



Alberta Wilderness Association
"Defending Wild Alberta through Awareness and Action"

June 25, 2020

Honourable Rick Mclver, MLA
Minister of Transportation
320 Legislature Building
10800 - 97 Avenue
Edmonton, AB
T5K 2B6
E-mail: transportation.minister@gov.ab.ca

Re: Special Areas Water Supply Project

Dear Minister Mclver,

Alberta Wilderness Association (AWA) is writing to express our concern regarding the proposed Special Areas Water Supply Project (SAWSP), reiterating our long standing opposition to the approval of this project. The SAWSP proposes to divert water from the Red Deer River by means of 100 km of pipeline for irrigation purposes to the Special Areas, which were established in 1938 to address the challenges of near-perpetual drought in east-central Alberta. This project has been studied extensively, with many different iterations of this project being proposed many times, and subsequently abandoned as it is neither an environmentally nor a financially responsible project.

Founded in 1965, AWA works throughout Alberta towards the completion of a wilderness protected areas network, and for good stewardship of all lands that are the source of our clean water, clean air and wildlife habitat. With over 7,000 members and supporters in Alberta and across Canada, AWA helps Albertans learn more about wilderness and watersheds, and participate in opportunities to conserve them as a legacy for future generations.

Socio-economics

Based on the government's commissioned socioeconomic review done by Klohn Crippen Berger, AWA believes that the SAWSP is not a financially responsible investment for the provincial government. While AWA is cognisant that this project subsidizes locally grown forage, the quantified costs significantly exceed benefits. Even in the optimistic 'high supply' scenario, only 12.8 cents is produced for every dollar invested into this project, and total costs are expected to exceed regional benefits by \$704 million. In the 'low supply' scenario, total costs exceed regional benefits by \$708 million. Agricultural commodity prices would have to increase substantially above current expectations in order to make the SAWSP a financially viable endeavour.

AWA is also concerned about the pertinence of this project for the Special Areas region as a whole, as accessing water from the pipeline is restricted by residents' location and financial means. Prior to accessing water from the pipeline for crop and/or stockwatering purposes, farmers will be required to make a significant upfront capital investment of approximately \$150,000. As it is currently designed, the pipeline is estimated to irrigate a total of 8,000 acres, or 61 quarter sections, but at an additive cost of almost \$11 million in private investments, which includes:

- 1) Purchasing and installation of centre-pivot irrigation systems (\$9.15 million),

- 2) Power hook-ups for said irrigation systems (\$1.61 million), and
- 3) Construction of new dugouts for stock watering (\$0.48 million).

While the potential to increase crop yields and expand current cattle operations could benefit some farmers and ranchers, these returns will be limited to those operations that can initially invest in required infrastructure. The SAWSP is not anticipated to have a cascade of economic benefits throughout the Special Areas region, rather the commissioned study states the project is expected to have “minimal effect on the overall economic condition in the Special Areas.” In addition, it is anticipated that returns on investments will be delayed by 6 years after project implementation, a conservative estimate assuming no considerable changes within the agricultural industry in the foreseeable future.

Overall, the report suggests that SAWSP would cost far more than its economic benefits, and would prevent public investment from more valuable provincial infrastructure and programs.

Biodiversity-species at risk

AWA believes that the increased threat to grassland species at risk posed by SAWSP in the Special Areas region is completely unjustified. According to the Environmental Impact Assessment (EIA), the SAWSP is expected to make permanent changes to the landscape, most notably the loss of important grassland wildlife habitat through terrain alterations and inundation of water. As it is currently designed, 25% of the SAWSP area overlaps with native grasslands. Changes to reservoirs, canals, channels and the creation of multiple-use project areas (MUPs) will result in a shift away from climax fescue grasslands and needle grass communities to more open water and wetland communities. This will ultimately affect habitat availability to resident wildlife, including the viability of populations of species at risk.

Multiple Key Indicators (KIs) were identified in the EIA: “their presence [was] used as a sign to indicate the overall health of their ecosystems.” The wildlife KIs chosen include:

- 1) Burrowing Owl (*Athene cunicularia*); Endangered status under both Alberta’s *Wildlife Act* and *SARA*
- 2) Yellow Rail (*Coturnicops noveboracensis*); - Special Concern status under *SARA*
- 3) Loggerhead Shrike (*Lanius ludovicianus*); - Threatened status under *SARA*, Species of Special Concern under Alberta’s *Wildlife Act*
- 4) Baird’s Sparrow (*Ammodramus bairdii*); - Endangered listing under *SARA*
- 5) Piping Plover (*Charadrius melodus*);- Endangered under Alberta’s *Wildlife Act*, Endangered under *SARA*, and
- 6) Canadian Toad (*Bufo hemiophrys*);- Non-game animal under Alberta’s *Wildlife Act* and No status under *SARA*.

The EIA for SAWSP has identified permanent changes to habitat for all identified KI species, with some species anticipated to experience a higher degree of residual impact once construction is completed and the pipeline is operational. Despite the EIA report summarizing these impacts to KIs as negligible, cumulatively, the SAWSP is anticipated to reduce optimal regional habitat across all KI species by 50.4%, which is far from negligible effects.

As an example, the report lists a 14.3 % decrease in habitat suitability and availability for endangered burrowing owls in the Regional Study Area from SAWSP. Access and distribution of suitable habitat has been attributed as one of the main drivers for decreased population size for burrowing owls in Alberta,

with cropland conversion, industrial and residential developments, and shifts in predator-prey communities being key contributors to this phenomenon ¹. With habitat management being cited as a top priority within Alberta's burrowing owl recovery plan, AWA believes it is blatantly irresponsible to approve the SAWSP as it is anticipated to significantly reduce the quality and quantity of regional critical habitat for this species at risk.

Soil Salinization

The suitability of this project for the Special Areas is also brought into question when evaluating regional soil types. A significant portion of the Special Areas, is underlain with solonchic soils, which are generally unsuitable for irrigation (over 30% occurrence). Solonchic soils are characterized as having high levels of sodium which results in physical and chemical composition that can reduce crop emergence, root growth, and water infiltration, all of which results in reduce plant growth and limited yields ².

Wetlands

SAWSP's local study area is comprised of 11% wetlands, with the socio-economic study claiming a net increase of 5,977 acres of wetlands once the pipeline and supporting infrastructure are developed to the full extent. While the generation of more aquatic habitat seems promising, AWA is concerned that the functionality of these areas will not replicate that of natural wetlands, and that the current approach may not even achieve a 'no net loss' scenario. The loss of wetlands through the development of this pipeline is stated to be offset by the creation of multiple-use project areas (MUPs) along the channel, however, uncertainty remains whether the MUPs will enable true compensation of natural wetlands lost. Research has shown that the functionality and biological composition of reclaimed or man-made wetlands are significantly less compared to natural wetlands³. AWA believes that the potential loss of natural wetlands poses a significant risk to habitat quality, which could ultimately further reduce the overall biodiversity of the region. Reduced functionality in wetlands also reduces ecological services that are vital to surrounding landscapes, including sediment and contaminant capture, water storage for drought resiliency, and carbon sequestration.

Water quantity and quality

The SAWSP EIA assumes that flows within the Red Deer River will remain relatively consistent over time, despite a changing climate. It implies that water from the Red Deer River would always be available for diversion into the water pipeline at 2.5m³/second. AWA is concerned that the SAWSP project design has failed to address the risk of unavailable flows, to this junior-priority water license in times of drought, which further undermines the project's projected value.

While the intent of the SAWSP project is to increase the regional availability of water for crop irrigation and livestock water, AWA is also concerned that this project will do more to decrease aquatic conditions both within the Special Areas and the Red Deer River watershed.

The SAWSP would entail changes to the water discharge regime within the Special Areas region with the installation of the pipeline and supporting infrastructure such as reservoirs and dugouts, in addition to terrain alterations from the inundation of some areas and the general loss of established natural river corridor habitat and wetlands. AWA is concerned that the construction of the water pipeline would result in more erosion and sediment deposition in both the short and long term. Stream bank erosion from newly constructed or altered channels, accelerated stream meander progression and development of cutoffs, would all increase turbidity and deposition within aquatic communities. An increase in

sediment load has the capacity to suffocate fish eggs⁴, reduce foraging success of fish and diminish benthic habitat for invertebrate communities⁵.

As outlined within the SAWSP EIA, diversions for this project have “the potential to contribute cumulatively to adverse effects on water quality under the current regulatory framework for water management in the Red Deer River sub-basin (Goater et al. 2007).” A technical study completed by Alberta Environment and Parks (AEP) to assess water quality for the Red Deer River, revealed that changes in basic parameters such as water temperature, dissolved oxygen and ammonia assimilation, which follow the instream flow needs (IFN) criteria defined in Clipperton et al. 2003, were altered significantly under various use scenarios. Under the full use water scenario, with existing licenses not subject to current Water Conservation Objectives (WCO) of the SSRB Water Management Plan, “serious adverse effects” were recorded for the aquatic environment as the criteria for instream flow needs were not met. The Red Deer River Watershed Alliance’s State of the Watershed Report (2009), found that the overall water quality index “reflects the generally deteriorating water quality along the Red Deer River towards the Saskatchewan border”. AWA finds this particularly concerning as the added pressure of water diversions from the SAWSP will likely decrease instream flows needed for healthy aquatic communities and an adequate water quality index for human use and consumption. Based upon the intensity of current diversions and contaminants inputs into the Red Deer River, AWA believes it would be reckless to increase pressure on the overall health of the watershed with the SAWSP.

In summary, AWA does not support this project as it seems fiscally irresponsible and poses a significant environmental threat to both terrestrial and aquatic communities within the Special Areas. AWA respectfully requests that these concerns be taken into consideration, and that the project be denied.

Sincerely,
ALBERTA WILDERNESS ASSOCIATION

A handwritten signature in black ink, appearing to read "Nissa Petterson", with a long horizontal flourish extending to the right.

Nissa Petterson
Conservation Specialist

Referenced Materials

- ¹ Alberta Environment and Sustainable Resource Development. 2012. Alberta Burrowing Owl Recovery Plan 2012-2017. Alberta Environment and Sustainable Resource Development, Alberta Recovery Plan No. 21, Edmonton, AB. 27 pp.
- ² Chang, C., Sommerfeldt, T. G., Schaalje, G.B. and Palmer, C. J. 1986. Effects of subsoiling on wheat yield and salt distribution of a solonchic soil. Canadian Journal Soil Science. 66: 437-443.
- ³ Seelig, B., and Dekeyser, S. 2006. Water quality and wetland Function in the Northern Prairie Pothole Region. North Dakota State University Extension Service.
- ⁴ Gray, S.M., Chapman, L.J. & Mandrak, N.E. Turbidity reduces hatching success in Threatened Spotted Gar (*Lepisosteus oculatus*). Environ Biol Fish 94, 689–694 (2012). <https://doi.org/10.1007/s10641-012-9999-z>
- ⁵ Shaw, E. A., and Richardson J. S. 2001. Direct and indirect effects of sediment pulse duration on stream invertebrate assemblages and rainbow trout (*Oncorhynchus mykiss*) growth and survival. Canadian Journal Fish Aquatic Science. 58: 2213-2221.

Cc'd:

Honourable Minister Nixon
Minister of Environment and Parks, House Leader
aep.minister@gov.ab.ca