considering that downstream effects could be felt for hundreds of kilometers. From Mr Wallis' presentation:



In Exhibit 406, pdf page 250, Mr Wallis also states the following regarding the regional assessment area:

“So I note that the project approach in Exhibit 21, PDF page 23 say that the regional assessment area is defined for each valued component. Depending on physical and biological conditions. And the Canada's assessing cumulative effects guidelines in 2012 said that the spatial boundaries for cumulative effects assessment should be based primarily on the valued components' geographic range and the zone of influence of the project for that valued component. **It is my position that AT failed to follow the federal guidance and terms of reference in adequately defining the boundaries.** “

Mr Wallis continues:

“The desired outcomes for riparian lands in the Bow Basin management plan are stated on PDF 101 of Exhibit 271 in the appendices of my report. Two of these are: (as read) "Existing riparian land, including associated upland areas, are kept intact or restored. Ecological function appreciated and valued. And core ecological functions of healthy riparian lands are maintained." I don't think that is the case given the proposed operation of SR1 and represents a major gap. In my opinion, most of the hydrological processes needed for fully functioning riparian ecosystems will be adversely impacted with related effects on vegetation and associated wildlife. So two of our best researchers, Dr. Stewart Rood and John Mahoney, who works for Alberta Environmental Protection, have looked at the Bow River, and they were part of a team that looked after the 2013 floods, and they went through the science of river conservation, and a group of experts did a thorough analysis for rivers in southern Alberta. And their conclusion was that 85 percent of the natural flow should be retained in the river to sustain the natural river and ecosystem. SR1 further taxes an already

stressed riparian system and works against the ecological requirements for riparian habitats as well as the desired outcomes for riparian lands described in the Bow Basin management plan. This emphasizes the need for better consideration of the effects and cumulative effects and potential mitigation over a much larger area than the RAA used in the SR1 process.”

The Proponent cannot state whether they will acquire the full 6800 acres and will need to sell back the excess or whether they will be able to acquire the unusual 3600-acre footprint created by elevations. If larger parcels are purchased by the Proponent and then resold into smaller parcels, which then will have homes, driveways, yards, etc. this will result in further loss of these grasslands. This will impact the broader area and there will be associated impacts to biodiversity. Clearly, there are implications beyond the Project Development area that have not been considered by the Proponent. Will SR1 be the government- created catalyst for further fragmentation of this important ecosystem over time? This land is contiguous, natural land. Assuming that the exact 3610 acres, defined by “fingers” and angles, is naïve.

Summary

We believe that IAAC should consider Mr Wallis’ testimony carefully. To close with Mr Wallis’ response to NRCB’s Ms Vance (Ex 406 pg 277):

Ms Vance: “What I was wondering is your opinion on how society balances ecological benefits from floods with the adverse impacts that they cause to humans. Is there anything -- any wisdom you can impart?”

MR. WALLIS: “Well, there's actually a very good report by Alberta WaterSMART in 2016 which made recommendations related to climate vulnerability and sustainable water management, and of course they said -- one of the things was to pursue more extensive relocation and buyouts in the Bow River and Elbow River floodplains to reduce risk. And they note the benefits of that is that it's the most effective and the only permanent solution. We still encourage people to live in risk areas, because there's always a bigger, badder flood that comes through, and so it's a time thing. We've developed in these areas over the last century. We're not going to fix our problems right away, but I think we have to have this bigger overall strategy, so that's what I'm talking about. Maybe we have some flood control projects in the interim, but that shouldn't encourage people to stay where they are or to develop more in there or to develop more extensive infrastructure in those areas. The process of the City of Calgary, these teams of scientists is to try and figure out ways of over the long-term moving people out of those risk areas and protecting some of the highest-value assets. So it's a very complicated thing, and I appreciate that. My job is, from a biodiversity point of view, to make sure people are aware of the risks there and the values of those riparian areas. But, yeah, you know, I don't envy the politicians on this matter, but I sense that we should be learning from other jurisdictions who have gone more to natural models and getting people out of those higher-risk areas rather than spending billions of dollars building. And I worked in China, and I know now the rivers in some places are above the river -- bottom of the rivers are above the surrounding landscape, and when they have big floods and those dykes get breached, it's a huge catastrophe. So, you know, we can continue down this same road, building infrastructure and not doing the bigger work, but I think if we don't do the two together, we're going to be facing bigger problems in the future.”

Regards,

Karin Hunter

President, Springbank Community Association

CC. Dan Henn, RVC Reeve, Kent Robinson, Acting CAO, Rocky View County, Kim McKylor, RVC Councillor, Div 2, Mark Kamachi, RVC Councillor, Div 1, Kevin Hanson, RVC Councillor Div 3, Laura Friend, NRCB