



Working for a Sustainable Future...



People are asking:

**DOES SASKATCHEWAN NEED
MORE DAMS?**

1. Are dams the key to economic prosperity?

Promoters of new dams say these projects will create jobs and prosperity. They say that with more water we can irrigate more farmland, and thus produce more cattle, hogs, potatoes, and grain. Expanded and more dependable food production will, they say, attract food processing plants and create jobs.

But Saskatchewan isn't short of irrigation water. The government says there's enough water in Lake Diefenbaker to nearly triple irrigation around that reservoir—adding hundreds-of-thousands of acres. Wayne Clifton, an engineer and advocate of dams, claims there's enough water in Lake Diefenbaker to irrigate 3.7 million acres. That's *11 times* more land than we currently irrigate in the entire province. Over the past 40 years, farmers have added irrigation to 250,000 acres. At that rate, it would take *600 years* to add 3.7 million acres. Calls for new dams are, at best, premature.

Irrigation is expanding slowly, not for lack of water, but because farm financial returns are so bad irrigation doesn't pay, or it barely pays. Even if we build a new dam, we would likely have to wait two generations before there might be enough irrigated acreage to entice a company to build a food processing plant. Gardiner Dam was completed in 1967, creating Lake Diefenbaker, Canada's largest irrigation reservoir. Forty years later, that dam and its reservoir have not yet attracted even one major food processing plant to this province. There is no quick and easy path from dams to jobs.

2. Are dams affordable?

New dams, and the canals, bridges, and other infrastructure they require, cost billions of dollars. In 2002, independent engineering consultants Golder and Associates estimated the cost of the proposed Meridian Dam (on the South Saskatchewan River, near the Alberta-Saskatchewan border) at \$5 billion. Since then, a boom in Alberta has pushed up labour and construction costs by 25% to 40%. A new dam project here might cost \$6 billion to \$7 billion in total.

There is now a proposal to build four dams in Saskatchewan. This plan, promoted by Agrivision Corporation, would cost \$20 billion to \$30 billion (including roads, canals, bridges, etc.). That's nearly *\$100,000 per Saskatchewan family*. Dams' high costs and their long paybacks mean private companies won't finance these projects. New dams will be paid for primarily by citizens through taxes. New dams mean diverting billions of dollars away from schools, roads, healthcare, environmental protection, and other vital investments.

3. Despite the cost, aren't dams a good investment?

Let's think about that \$20 billion to \$30 billion cost for four dams. It's hard to comprehend that much money. With that amount of money, we could do *all* the following:

- build wind turbines to supply one-third of the province's electricity needs (\$3.0 billion);
- give a high-efficiency furnace to every household that needs one, along with a credit of \$5,000 to put toward energy-saving windows or insulation (\$3.0 billion);
- build two new hospitals and a cancer clinic (\$2.5 billion), hire an additional 2,000 nurses (interest on \$3.0 billion would pay salaries), and buy a half-dozen MRI diagnostic machines (<0.2 billion);
- build five meat-packing and food-processing plants (\$0.9 billion);
- build *50,000 homes* for low-income families (\$10.0 billion); *and*
- still have billions left over to fix roads, build rinks, fund the arts, and cut tuitions.

4. Don't we need dams to manage rivers destabilized by climate change?

Dam advocates warn that climate change means less water in Prairie rivers in the future and less-dependable supplies. We need dams, they say, to secure water supplies for communities and agriculture and to stabilize water levels in rivers to protect fish and river-side habitats.

Dams don't create water, however. At best, dams help regulate flows; they can help smooth

the high and low flow periods in summer and winter and give us a very limited ability to sustain river levels during droughts. In theory, dams could help smooth out flows.

But we already have the dams we need to regulate river flows. On the North Saskatchewan River, we have Bighorn and Brazeau Dams in Western Alberta—both built to stabilize flows for the cities of Edmonton, North Battleford, and Prince Albert. On the South Saskatchewan River, we have dams upstream in Alberta and the Gardiner Dam and Diefenbaker Lake that stabilize water supplies for Saskatoon, Regina, Moose Jaw, and other communities.

Most important, new dams may actually *decrease water supply security and stability*. That's because the plan to build dams in Saskatchewan is part of a larger plan to *dramatically increase water use*. The plan to build dams goes along with a plan to withdraw more water from our rivers for irrigation and petroleum recovery. That water won't find its way back into our rivers. Further, reservoirs increase evaporation losses. Water withdrawals and evaporation will mean less water in rivers downstream from new dams.

5. Won't clean hydroelectric power help slow climate change?

The dams under consideration would be costly relative to their electricity output. For example, SaskPower calculates that the Highgate Dam, proposed for the Battlefords-area, might generate 72 megawatts of electricity, about 2% of the province's needs. The Centennial Wind Project near Swift Current produces 150 megawatts at peak output and cost \$255 million. Even with higher costs today, installing wind turbines equal to the electrical generation capacity of a dam like Highgate would cost less than \$200 million. That's a tiny fraction of the cost of a dam. And if climate change means less river flow and more wind, then wind turbines are better investments than dams.

6. What about water diversions and exports?

The plan to build several dams in Saskatchewan also includes the creation of water *diversions*.

Most of Western Canada's water flows north. The south, where population and economic activity is centered, is relatively dry. Reports such as the 1972 "Water Supply for the Saskatchewan-Nelson Basin" identify dozens of possible diversions that could send northern water south: diverting the Peace, Athabasca, and Churchill Rivers to the North Saskatchewan; diverting the North Saskatchewan into the South Saskatchewan; and diverting the South Saskatchewan to give additional volumes to the Qu'Appelle and Souris Rivers.

De-watering northern rivers would have disastrous effects: on native communities and economies that depend partly on hunting, trapping, fishing, and even tourism; on forestry and logging; and on the environment. The environmental effects would be especially damaging because this depletion would come on top of increased variability triggered by climate change. The effects of reduced water availability—in creeks, bogs, forests, and wetlands—would reach far back into northern ecosystems and habitats, far from the rivers' edges, up and down food chains. Here's one example of the complex effects water diversions could have: northern wetlands contain about 150 billion tonnes of carbon in the form of peat. That tonnage is *25 times* the amount of carbon released each year as a result of burning fossil fuels in the *entire world*. If peatlands remain saturated, the carbon remains stable. But if we cut off the water supplies, that carbon could be quickly released. Diverting northern water south would be an economic, cultural, and environmental disaster.

Diversions will also facilitate water exports. The dam-and-divert schemes would move northern water toward the Canada-US border—in some cases the water would be delivered to points within 10 miles of that border. In the 1960s and '70s, individuals and organizations crafted several detailed proposals for "continental" water transfers—diverting northern Canadian waters to the dry southwestern United States. It is reasonable to ask whether the southward diversion of water would stop at the Canada-US border.

7. Is the dam-and-divert agenda linked to water privatization?

Proponents of dams see water as a feedstock resource for agriculture, energy production, and industry. In its reports promoting dams, Agrivision Corporation calls water “the oil of the 21st Century” and, for the most part, they want it treated like oil: privatized, commodified, deregulated, and produced and allocated as a market good on the basis of profit. Agrivision urges the creation of for-profit Water Development Corporations and the buying and selling of water rights.

Saskatchewan citizens want sustainable economies and secure livelihoods. But they understand that water serves *many* roles: in nature, in our economy, as a medium for recreation, and as a determinant of human and ecological health. Most citizens agree that water for basic human needs is a *human right*. Water should be collectively held as a common trust, managed through democratic processes, regulated in the public interest, and stewarded for the good of future generations. Saskatchewan citizens do not want private corporations to own, control, and sell our water.

8. Dams can't be so bad. Everybody's building them; aren't they?

The great dam-building heyday was the 1970s when, worldwide, two or three large dams

(over 15 metres high) were completed *each day*. Over 40,000 large dams have been built since 1950. But the dam-building heyday is over. The 1970s' thinking—build dam after dam and endlessly expand water supply and use—has now been replaced by more progressive and ecologically sensitive policies that focus on water conservation and minimizing intervention in watersheds. Today, the US is decommissioning dams faster than it is building them.

9. Conclusion

“The debate about dams is a debate about the very meaning, purpose, and pathways for achieving development. This suggests that decision-making on water and energy management will align itself with the emerging global commitments to sustainable human development and on the equitable distribution of costs and benefits.”

—World Commission on Dams

Before Saskatchewan seriously considers a new dam, citizens and governments must engage in discussions about how best to allocate public dollars to create secure and prosperous communities and livelihoods. The economic arguments for dams are much weaker than they first appear. And the massive and damaging environmental impacts of dams are only now beginning to be fully understood.

For more information see:

www.wcd.org (World Commission on Dams)

www.environmentalsociety.ca (Saskatchewan Environmental Society)

www.polisproject.org (The Polis Project on Ecological Governance)

www.gordonfn.org/FW-pubs&links.cfm (Walter and Duncan Gordon Foundation)

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