



Impact Assessment Agency of Canada (IAAC/CEAA)
National Resources Conservation Board (NRCB)

Delivered by email

Attention: Laura Friend (NRCB)
Jennifer Howe (IAAC / CEAA)

February 14, 2021

Re: SR1 Project and Wildlife / Biodiversity (CEAA Conditions Section 5)

Our comments address CEAA's draft conditions of January 4, 2021 along with Package 4-Technical Review Round 2, March 23, 2020 and July 2020, and the Proponent's land-use plan from October 2020 (Question 4-05) among other items from the Proponent's prior submissions. We have not had the opportunity to adequately review the most recent December 18, 2020 Project Design given the holidays and requirement to comment on CEAA draft conditions by February 3, 2021. We remind regulators that we are community volunteers who spend inordinate amounts of time keeping up to date with submissions. We also express dismay that the NRCB Pre-hearing took place before the latest design was released. We did not have any indication that this updated design was imminent and it has created additional work for our volunteers. Additionally, the February 3, 2021 deadline for CEAA comments on conditions proposed on January 4, 2021 does not allow adequate time for robust review and comment. The CEAA deadline should at least include the expert evidence that arises at the NRCB hearing. To omit this evidence may result in missed-opportunities to improve Project outcomes.

"No Project" Comparisons

The baseline comparison for the Proponent is the "no project" or "without the project" scenario, which was never contemplated. Regarding migratory birds, we ask Regulators to require a discussion of the MC1 alternative vs SR1. SR1 requires an extensive pre-flood clearing effort to remove species at risk that may or may not be feasible. Is pre-flood clearing for species at risk contemplated for any areas upstream of SR1 that would have been protected by MC1? Would MC1 have required pre-flood clearing and rescue activities? That is not discussed anywhere. Further, the SR1 project creates an unstable environment as a result of the flood/dry cycle along with sediment deposition and accumulation. From a biodiversity perspective, the entire ecosystem post-flood, and perhaps post-construction will be simplified. How will this be measured over time?

Regarding the CEAA proposed conditions, it appears that the various agencies have commented on their particular areas of expertise. In some cases, it appears that these conditions are at odds with one

another. For instance, grading the reservoir for fish drainage is at odds with maintaining the natural habitat which is currently home to migratory birds and native plants.

General Comments:

Landowner Feedback and Knowledge

Regarding the changes to the diversion channel: Why does the Proponent continue to ignore the inputs of landowners regarding wildlife? The Proponent states that they are relying on First Nations and cameras for the placement of crossings in the diversion channel. Landowners have owned and farmed this land for nearly 140 years and have the most current and relevant wildlife information. The land is largely in its natural state. Why are they ignored? Many landowners have wildlife cameras installed to capture wildlife images in the SR1 footprint. Once again, we highlight the complete and utter lack of regard for landowners and their expertise, and in this matter specifically, the useful information that landowners can bring to the discussion. The Proponent has consistently taken an adversarial approach to landowners, which is detrimental to proper planning of this Project.

Long-Term View of Sediment Accumulation and Management

It is apparent that over the long-term of SR1, sediment will accumulate in the reservoir. Through each use, the suitability for wildlife will decrease. Where is the Proponent addressing this evolution of the Project over the long-term? The sediment projections provided by the Proponent in their latest responses (July 2020) do not appear to show a 20, 50, 100 year evolution of sediment under various flood scenarios. In our last submission, we highlighted the short-term view of the Proponent on the environmental value of the reservoir. We again highlight that we are still missing a long-term view of what the reservoir and its components look like. We would like to have a comparable project for reference on the long-term environmental outcomes.

The Proponent appears unable to estimate sediment drying times within the Reservoir post-flood. Do these drying times differ across scenarios?

Were silt deposits from 2013 analyzed? What were the properties? Does CEAA or NRCB have a report on this at is it relevant to management of SR1. What is the plan to assess sediment qualities post-flood to determine impacts on biodiversity and manage the post-flood environment appropriately?

Native Grasslands

On page 42 of the CEAA report, there is no mention of the native grasslands. There is a significant amount of native grassland within the Project area and this should be identified. This should be stated for the record.

Focus on the Reservoir:

The Proponent and regulators have focused on the reservoir operations and consequences on biodiversity and wildlife. The reservoir accounts for approximately 50% of the project footprint. The remainder of the footprint is diversion channel and emergency spillway, which does not appear to be

conducive to any migratory bird activity, the diversion inlet area, which will be reconstructed from its native state, and the outlet, which the Proponent is requiring erosion protection.

Diversion Channel:

Today, this land is in its native state. It is mostly native grasslands. From this rich and vibrant native state, it will go to 1800 acres or so of bedrock and riprap, with the balance seeded. This a tremendous loss. It would be reasonable to expect that activation of the emergency spillway would also cause harm to migratory birds.

Has the proponent considered that changes (fill, topsoil, etc.) to the diversion channel may make impact migratory birds?

Inlet Area:

The current and proposed images of this area show the large amount of construction and deviation from the natural state of the river. This area must be a rich and diverse environment for migrating birds.

Current State:



Original

Location 1 Original - 61m elevation

Future State:



Unnamed Creek:

The unnamed creek is a riparian ecosystem that appears to be changed fundamentally by the SR1 Project. There has been very little talk of this important element of the Project. It was originally planned to be in its natural state but is not requiring erosion protection. See the google earth image:



How, exactly, is the Proponent going to add erosion protection to this area and what are the impacts?

Annual Maintenance

Will trees/ vegetation be allowed to grow on the downside slope of the embankment and along the diversion channel where there is no riprap? If not, how will this be managed? What will be the frequency of inspection and types of vegetation management on this slope and its impact on species at risk?

5.1: The Proponent shall conduct pre-construction surveys to determine the distribution of little brown myotis (myotis lucifugus) in the project development area. The Proponent shall establish, in consultation with Indigenous groups and relevant authorities, buffer zones around little brown myotis (myotis lucifugus) active roosts identified during the pre-construction surveys or found by the Proponent or brought to the attention of the Proponent by an Indigenous group during any phase of the project. The Proponent shall maintain the buffer zones from their installation and for the duration of the project or until the roosts are permanently abandoned. 5.2 The Proponent shall conduct, prior to construction and in consultation with Indigenous groups and relevant authorities, breeding habitat surveys for the northern leopard frog (Lithobates pipiens), western toad (Anaxyrus boreas), and western tiger salamander (Ambystoma mavoritium) within the project development area.

Proposed Condition: We agree with this condition and request that it be clear to the Proponent that the surveys must include the entire SR1 Project Area, not just the reservoir.

Regarding buffer zones, how are buffer zones being established? Fencing? How will ungulates and bears access these areas if they are fenced? We request more specificity on this buffer zone condition.

5.3.1 the installation of silt fencing prior to construction.

What is the impact of this silt fencing on the other species that will use the SR1 lands (ungulates, bears)?

We are unsure of how the sediment management process (in Section 4 of the Conditions) will impact these species at risk: The sediment removal and recontouring processes both need to include heavy equipment and thousands of trucks which will create air pollution and noise.

SR1 Maintenance

There is little clarity regarding the annual operations of the project and its impact on wildlife.

- Will trees/ vegetation be allowed to grow on the downside slope of the embankment and along the diversion channel where there is no riprap? If not, how will this be managed?
- What is the frequency of inspection and types of vegetation management and is it consistent with URBR guidelines as outlined below?

The Proponent has a very low budget for SR1 maintenance but nothing in the way of detail has been provided.

Based on USBR standards of embankment maintenance, all growth on an embankment should be discouraged. It is likely that similar rules apply to the diversion channel. How about the floodplain berm? Is it to be mowed and kept free of burrowing animals and vegetation? How can regulators assess the Project's implications when the maintenance plans are unclear?

It appears that, according to USBR¹, the following should apply for the downstream embankment slope [emphasis added]. None of these activities seem consistent with encouraging wildlife to remain in the area.

*If the downstream zone of an embankment consists of rock or cobble fill, no special surface treatment of the slope is necessary. Downstream slopes of homogeneous dams or dams with outer sand and gravel zones should be protected against erosion caused by wind and surface runoff using a layer of rock, cobbles, or sod. **Because of concerns with burrowing animals and the difficulty of obtaining adequate slope protection using vegetative cover at many damsites, especially in arid regions, slope protection using cobbles or rock is preferred and should be used where the cost is not prohibitive.** Figure 2.2.5.4-1 shows the downstream cobble slope protection at Jordanelle Dam. Layers 24 inches in normal thickness are easier to place; however, a 12-inch-thick layer usually affords sufficient slope protection. Often, this type of material can be obtained by separating oversized materials from borrow areas or aggregate processing. If grasses or other vegetation are planted, those suitable for a given locality should be selected, and a layer of topsoil is usually required. The advice of an agronomist should usually be obtained to ensure success. **Vegetation that will conceal seeps, animal burrows, etc., should not be used. Exit surfaces to internal drainage layers should not be covered by vegetation. Any vegetative covers should be maintained in a condition that will not conceal deleterious conditions. Slopes should be flat enough to allow access for maintenance equipment.***

¹ <https://www.usbr.gov/tsc/techreferences/designstandards-datacollectionguides/finalds-pdfs/DS13-2.pdf> 2.2.5.4
Downstream Slope Protection

Rescue Operations

The Proponent persists with a “we will figure it out” approach to wildlife management. Overall, this cavalier approach to something as important as mass mortality of wildlife within SR1 is not acceptable. In our view, it is best to assume the worst-case scenario is NO wildlife is removed prior to flood. If wildlife mortality is a concern, the Proponent should DETER wildlife from entering the footprint in the first place. This creates a wildlife dead zone and someone needs to decide if that is better than a zone with dead wildlife. We look to the regulators to provide leadership on this matter as the Proponent continues their optimistic assessments of wildlife rescue activities and their ability to forecast flood.

Location of Clearing Activities:

CEAA states that rescue operations will be necessary for the reservoir, but what about the diversion channel and unnamed creek? Would it be better to say all within the Project footprint?

Will clearing take place in all the following areas, or just a select few areas of the reservoir:

- Inlet / Floodplain Berm?
- Vegetated areas of the diversion channel and emergency spillway?
- The full reservoir (or just the parts closest to the embankment)?
- The embankment waterside slope?
- The unnamed creek?

Logistics

*5.5. The Proponent shall develop the protocol prior to construction, taking into account the flood forecasting undertaken in accordance with condition 4.8.1. The protocol shall include measures to rescue and relocate northern leopard frog (*Lithobates pipiens*), western toad (*Anaxyrus boreas*), and western tiger salamander (*Ambystoma mavoritium*) to suitable habitat outside the reservoir footprint.*

Comments on this condition (our comments on flood forecasting limitations are listed in responses to 4.8.1: As for the rescue operations, comments are below (with some updates to 4.8.2):

We contend that amphibian clearing and rescue operations are optimistic, rather than realistic and request that CEAA require a preliminary, but detailed, rescue plan prior to the final CEAA and NRCB reports. The Proponent needs to identify who wildlife rescue personnel are and where they are located. Will hotels be required? Will they be on standby during a flood? How many person-hours of rescue will be required under various flood conditions? What is the operational cost of this rescue effort (which should be a component of the Proponent’s cost estimate)?

The Proponent persists with a “we will figure it out” approach to wildlife management. Overall, this cavalier approach to something as important as mass mortality within SR1 is not acceptable. In our view, it is best to assume the worst-case scenario is NO wildlife is removed prior to flood. If mortality is a concern, the Proponent should DETER wildlife from entering the footprint in the first place. Yes, this

creates a wildlife dead zone and someone needs to decide if that is better than a zone with dead wildlife. We look to the regulators to provide leadership on this matter as the Proponent continues their optimistic assessments of wildlife rescue activities and their ability to forecast flood.

Regarding the removal of vulnerable wildlife in advance of flood, we would like to remind regulators that floods are preceded by an intense period of rain, such as in 2013 and 2005. Removing wildlife during these significant rain events must be carefully evaluated for safety, efficacy and logistical reasons.

1. We do not see wildlife clearing activities in Figure 1-1 Operational Flow Chart for the Project. Where is this step and who is responsible?
2. Based on historical river flow rates and historical rain events, how many times would wildlife clearing mitigations have been required? Would it have been required in 2020 given the substantial rain received in June?
3. Is it realistic for a large team of experts to be brought in to remove wildlife with little or no notice in the 24-72 hours before reservoir use to clear wildlife?
 - a. Is 2-3 days adequate for wildlife removal? What percentage of wildlife can be removed during that timeline? How much wildlife can be removed in 1 hour? 6 hours? 12 hours?
 - b. Do rescue teams work overnight?
 - c. What assumptions are required to arrive at a clearing and relocation mitigation within the 2-3 days notice?
 - d. How successful are they likely to be in removing wildlife during this time, given the difficult working conditions (rain & associated groundwater challenges) and large footprint?
4. Will vehicles be required to access various locations in the reservoir? Will roads be required to provide access? Where is the planning for these roads?
5. How many animals can be rescued by one person in on hours under expected working conditions in a rain event? How many animals per vehicle?
6. Where will animals be relocated to? centres? Other crown lands? Are these within 5km? 10km? 100km?
7. Will they remove this wildlife from the entire reservoir footprint or are they able to predict the level of flood (1:10 to 1:100 year flood) with accuracy such that not all will be removed? How will priority areas be identified?
8. During rescue operations, what wildlife are targeted for rescue? Which ones will be left to be inundated?
9. Is there a risk that this wildlife rescue team will delay SR1 operations by their presence in the reservoir?
 - a. How much notice will be given to this team to exit the reservoir prior to use? If the gates are open, the rescuers cannot safely operate.

- b. What road accesses will this team use and what will be the proximity of roads to the wildlife areas? Is it realistic for this team to walk to and from vehicles and how many nests can one person save given the location?
 - c. If SR1 use is imminent, what is the evacuation procedure for the wildlife rescue team and how long will this evacuation take?
 - d. Does silt accumulation over time impact the effectiveness of this rescue mission? Can the team walk in the silt once it is wet? Can they drive vehicles in silt once it is wet?
10. Is it realistic for this team to grab the amphibians if they see any, as proposed by the Proponent?
- a. Can all amphibians survive flood events within the reservoir?
11. Is wildlife removed pre-flood planned to be returned to the SR1 area post-flood? Why or why not and where will wildlife be settled?
12. Will this clearing of wildlife impact future populations in the area where clearing was performed?
13. If the emergency rescue of wildlife pre-flood is not realistic or is unsuccessful, what is the backup plan for wildlife management in the SR1 footprint?
- a. Will wildlife be cleared each year in May or early June, or just years where the Proponent believes that AEP can accurately forecast flood?
 - b. Will wildlife instead be deterred from entering the SR1 footprint each year until flood risk has passed?
14. What are the predictions of wildlife mortality (by species and life stage) under the various flood scenarios, early and late release, if they are not removed from the SR1 reservoir?
15. Who are wildlife rescue personnel and where are they located?
- a. Will hotels be required?
 - b. Will they be on standby during a flood?
 - c. How many person-hours of rescue will be required under various flood conditions?
 - d. What is the operational cost of this rescue effort (which should be a component of the Proponent's cost estimate)?
 - e. Who does this team of wildlife experts consist of?
 - f. Will they be on retainer to work on a moment's notice or are they volunteers?
 - g. Will volunteers need liability insurance?
 - h. Who will coordinate this group? Is this a full-time role?
 - i. Which wildlife is priority, if time is of the essence?
 - j. Will this team be on standby each spring, at taxpayer expense, when rainfall and snowmelt are expected?

Flood Forecasting Limitations

16. By what methods will floods be forecasted for wildlife removal planning and using that forecasting method, in how many of the last 20 years would SR1 have been cleared of wildlife?
 - a. At what point in the spring will the Proponent arrive at these projections and if flooding is a risk for that year, what arrangements are made with which groups to perform removals? When? How much is the cost?
 - b. The Proponent's view seems to be that floods can be predicted with enough time to clear vulnerable wildlife from the reservoir (and diversion channel?) footprint. It seems that, at best, 2-3 days notice will be provided before a flood.

Other

1. We are not clear on the rationale for a survey only pre-construction. We request that a survey be done prior in the year post-construction, each flood year and the 3 years post flood. Detailed reports on the wildlife populations should be prepared in the years post-flood to fully assess the consequences of SR1.
2. The surveys need to include the entire Project footprint. The diversion channel accounts for approximately 50% of the project footprint and the balance of the footprint is the floodplain berm and large earthen embankment. Where is the consideration for these elements? Is there a statement by regulators that wildlife is permanently displaced from the diversion channel which is now largely riprap?
3. The Proponent should identify the cost of a wildlife surveys on the 4000 acres of SR1 along with an indication of the resources required. Is this volunteer-run? If not, is this an independent party?

Proposed condition: The Proponent shall conduct inventories of wildlife, including mapping of important habitat features, shrublands, wetlands and grassland within the reservoir footprint prior to construction and every five years IN DRY YEARS starting the first year of operation. In a flood year, the impact of the Project on wildlife should be assessed fully with a complete report on the success of rescue operations (estimated birds/nests rescued from the Project area, mortality during rescue and transport, details of the rescue effort – man hours, working conditions, resources required, cost, etc.). Further, wildlife surveys should be conducted in each year post-flood for [3] years to assess the impact of the Project flood condition operations on migratory birds. Post-flood wildlife surveys shall include a review of the sediment deposition on wildlife quantities and behaviour.

5.6 The Proponent shall mitigate the adverse environmental effects of the Designated Project on wetland functions by avoiding the loss of wetlands and wetland functions when feasible. When avoidance is not feasible, the Proponent shall minimize adverse effects on wetlands, and shall compensate any permanent loss of wetlands or wetland function, taking into account Alberta Wetland Policy.

Proposed Condition: The Proponent shall provide the cost of wetland replacement. The MC1 cost estimate 708,000 for wetland replacement (with 23ha permanently impacted = \$30,783/ha). In IR421, the Proponent states that SR1 construction will permanently impact 15.3 ha and another 11.7 post flood. This is total 27 ha costs approximately \$833,000, using the MC1 cost/ha).

Further, we are unclear of the impacts of sediment accumulation on wetland functioning and request that regulators require forecasts of silt depositions under various flood conditions overlaying wetland areas (1:10, 1:50, 1:100, 1:200, Design) plus a long-term view of silt accumulation (multiple floods).

We request a map with all the wetlands and water bodies mapped with their associated setbacks.

5.7 The Proponent shall direct any drainage pathway, constructed or modified as part of the Designated Project, away from wetlands.

The grading of the reservoir from the fish section contradicts this section because it not possible to grade reservoir where these wetlands exist. How will this work, in detail?

Condition: We request a condition regarding measurement of the chemical and physical properties of the sediment located throughout the reservoir post-flood. We expect that there may be some level of toxicity in the sediment, as found after the 2013 flood when residents of Bragg Creek were told to avoid contact with sediment. We also request that mitigation measures be identified for management of sediment that is determined to have toxic properties.

Once again, thank you for your consideration of our concerns.

Regards,

Karin Hunter

President, Springbank Community Association