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**Press Release**

Saskatchewan Environmental Society

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For immediate release

**“Conservation group says provincial irrigation plan needs comprehensive assessment”**

The fifty-year old conservation organization, Saskatchewan Environmental Society (SES) says a new Saskatchewan irrigation plan needs an Environmental Assessment to ensure that the project does not negatively impact our most precious resource: water.

On July 2, 2020 the Government of Saskatchewan announced that work would begin immediately on a \$4 billion plan to irrigate some 500,000 acres (200,000 ha) of land from Lake Diefenbaker over a 10-year period, doubling the irrigable land in the province.

“The South Saskatchewan River represents the main reliable freshwater source for much of southern Saskatchewan. Urban centres like Regina, Moose Jaw and Saskatoon are totally dependent on the river for their water supply; and many smaller communities, farmers, industries, and other water users also depend on the river,” says Bob Halliday, water resources engineer and Vice-President of the SES. “Any project of this magnitude must be considered on the basis of environmental consequences, economic impacts and public policy ramifications – that’s why we are calling for a comprehensive environmental impact assessment to be carried out,” says Halliday.

While the Saskatchewan Environmental Society (SES) has economic and public policy concerns with this project, they emphasize the many potential environmental concerns of this Irrigation Plan, such as:

- The effects of the project downstream from Lake Diefenbaker would be driven by a significant reduction in downstream flows. The first and most obvious would be a reduction in hydroelectricity produced at the Coteau Creek generating station and all the hydroelectric facilities to Hudson Bay. It is policy perverse in this era to be reducing renewable power generation and replacing it with gas-fired power generation.
- Reduced summer flows could pose challenges for irrigators who draw their water directly from the South Saskatchewan River downstream of Lake Diefenbaker and for maintaining Pike Lake water levels.



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- Reduced summer flows could affect water quality and riparian ecosystems, and lead to degraded water-based recreational and tourism opportunities in Saskatoon and other downstream communities. Fisheries resources in downstream reservoirs could also be affected.
- Reduced winter flows could aggravate ice cover management upstream of Saskatoon thus resulting in increased risk of damaging ice jams.
- Decreased flows could have very significant effects on the Saskatchewan River delta, which straddles the Saskatchewan-Manitoba border. This delta is the largest inland freshwater delta in North America. It features an enormously productive ecosystem and is an internationally-designated Important Bird Area. The delta is home to aboriginal people who live a traditional life and it features Saskatchewan's oldest community.
- Water receiving areas to the west and north of Lake Diefenbaker and in the upper Qu'Appelle River basin could be subject to wetland loss, changes in riparian habitat, and erosion, plus nutrient and contaminant mobilization. Agricultural land would be lost to canal construction.
- There is also a question of the suitability of the proposed lands for irrigation. Soil profiles and groundwater levels in the area will lead to saline break-outs that contaminate the soil.
- The potential effects of changes in water quantity and quality on communities along the lower Qu'Appelle River to the Manitoba border must be considered.

Before this project proceeds any further, the SES advocates that:

- a comprehensive Environmental Impact Assessment be prepared for this project. Such a statement would also deal with economic and public policy matters.
- federal financial support for any part of this project should be contingent on the conduct of a thorough federal-provincial environment impact assessment.
- the terms of reference for any environmental assessment be established with public consultation.

"The Province's irrigation proposal has many unanswered questions – we should not move ahead irresponsibly on a \$4 billion proposal until we have carefully examined the environmental, economic, and public policy consequences of the project," adds Halliday.

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**Saskatchewan Environmental Society (SES)** is a non-profit, registered charity that is committed to supporting sustainable living and sustainable resource use in Saskatchewan. We work with, and on behalf of, communities, organizations, businesses, and policy makers to encourage informed decision-making that moves us towards sustainability. SES's current action areas include sustainable energy and climate solutions, water protection, resource conservation, biodiversity preservation, and reduction of toxic substances. Our work in Saskatchewan spans Treaties 2, 4, 5, 6, 8, 10, and our office is located in Saskatoon on Treaty 6 territory, the traditional territory of Cree Peoples, and the homeland of the Métis Nation.



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**Biography for Bob Halliday, Vice-President, Saskatchewan Environmental Society, Board of Directors**

Bob Halliday is the president of R. Halliday & Associates and has practised as a consulting engineer in Saskatoon for more than 20 years. He previously worked for Environment Canada and is a former director of Canada's National Hydrology Research Centre. Company projects concern interjurisdictional water management, floodplain management, and effects of climate change on water resources. Projects have also included the preparation of state of the basin reports for the Saskatchewan River basin and for the Beaver River basin in Alberta. Bob has served on several International Joint Commission boards and other Canada-United States water-related entities. He is a former alternate member of the Prairie Provinces Water Board and was a founding member of the Advisory Council for international project WET, a water education initiative. Bob is currently board chair of the Partners FOR the Saskatchewan River Basin, and the President of the Canadian Water Resources Association, Saskatchewan Branch.

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**Read the SES backgrounder on this issue attached to this document (following 3 ¼ pages)**



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## BACKGROUND – SASKATCHEWAN IRRIGATION PLAN

### History

The South Saskatchewan River represents the main reliable freshwater source for much of southern Saskatchewan. Urban centres like Regina, Moose Jaw and Saskatoon are totally dependent on the river for their water supply. Many smaller communities, farmers, industries, and other water users also depend on the river.

In the early 1900s the feasibility of a dam on the South Saskatchewan River that would meet the need for domestic and agricultural water supplies was investigated. In the mid-1940s geological investigations led to the selection of a site. In 1952 a provincial royal commission stated the project benefits did not exceed the cost, but that this may change at some future time. Nonetheless, a new federal government in 1957 led to a federal-provincial agreement in 1958 to develop a project to:

*provide facilities for the irrigation of approximately 500,000 acres [200,000 hectares] of land in Central Saskatchewan and in the Qu'Appelle Valley and to provide other benefits to the area including a source of hydroelectric power, a source of rural and urban water supply, flood control, and recreation facilities.*

The Prairie Farm Rehabilitation Administration (PFRA) was charged with the design and construction of the project at a cost of \$120 million with 80% funding by the federal government. SaskPower paid an additional \$40 million to construct the Coteau Creek Hydroelectric Station. The dam project was completed in 1966 and by 1970 the reservoir, which became Lake Diefenbaker, had filled. When the reservoir is full, 425 cubic metres a second (m<sup>3</sup>/s) of water can be discharged through SaskPower's turbines. Higher flows must use the gated spillway.

In general, Lake Diefenbaker has met its promise. In strict dollar terms the value of the hydroelectricity generated is the most significant benefit of the project; rural, urban, industrial, and other water supply needs are met; flood control benefits exist, particularly for smaller floods; and additional recreational opportunities have been provided. In addition, Lake Diefenbaker has become a significant breeding area for piping plover – a threatened species.

Only the development of irrigated agriculture has not met expectations as about one-fifth (41,000 ha) of the original plan has been developed. Periodically, efforts have been made to spur irrigation development. Governments in the 1980s funded irrigation projects at Luck Lake and Riverhurst drawing water from Lake Diefenbaker. Some \$80 million dollars in today's terms were spent with the expectation that benefits would materialize over 30 years. In 1996-2000 an attempt to spur a potato industry with government investments failed. Reports in 2004, 2008 and 2012 advocated for increased irrigation development from Lake Diefenbaker, but gained little traction. A major shortcoming of some of these reports is that they justified water diversions for irrigation by combining that need with exuberant projections of needs for water for municipal and industrial purposes in the Qu'Appelle basin. In fact, the present infrastructure, if properly maintained, can easily meet reasonably foreseeable water needs, such as for municipal growth and for potash mines, other than those associated with irrigation.

### The Current Proposal

This brings us to the present proposal. This proposal has the simplicity of being entirely focused on irrigation development. The stated intent is that further irrigation development will diversify crop production, attract more value-added processing, and lead to a profitable and sustainable economy.



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On July 2, 2020, the Government of Saskatchewan announced that work would begin immediately on a \$4 billion plan to irrigate some 500,000 acres (200,000 ha) of land from Lake Diefenbaker over a 10-year period, doubling the irrigable land in the province. The project is described in three phases. Phase 1 is based on using the existing west side irrigation canal system to supply water to 33,300 ha at a cost of \$500 million. To do so would require reconstructing and expanding some 40 km of canal built in 1970 and never used. Phase 2 would expand the west side works to irrigate another 105,000 ha at an unspecified cost. Phase 3 would develop new headworks and develop a further 48,500 ha between Lake Diefenbaker and Buffalo Pound Lake in the upper Qu'Appelle basin. The combined cost of Phases 2 and 3 would be in the order of \$3.5 billion. Were it to proceed, this would be the largest single project investment in the history of Saskatchewan.

Any project of this magnitude must be considered on the basis of environmental consequences, economic impacts and public policy ramifications. While the Saskatchewan Environmental Society (SES) has economic and public policy concerns with this project, the emphasis in this backgrounder is on the environment.

To frame potential issues, the quantity of water required to support the proposed project must be considered. Experience with the existing irrigation works using South Saskatchewan River water seem to indicate that a 300 mm-duty – the depth of irrigation water applied to a unit area – may be typical. The annual water requirement for this project then becomes 600,000,000 cubic metres (200,000 ha x 10,000 m<sup>2</sup> x 0.300 m). This is commonly expressed as cubic decametres, that is, 600,000 dam<sup>3</sup>.

This water demand can be compared to both volumes of water and to rates of flow. Assuming that Alberta uses its full entitlement under the Master Agreement on Apportionment, the typical available annual flow of the river becomes 5,500,000 dam<sup>3</sup>. One could also compare the lowest recorded inflow to Lake Diefenbaker, that is, 1,700,000 dam<sup>3</sup> in 1981.

If, for example, irrigation water were withdrawn over a 100-day period the average quantity of the water withdrawn becomes 70 m<sup>3</sup>/s. This flow rate can be compared to the target minimum release from Lake Diefenbaker of 42.5 m<sup>3</sup>/s. At Saskatoon, the desired flow range is 100 to 120 m<sup>3</sup>/s. In general, most water users like the flows to be from 60 to 150 m<sup>3</sup>/s in the summer months.

On several counts, therefore, this project represents a very significant water diversion.

### SES Concerns

In evaluating such a diversion, the effects on donor and receiving waters must be considered.

- The effects of the project downstream from Lake Diefenbaker would be driven by a significant reduction in downstream flows. The first and most obvious would be a reduction in hydroelectricity produced at the Coteau Creek generating station and all the hydroelectric facilities to Hudson Bay. It is policy perverse in this era to be reducing renewable power generation and replacing it with gas-fired power generation.
- Reduced summer flows could pose challenges for irrigators who draw their water directly from the South Saskatchewan River downstream of Lake Diefenbaker and for maintaining Pike Lake water levels.
- Reduced summer flows could affect water quality and riparian ecosystems, and lead to degraded water-based recreational and tourism opportunities in Saskatoon and other downstream communities. Fisheries resources in downstream reservoirs could also be affected.
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- Decreased flows could have very significant effects on the Saskatchewan River delta, which straddles the Saskatchewan-Manitoba border. This delta is the largest inland freshwater delta in North America. It features an enormously productive ecosystem and is an internationally-designated Important Bird Area. The delta is home to aboriginal people who live a traditional life and it features Saskatchewan's oldest community.
- Water receiving areas to the west and north of Lake Diefenbaker and in the upper Qu'Appelle River basin could be subject to wetland loss, changes in riparian habitat, and erosion, plus nutrient and contaminant mobilization. Agricultural land would be lost to canal construction.
- There is also a question of the suitability of the proposed lands for irrigation. Soil profiles and groundwater levels in the area will lead to saline break-outs that contaminate the soil.
- Finally, the potential effects of changes in water quantity and quality on communities along the lower Qu'Appelle River to the Manitoba border must be considered.

### Economic Considerations

Any major project provides both economic benefits and costs. The most significant economic loss of the project is the reduction in the value of hydroelectricity generated in Saskatchewan and Manitoba. Today SaskPower receives about \$500 million in annual revenues from hydropower, some of that generated at Lake Diefenbaker and much of the rest based on the river regulation provided for downstream generating stations. Some fraction of Manitoba Hydro's \$1.5 billion in annual revenues originates with the South Saskatchewan River. Reduced downstream flows will also lead to reductions in water rentals paid to provincial governments by SaskPower and Manitoba Hydro as these are based on hydroelectricity generation. Other economic losses associated with the project such as ecosystem impacts, reduced recreational opportunities, and impacts on dryland farming, are difficult to quantify but must be considered.

Irrigation is often touted as a drought-proofing measure. While it is true that Saskatchewan should have a drought contingency plan, providing irrigation water to a few hundred farmers does nothing to aid the tens of thousands of farmers who do not receive irrigation water. The water required to support this project would be subject to provincial water allocation regulations and would require new water licences. Under current practices, water withdrawals for irrigation would be severely curtailed or not be permitted during times of drought. Irrigation water, therefore, may not be available in the driest years, just when it is most needed. Conversely, there would be little need for irrigation water during unusually wet years when rainfall supplies most of the water needed for crop production.

The assumed benefits of irrigation, increased crop diversity and value-added processing, should be considered in the context of irrigation outcomes related to existing development. For the most part irrigation farmers in Saskatchewan continue to grow dryland crops – cereals, oilseeds, pulses, and forage account for 88% of the crops grown. As a result, there is precious little value-added processing in the province despite significant government efforts to encourage such investment. One should also consider the continuing maintenance costs associated with intensive irrigation development – history shows these costs are usually assumed by governments.

Finally, one must consider the public policy ramifications of this project. If governments choose to debt-finance a \$4 billion investment aimed at developing a more sustainable economy, what other options should be considered? Such options are myriad and are worthy of significant public discussion.

The Saskatchewan Environmental Society advocates that:



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- a comprehensive Environmental Impact Statement be prepared for this project. Such a statement would also deal with economic and public policy matters.
- federal financial support for any part of this project should be contingent on the conduct of a thorough federal-provincial environment impact assessment.
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