



# SR1 Project: Executive Summary

On behalf of the impacted communities of Bragg Creek and West Bragg Creek, Redwood Meadows and Springbank, Alberta.

The Springbank Off-Stream Reservoir (“SR1”) is not in the public interest. This permanent project has lasting, negative impacts that will be felt acutely by Elbow River communities, including the City of Calgary, for generations. Community members of Bragg Creek and Upper Bragg Creek, Redwood Meadows, Jumping Pound and Springbank have united under the umbrella “Elbow River Sustainability Alliance (ERSA)” to review the Proponent’s submissions and provide comments to both the National Resources Conservation Board (“NRCB”) and the Impact Assessment Agency of Canada (“IAAC”, formerly “CEAA”).

Despite the prolonged public debate about SR1, we point out that fulsome responses by the Proponent have only occurred within the past ten months following detailed questioning by regulators.

- The Environmental Impact Assessment (“EIA”) was filed in November 2017, with submissions available on the NRCB website in March 2018.
- NRCB Priority Information Requests (“IRs”) were issued in February 2018, with additional Supplementary Information Requests (“SIR1”) in June 2018.
- IAAC (CEAA) Information Requests (“IRs” 1, 2 and 3) occurred in June and August 2018.
- Proponent responses to the 2018 NRCB and IAAC (CEAA) IRs were submitted in June 2019.
- IAAC (CEAA) issued conformity reviews (deficiencies) in July and August 2019 (Proponent issued responses in November and December 2019).
- NRCB Issued additional IRs (SIR2) in November 2019 (awaiting responses).

It is clear now, based on the Proponent’s responses to regulators that SR1 has terrible outcomes for the environment, wildlife, fish and communities along the Elbow River. With new clarity about the lasting and adverse outcomes, we respectfully request that this project be denied permission to proceed. Rather than the simple, fast or cost-effective option it was touted as, SR1 is large, complex, costly and requires a leap of faith that negative effects and risks can be managed using mitigation measures designed in the future.

We recognize that the Proponent is under significant pressure to build this project. The political and social impetus to address flood risk cannot be overstated. However, in our estimation, SR1 will forever damage the aquatic ecosystem of the Elbow River downstream of the Project, while leaving a lasting void in our ability, as Albertans, to plan and manage the Elbow River’s water supply for flood, drought, fire, water quality, quantity and security.

There are fundamental and insurmountable flaws in the process used to choose the Project. In addition, the Project itself is deeply flawed and laden with uncertainty. It is time for a reset on this project. We believe strongly that this project is not in the public interest, and believe that all Albertans deserve better. We cannot afford to get it wrong. The project underway to consider three alternatives for an in-stream dam on the Bow River west of Calgary provide an opportunity to use best-practices to fairly evaluate long-term water management alternatives for the Elbow River Watershed.

## SR1 IS A LOST-OPPORTUNITY FOR WATER MANAGEMENT

We ask the regulators to consider the true objectives of water infrastructure as a tool for flood, drought, fire, recreation and water quality, quantity and security. The SR1 project's single-minded focus on flood has impaired comprehensive planning of the Elbow River Watershed. Global best practices have been ignored. The October 2015 Deltares Report states:

*"The province should continue to pursue the multiple layers approach to flood mitigation as outlined in previous work on Room for the River, structural mitigation is only one element. Programs like wetland restoration, flood way regulations and removal of obstructions should continue."*

It appears that, once SR1 was chosen, the principles of watershed management highlighted by Deltares, WaterSmart, the Provincial Government, and the Bow River Basic Council, were lost. SR1 fails to deliver on the critical water management challenges and opportunities of the region and does not even provide an adequate solution to flood mitigation.

We have many in-stream dams in Alberta and these conventional projects create new parks and recreation capacity, provide water security and manage water levels during flood and drought. Ultimately, in-stream dams generate economic, social and recreational utility to the residents of this province.

## SR1 DESIGN SHOWS A LACK OF CONSIDERATION OF CLIMATE CHANGE AND ITS IMPACT ON WATER SYSTEMS

When considering SR1, we ask regulators to consider the effects of climate change on our water systems. Climate change is impacting frequency and severity of weather events, both flood and drought. SR1 appears to be designed with a historical flood levels in mind, which is a calculated risk by the Proponent. Climate change should have been a key factor in the solution proposed by the Proponent. Instead, it appears to have been dismissed.

There was minimal objective, scientific comparisons of SR1 to alternatives on important broader dimensions of drought mitigation, water quality, quantity and security, fire protection and recreation in the context of climate change.

The City of Calgary relies on the Elbow River for drinking water for approximately 500,000 Calgarians. SR1 makes no positive contributions to water security, and may inflame water quality issues when the reservoir is in use. With Calgary reaching the limit of its daily water withdrawal capacity by 2036, SR1 is clearly the wrong choice.

## UPSTREAM PLANNING FOR FLOOD AND FIRE IS INSUFFICIENT UNDER SR1

The separation of SR1 from Bragg Creek and Redwood Meadows flood mitigation projects is problematic from both a cost and an environmental impact perspective. The most recent cost projection for Bragg Creek is \$42 million, well up from the original \$8.9 identified in the 2015 IBI report. This is a true cost of the SR1 project. As for the design, the Proponent has not adequately addressed the “sandwiching” of Redwood Meadows between two flood projects. In a flood event, SR1 and the Bragg Creek berms will interact together impacting the entire region, including land belonging to the Tsuut’ina Nation. Further, it is clear to residents of Redwood Meadows that berms will provide inadequate flood protection relative to an in-stream dam. It is wrong and disingenuous to evaluate upstream flood mitigation projects separately from SR1. Further, catastrophic erosion of upstream riverbanks during flood and annual erosion of berms, will still occur under SR1.

Fire risk is significant in the Kananaskis / Bragg Creek Region. The risk of fire, as we have seen in Alberta, is real and the outcomes are catastrophic. Meanwhile, SR1 is incapable of helping with fire suppression. An in-stream dam with live storage will help manage this risk. In May 2018, the Champion Lakes fire threatened Bragg Creek and Bragg Creek residents live in fear of wildfire. Yet, there was no consideration by the Proponent of how live-storage at McLean Creek (“MC1”) could assist with managing this risk. Further, there was no willingness by the Proponent to listen to community concerns regarding this important topic. In-stream dams are a vital resource supporting fire protection and suppression in many jurisdictions, including Alberta.

The opportunity for improved recreation capacity resulting from live-storage at the McLean Creek site could materially improve the economic prospects of the Hamlet of Bragg Creek, while adding much needed infrastructure upgrades for the hundreds of thousands of visitors to the area each year. Much recreation infrastructure in the McLean Creek area was destroyed in 2013: the popular Allen Bill pond was washed away; the park infrastructure at Elbow Falls is gone. Yet, the area continues to be a destination for Calgary residents. Bragg Creek, and indeed, Alberta residents would benefit from a sustainable upstream recreation destination.

## THE PROJECT IS LADEN WITH CHALLENGES, RISKS AND NEGATIVE CONSEQUENCES

It appears, based on our research and inquiries of subject matter experts, that this project is the first of its kind. There appear to be **no comparable projects to SR1 that have a similar geography** of mountains and foothills. Thus, many questions remain about the risk to communities both upstream and downstream.

SR1, a tool for flood mitigation, has significant limitations that have not be adequately explored. The Deltares Report states:

*“Temporary storage of water in detention areas is not a very robust measure, in the sense that it is effective up to a certain design condition, but when it is overcharged its effect is reduced to nil. And, moreover, it is very sensitive to ‘sound operation and fast response time’. When floods up to the size of the June 2013 flood would be avoided, but anything above would not be reduced in size, the awareness of the people in the floodplain will further decline, making them (and society at large) even more vulnerable.”*

**Risk:** This project is an unproven experiment. It is a large-scale intervention in the natural water system, with uncertain outcomes. The project introduces a tremendous risk during flood events. The stated Consequence Classification Rating for SR1 is “Extreme” based on the scale employed by the Canadian Dam Association. It should be lost on no one that a failure of SR1 directly impacts human safety in Calgary, on the Tsuut’ina Nation and ERSA

communities. Recognizing - indeed having experienced first-hand - the infrastructure, economics, environmental consequences of flood, a significant safety evaluation is warranted. Additionally, SR1's design introduces new risks: transportation, egress, pipelines and operating risk, to name a few. We believe that submissions by the Proponent should include a comprehensive risk assessment by an independent third party experienced in risk analysis and quantification of complex projects.

**Water Quality:** Water held in SR1 will experience eutrophication with blooms of blue-green algae (cyanobacteria) and other bacteria due to elevated nutrients following a flood (nitrogen, phosphorus, iron and trace metals). Further, there is no doubt the elevated water levels will move this contaminated water into the aquifer. That is the way aquifers are charged and this has been documented at monitoring water wells at Camp Gardner.<sup>1</sup>

**Air Quality:** Air quality is a major community concern given the astronomical silt projection provided by the Proponent. Reseeding plans by the Proponent do not align with our past experiences with silt produced in prior Elbow River floods.

**Environmental Outcomes:** The Proponent has not addressed the tremendous weight of the silt (and in flood scenarios, combined silt and water weight) on the underlying ground and groundwater systems. Environmentally, SR1 creates unprecedented outcomes:

- The Proponent expects 2.3 million tons of silt to deposit in the reservoir during a design flood, with depths up to 4 meters. This is an astounding and lasting consequence with unknown impacts to all living organisms in the region! We cannot reasonably expect the Elk to wade through four meters of silt, for example.
- Significant and material impacts on animals, plants and insects in the SR1 reservoir during use is expected. Ecosystems along the boundary of Foothills Parklands of Springbank and the Montane Forest Subregion immediately west of the SR1 have a high wildlife density. Species at Risk and Species of Special Concern are directly impacted by the creation of SR1 in their habitat and will be subject to mortality each time the project is activated for a flood event. This is net new mortality, during a time of year when species are highly vulnerable. The Proponent relies on speculation regarding in-flood and post-flood operations effects on wildlife. We do not believe the Proponent's assertions that impacts on wildlife are "not significant". The proponent is wrong to dismiss these impacts as "not significant" with no quantitative evidence to support the claim. We ask regulators to dismiss all "qualitative assessments on wildlife" as they are not valid and cannot possibly provide a basis for before/after evaluations. The onus is on the Proponent to demonstrate that the habitat is not altogether compromised.
- SR1 results in terrible outcomes for fish, as admitted by the Proponent in recent submissions ("TSS concentrations have the potential to cause lethal and sublethal effects on fish during the release period.")<sup>2</sup>.

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<sup>1</sup> Bryer Manwell's MSc thesis of the aquifer and by Everdingen, Bergeron, and Mellor at Camp Gardner and the Glencoe Golf Course in "Alluvial Aquifers of the Bow and Elbow Rivers, Alberta" (City of Calgary Water Resources, 2009).

<sup>2</sup> IR Responses, Table 5-2

**Health Outcomes:** There are a range of health outcomes that were not anticipated in 2014. We point out to regulators that the Project is directly west of Springbank's three area schools, soccer fields, senior's centre and recreation centre. The Proponent has not addressed our concerns about:

- Increased mosquito activity during and after flood operations;
- Impacts of silt mobilization to at-risk populations near and to the east of the reservoir (already known to exceed Canada's regulations);
- Potential adverse water quality outcomes resulting from temporary storage of floodwaters; and
- Mental health concerns (trauma and anxiety) of upstream Albertans exposed to flood and fire.

**Bio-physical, social and economic outcomes.** The project can only be considered value-destroying in western communities. An 8-story, 4km berm in central Springbank, a 150+ meter wide diversion channel and silt deposited over hundreds of acres – permanently – in the reservoir post-flood. There has been no discussion of the long-term impacts of this silt-reservoir on our communities. The SR1 lands sit at the junction of the TransCanada Highway and Cowboy Trail, two busy tourism corridors on the path to the Rocky Mountains. This land is valuable and has tremendous utility, now and in the future. The removal of this land from our communities, and its replacement with a wholly negative outcome is not contemplated in the EIA.

## THE PROJECT COST, SCOPE AND COMPLEXITY HAS INCREASED BEYOND REASON

The estimated size and cost of the project has nearly tripled from its early design, and continues to increase. How has this project grown so significantly and unchecked? The expanded scope has not come with expanded benefits; only expanded social, environmental, health risks and costs, among others. Fortunately, the regulatory process has shed light on the myriad of complications, limitations and risks.

The Proponent has evolved the project with impunity and without consultation with or input from affected stakeholders in advance of, or following, scope escalations. We only hear about scope escalations by monitoring regulatory submissions.

SR1 now costs more than the alternative at MC1, without contemplating the tangible economic benefits from a permanent reservoir at MC1. Both capital and operating costs for SR1 are overly optimistic and fail to consider key pieces of information.

## DECISION PROCESS WAS FLAWED

SR1 was announced in great haste in 2014. Sufficient information to make a decision of such importance was simply not available at the time. In fact, the 2014 WaterSmart report made no mention of SR1 as an alternative. The first reports on SR1 were not available until 2015.

SR1 was chosen without public consultation to inform the decision. The very communities directly impacted by the proposed solution were not consulted and engaged for their ideas and experience. ERSA communities bear all of the costs and none of the benefits of SR1. Our decades of hands-on experience living with the Elbow River was not asked for, considered or incorporated.

*"This is just a small group of landowners that are opposed to it [SR1]. I think the landowners group, they're entitled to their opinion and so on, and we will consult on how we implement this decision, but we're done consulting on the decision because it's been made."<sup>3</sup> (2016)*

*Brian Mason, Minister of Transportation*

The Project was chosen to meet the needs of one stakeholder (City of Calgary) and one risk (flood). Even more to the point, the project was selected to meet the needs of some parts of Calgary and to address only one specific flood scenario. These narrow objectives have been a tremendous source of anxiety and frustration in our communities, who feel marginalized, while the project places direct burdens on our communities.

In response to questions by the Springbank Community Association regarding the Project's ability to address drought and fire, the Proponent states:

*"The Project was chosen to be a flood mitigation project by temporarily diverting, retaining and releasing water back to Elbow River when flooding subsides. The Project was not intended to address other uses such as drought or fire prevention."<sup>4</sup>*

When the Deltares Report was released in October 2015, it was clear that this narrow focus on flood had tipped the scales towards SR1 and away from MC1. Although there was a "climate change" criteria, there was no mention of drought, fire or drinking water security! We are at a loss to explain this exclusion.

The Deltares Report was in no way a complete, detailed assessment of SR1 and potential alternatives. Instead, a high-level overview of early, incomplete, and selective information resulted in a brief and hastily delivered report. Further, the Deltares report relied on value-based judgements made exclusively by consultants and within the Government and without public input. Rocky View County's 2018 report provides a good critique of the decision process. To our knowledge, the Proponent has not responded to the County regarding this submission.

While the best practice, as identified by the Proponent's own consultants (AMEC), is to conduct a Triple Bottom Line Analysis, this was never done for the SR1 project. In fact, the Project appears to have been chosen for its benefit/cost ratio and its timeline advantage over MC1. The Proponent has consistently reiterated, as recently as January 2020, in letters to those opposed<sup>5</sup>, that SR1 is cheaper and faster. It is clear that those judgements of speed and cost were, and continue to be inaccurate. SR1 is clearly inferior to MC1 from a holistic water

<sup>3</sup> <https://www.cbc.ca/news/canada/calgary/brian-mason-springbank-landowners-1.3586690>

<sup>4</sup> [https://www.nrcb.ca/download\\_document/2/83/9749/20191203-at-corr-to-springbankcomassoc-re-responses-to-20190726-questions](https://www.nrcb.ca/download_document/2/83/9749/20191203-at-corr-to-springbankcomassoc-re-responses-to-20190726-questions)

<sup>5</sup> <https://drive.google.com/open?id=146ZnSyX5hqpMbkH5pDGR8rQT-z5yJxgc>

management perspective and it is time to use a broader set of evaluation criteria to review this project and its alternatives.

We compiled the following assessment (which does not take into account project risk).

	SR1	McLean Creek
<b>Description</b>	<b>Off-Stream Reservoir</b>	<b>Conventional Dam</b>
Land Designation	Private Land	Crown Land
Estimated Price <sup>1</sup>	\$506+ Million	\$407 Million
Land Required	4000 - 7000 Acres	1200 Acres / 2300 Acres <sup>5</sup>
Capacity	Up to 104 million m <sup>3</sup>	68+ to 100 million m <sup>3(7)</sup>
Timing	4 Year construction	4 year construction
Impacted Utility / Gov't Infrastructure	Multiple high pressure pipelines & roads	One pipeline, one road, old ranger station, transmission line
Other Impacted Infrastructure	Numerous homes & businesses, Kamp Kiwanis	Campgrounds & parking
Current Status	Approvals delayed	Not seriously considered
<b>Flood Protection</b>		
Calgary	Yes	Yes
Bragg Creek / Redwood Meadows	No	Yes
<b>Impact on Local Area</b>		
Health (Air, Water Quality, Mental Health) <sup>2</sup>	Harmful	Positive
Social (Tourism, Community) <sup>3</sup>	Harmful	Positive
Economic (Taxes, Businesses, Development Opportunity) <sup>4</sup>	Harmful	Positive
<b>Ancillary Benefits</b>		
Hydroelectricity	None	TBC
Water Storage	None	Yes
Fire Protection	None	Yes
Drought Management	None	Yes
Parks & Recreation	None <sup>6</sup>	Yes

#### Notes

1: SR1 costs (\$463M from IR45-3) updated to include Bragg Creek berms (\$42M) for a total of \$506M . True infrastructure costs of moving pipelines & elevating Hwy 22, lost economic value of the SR1 land and fair compensation to private landowners; McLean Creek cost model ignoring positive economic outcomes from conventional dam and tourism-related economic benefits.

2: SR1 planners have not adequately addressed water and air quality concerns within the Springbank area

3: SR1 project analysis have omitted tourism and social consequences on local community (i.e. road closures) while at the same time ignoring the lasting social and recreational benefits of other upstream conventional dam projects

4: SR1 cost model disregards the material financial harm to RVC that result from loss of significant amount of private land

5: MC1 land requirements have increased in the 2019 IRs but unable to find justification

6: Existing recreation areas in MC1 areas remain status quo; much damage from 2013 floods remains

7: Difficult to find the latest projections for MC1 storage given the increased land size.



## THE IMPACT OF POLITICAL PRESSURE TO BUILD THE PROJECT

Supporters of SR1 frequently refer to the “greater good” in advocating for the project. In view of everything learned since 2013 and the growing consequences of climate change, this justification falls well short of the public interest of all Albertans.

*“...I believe the greater good is what we have to focus on and need to make sure that this city and all the people who live here are protected from rising flood waters.”<sup>6</sup> (2018)*

*SR1 is “vital to protecting the economic engine of the province,” adding only 22 landowners in the region would be affected by the Springbank project.<sup>7</sup> (2018)*

*“It’s their property and it’s been in their family for a long time, but in the end it’s a couple dozen families — and we understand their feelings on this matter — but, ultimately, Calgary is a city of a million people, it is the economic engine of Alberta and the downtown is threatened<sup>8</sup>,” (2018)*

*Brian Mason, Minister of Transportation*

We ask the regulators to consider whether this characterization of the “Greater Good” for Calgary Elbow River communities is a valid basis for the Proponent to:

- Advance a large-scale infrastructure project without public consultation;
- Ignore broader considerations such as climate change, water security, drought, fire and tourism;
- Dismiss negative impacts on health, social, environmental, tourism, and public safety;
- Rush a decision process, which initially excluded consultations with First Nations, Rocky View County and affected communities; and
- Trade the well-being of some parts of one community (Calgary) for five other communities of Bragg Creek Hamlet and Upper Bragg Creek, Redwood Meadows, Springbank, Tsuut’ina Nation.

*“Let’s not forget that five people died in 2013. Let’s not forget that there was \$6 billion of damage to the city of Calgary. And let’s not forget that every single person in this region requires a healthy city of Calgary economy and a healthy downtown Calgary for their own livelihoods.” (2018)*

*Calgary Mayor Naheed Nenshi*

We find the political rhetoric regarding SR1 disturbing, inflammatory and damaging to constructive dialogue about our river systems. The concerns with the Project are not unique to landowners. Our communities are united in the view that this Project is the worst possible outcome for the Elbow River Watershed and its communities, including the City of Calgary.

<sup>6</sup>Transportation Minister Brian Mason in 2018, <https://www.cbc.ca/news/canada/calgary/springbank-reservoir-project-1.4527599>

<sup>7</sup> <https://calgaryherald.com/news/local-news/rocky-view-council-petition-province-to-scrap-springbank-flood-mitigation-plan>

<sup>8</sup> <https://calgaryherald.com/news/local-news/rivers-groups-clash-over-springbank-dam-project-on-flood-anniversary>