

CASH FLOW

Will the selling of water rights
finally convince Albertans to value
our most precious resource?

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By LYNN MARTEL

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ALBERTA IS CANADA'S DRIEST PROVINCE. That's not obvious, however, as I cruise the corridors of the province's newest mega-mall, CrossIron Mills. Touted as a "celebration of all things Alberta," the Balzac landmark is replete with Hollywood-set-style faux village architecture, including ornamental balconies, while its showcase Bass Pro Shops outlet features waterfalls tumbling over manufactured rock into a 24,000-gallon pond stocked with live trout.

Covering 700 acres with 200 shops and parking for 6,300—half the population of my hometown of Canmore—this mall is a spectacular testimony to how much effort western culture expends on stuff people don't really need, and ultimately to the vast resources we waste.

Beyond its massive size, however, CrossIron Mills has another distinction—the first large-scale cash-for-water-rights transfer in the province of Alberta. In 2008, facing fast-growing demand for a fast-shrinking resource, Alberta made it possible for anyone who holds a water licence—typically municipalities, irrigation districts, industry and rural landowners—to sell their access to water to anyone else, subject to certain conditions. Properly structured water markets, proponents argue, encourage conservation and raise

appreciation of the resource by attaching a higher price to water use. Critics, however, counter that Alberta has taken the first steps toward a market system that distributes water based on one's ability to pay.

Back home in the Rockies, I discuss the larger issues over a beer with my neighbour Bob Sandford, who's also the Canadian partnership chair for the UN Water for Life Decade. "We need a new water ethic in this country," he agrees. "Given that Albertans live on the dry side of the Rockies, we should be doing everything we can to dispel the myth of limitless water abundance. If you live in the West, it should be a condition of residence that you know how valuable water is and how scarcity affects us all."

Water scarcity is a reality Albertans are bound to learn one way or another, and probably sooner rather than later. The question remains, though, whether a water market will make the problem worse—or help us appreciate the value of the resource before we're high and dry.

Proponents argue that water markets encourage conservation. Critics say markets distribute water based on one's ability to pay.

THE SOUTHERN HALF OF ALBERTA, where 88 per cent of the province's 3.8 million people live, has only 13 per cent of its freshwater resources. Alberta's real water supply is inconveniently located in the far north. And in the south, river

flow is highly variable from one season to the next.

Since 1894 rights to water use in Alberta have been granted through a system common in much of the US and Canada's West known as "prior allocation," or "first-in-time, first-in-right"—FITFIR. First rights to water go to the licence holder with the oldest stamp on their licence, known as a senior licence. The amount of water to which all licensees are entitled is decided annually and parcelled out among them. The licence sets the parameters for how much, when, where and for what purpose water can be withdrawn or diverted.

News of the government's "active" pursuit of a water market—and private discussions with Nestlé—caught many Albertans off guard.

Alberta Environment oversees the issuing of water licences to municipalities, corporations, individuals and organizations, including the province's 13 irrigation districts (all of which are in southern Alberta), which in turn allocate water to irrigators based on their acreage. Since 1894 some 20,000 licences to use water have been issued. Three quarters of all the water allocated in Alberta's southern river systems is spoken for by fewer than 20 licensees. The biggest water user in the province is irrigated agriculture: 72 per cent of the water drawn from the South Saskatchewan basin, for example, is for irrigation, while municipal use comprises 14 per cent. Licensees pay a one-time fee at the time of application based on the volume of water involved.

By 1991 the Alberta government realized that with our bulging population, the Water Resources Act, passed in 1931, needed to be replaced. The new Water Act was proclaimed in 1996, just in time for a severe and prolonged drought at the turn of the millennium. The drought raised further concerns about water management in Alberta. As a result, the province launched its "Water for Life" sustainability strategy in 2003, updating it in 2008. The new Water Act, bolstered by the "Water for Life" efforts, protects a withdrawal of up to 1,250 m³ per household annually across Alberta for domestic use as a statutory right trumping all other uses.

While the new Water Act continued the practice of having water rights run with the land, it made Alberta the first province in Canada to introduce the ability for a licensee to transfer all or part of their allocation on a temporary or permanent basis. The water, however, couldn't be a new allocation, only an unused portion of an existing licence. The licence holder had to demonstrate how their actions resulted in a reduced need for water (surplus water that had never been used couldn't be sold). Applicants could only obtain water if they demonstrated a need for it. Water couldn't be transferred out of province.

Terms could be negotiated between seller and buyer, but transfers had to be authorized through a water management plan or by provincial cabinet. Before long, however, pressure to accommodate changes led the Stelmach cabinet to remove

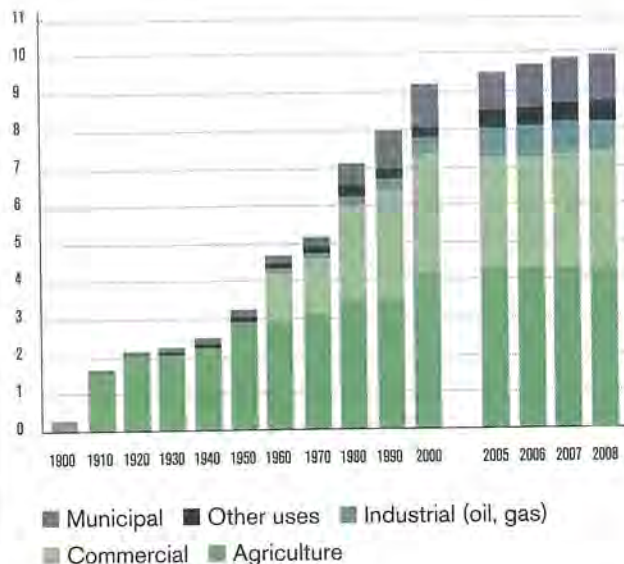
obstacles to transfers in areas of "most need." The government authorized Alberta Environment's water policy director to consider applications within the entire South Saskatchewan River basin.

The market for Albertans to buy, sell or trade water licences was officially opened. For now, however, the South Saskatchewan is the only basin in which water can be transferred; the other basins still have sufficient annual flow to allow new water licences. With the exception of the CrossIron Mills-inspired transfer, the 26 transfers that have taken place thus far have been small-scale. The first two were negotiated between the United Irrigation District (UID) and the villages of Glenwood and Hillspring in 2003, with both villages wanting to use the UID's water on their lawns and gardens. While some saw this as a more efficient allocation of resources, the water-savvy among us will argue that brilliant green lawns are not native to southern Alberta and suck up more water than a swimming pool. Colourful seasonal gardens, however, are going to be the least of anyone's concerns as climate change raises the earth's temperature on a global scale and water shortages become more commonplace.

The likelihood of an increasingly dry Alberta is not on enough people's radars. Canada generally is regarded globally as a "water waster." The Organisation for Economic

HOW ALBERTANS USE WATER

(by year, in billions of m³)



Irrigated agriculture was long the main water user in Alberta. Today some 3.7 million citizens also use huge quantities of water for commercial purposes as well as to quench their thirsts and water their lawns. Rapid development in the oil sands promises to draw even more water from Alberta's rivers.

Co-operation and Development has described Canada's water as "cheaper than dirt." Throughout the province and across the country, municipal water fees often don't even cover the costs of the treatment, distribution and management programs necessary to ensure we can fill our glasses from the kitchen tap.

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WHEN IVANHOE CAMBRIDGE—THE DEVELOPER OF CrossIron Mills—saw its \$495-million project approved in 2006, it still hadn't figured out where its water would come from. Rocky View county applied to the province for a water licence for the Bow River, enough water to service the megamall on an annual basis well into the foreseeable future. But before the application could be processed, the province halted all new allocations from the South Saskatchewan River basin. The basin—which encompasses the Bow, Oldman, Red Deer and South Saskatchewan rivers—would no longer support any new licences, except on the Red Deer River. The water supply for the fastest-growing region of the province was officially overallocated.

After requests to obtain water from the City of Calgary and the Town of Drumheller (on the Red Deer River) were denied, Rocky View turned to the Western Irrigation District (WID). Formed in 1944, the well-organized group of farmers holds licences to withdraw water from the Bow that date back a century to when the federal government granted land to the CPR in exchange for building the cross-country railway. The CPR constructed a sophisticated network of gravity-fed irrigation canals and reservoirs, beginning with a diversion weir across the Bow at Calgary in 1904. After the economy collapsed in 1929, the CPR sought to dump the two irrigation districts that had been developed, resulting in the formation of the Eastern Irrigation District in 1935 and the WID nine years later.

The WID board and members voted in favour of the CrossIron transfer and awaited approval from the province. In exchange for the licence to withdraw up to 2,220,268 m³ of water annually from the Bow, Rocky View county would contribute \$15-million toward a capital project to replace a section of the WID canal with a pipeline. With the infrastructure upgrades promising increased conservation, and the water transfer sufficient to exceed CrossIron's needs, the agreement was touted as a win-win for the WID, Rocky View, the public interest, the environment and regional economic growth.

As CrossIron's 18 km of walls were raised, however, so were questions about how the province, in permitting the deal, might be allowing a privileged few to benefit financially from their long-held water licences. After all, the WID doesn't own the water that flows through its irrigation canals and pipes—the resource is under provincial authority—and yet was able to

enter into negotiations to sell access to it.

Before the agreement was finalized, Westridge Utilities, the largest water provider in the county, submitted an appeal to the Environmental Appeals Board. The deal established water as a commodity, Westridge argued. It therefore created the potential for speculation and could force others requiring additional or new water allocations to participate in a "market" that had no clear pricing structure. Westridge claimed that it was an affected third party, and that the board was obliged to consider the appeal as per the province's Water Act and the South Saskatchewan River basin management plan. The board replied that since there would be no change in Westridge's priority right to water, there would be no direct effect. The commodification concern was ignored, and the appeal was dismissed. Alberta Environment approved the transfer in September 2007.

University of Alberta water economist Vic Adamowicz argues that the WID/Rocky View licence transfer represents an example of Alberta's Water Act working exactly as it was intended to. "This was indeed very expensive water, so some might view that as the system not working," Adamowicz says. "On the other hand, others might say that the high price recognizes water scarcity, and the value of water, so it worked quite well. It did exactly what the Water Act was designed to do: move water from one user to another between two parties willing to make the trade."

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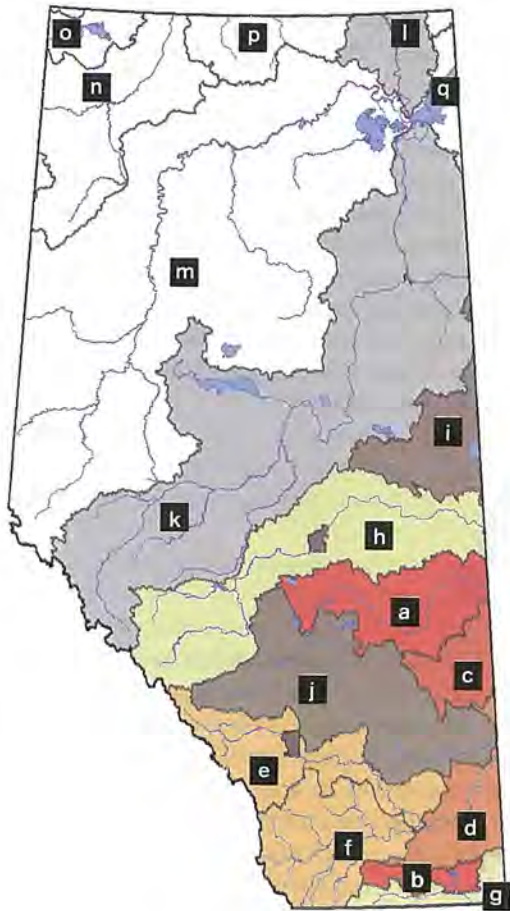
AS I DRIVE SOUTH FROM BALZAC AND SKIRT THE eastern edge of Calgary via 84 St. SE, evidence of the region's relentless development is inescapable. Small wood-frame bungalows and farm sheds populate fertile fields on the east side of the two-lane road, while across the tenuous boundary lies a nearly continuous construction zone of bulldozers, dump trucks and sprouting highway bypasses.

I'm relieved to reach Okotoks, nestled in the bosom of the lush, tree-lined Sheep River valley, just 30 km south of Calgary. Since 1998, when it formally established a population limit of 30,000 based on the available water supply, Okotoks has been seen by many as the embodiment of a water-conscious community. With supply from the Sheep River sufficient for only two more years' growth, the town has instituted a two-day-per-week watering schedule with fines for non-compliance, a conservation rebate and a graduated price for domestic water use. The result, Mayor Bill Robertson proudly boasts, is the lowest per capita residential water use in the province and one of the lowest in the country.

But it wasn't easy getting here. In 2010 the town asked for permission to withdraw three times more water from the Sheep than was allowed by its two water licences. The government

WHICH RIVERS ARE MOST HEAVILY USED?

"Water allocations" refer to the most water that licensees can withdraw in a given year. In Alberta, the total of all allocations in a given river basin often approaches or exceeds the basin's average natural flow. Many licensees don't use their entire allocation, however, and all return at least some water to its source (e.g., in the Battle River basin, at least one large licensee returns almost all of its allocation). Overall, demand is highest in southern Alberta. The province's most taxed river is the South Saskatchewan; no more licences can be given from this basin. This scarcity, along with new laws, has created an incentive for some current licensees to try to sell their allocation.



- **More than 100%** of natural flow is allocated to human use
 - a. Battle River basin
 - b. Pakowski Lake basin
- **80% to 90%** of natural flow is allocated to human use
 - c. Sounding Creek basin
- **60% to 80%** of natural flow is allocated to human use
 - d. South Saskatchewan River basin
- **40% to 60%** of natural flow is allocated to human use
 - e. Bow River basin
 - f. Oldman River basin
- **20% to 40%** of natural flow is allocated to human use
 - g. Milk River basin
 - h. North Saskatchewan River basin
- **10% to 20%** of natural flow is allocated to human use
 - i. Beaver River basin
 - j. Red Deer River basin
- **1% to 5%** of natural flow is allocated to human use
 - k. Athabasca River basin
 - l. Slave River basin
- **Less than 1%** of natural flow is allocated to human use
 - m. Peace River basin
 - n. Hay River basin
 - o. Liard River basin
 - p. Buffalo River basin
 - q. Lake Athabasca basin

said no. Alberta Environment did, however, permit Okotoks to purchase two existing licences, one from an oil and gas company and one from a private landowner, which added an extra 245,340 m³ of water to the town's supply.

At a local watering hole, Okotoks municipal manager Richard Quail tells me about the town's challenges. "As one very small player in a 'market' that hardly exists from a consumer awareness or commodity availability/valuation perspective, it's very difficult to find interested parties prepared to separate water allocation from land ownership—they inherently blend

into property rights for most," Quail says. "The government must take a leadership role in educating water rights holders and promote and reward water conservation and efficiency."

I contact Joe Obad, associate director for Water Matters, a water policy think tank, at his Calgary office to ask why so few Albertans are aware of the province's existing water market. This lack of awareness, he replies, is itself a shortcoming of the system. Another is that the government can only legally cancel an entire water licence; it can't cancel only the unused portion. In some basins, he tells me—particularly in Alberta's south—

more water is already allocated to licences than is flowing. If all licensees used all of their water allocations in a given year (admittedly an unlikely scenario), the river could wither to a trickle.

A promise in 2008 by Environment Minister Rob Renner to review the system has had a chilling effect across the southern half of the province, with few licence transfers since. While this might appear, on the surface, to be a positive development, the situation has prompted applications that push the boundaries in “creative”—and sometimes questionable—ways.

In 2007 the Eastern Irrigation District (EID), the largest consumer on the Bow River, proposed to amend two of its water licences to allow it to provide water for purposes other than irrigation, including commercial, industrial and recreational uses. Historically the EID has only used, on average, 76 per cent of its licensed allocation, and in the past three years just 48 per cent. Concern about the Bow River’s declining health led Alberta Environment to put the EID’s request on hold and squelched similar applications. But now, Alberta Environment is conducting a review—and it’s strictly internal. Such a critical issue, insists Obad, demands to be subject to public scrutiny and comment.

“Irrigation districts are applying for changes of purpose that would allow them to be direct suppliers, side-skirting the checks and balances of the transfer system,” Obad says. “Okotoks applied for ‘net diversion,’ attempting, in effect, to triple the amount of the licences in the transfer, and Calgary and Edmonton have both revised their licences to make use of return flow [water that goes back into the basin from which it was withdrawn]. All of these changes amount to policy direction by ‘bold proposal’ rather than by government—so the delay in revisiting the system has real costs.”

Meanwhile, the Calgary Regional Partnership, which coordinates the municipal planning of 15 communities, is exploring other ways to alleviate potential water shortages. At one of Okotoks’s public awareness symposiums, I joined about 80 concerned residents who listened as Dr. Henry Vaux, professor emeritus of resource economics at the University of California Berkeley, warned against any plans that involve piping water between regions.

“One who would seek to import water from other areas faces not one but two shotgun weddings,” Vaux said. “One marriage is to the price of energy required to deliver that water, and the other wedding is to the population and characteristics of the place of origin. Its concerns become your concerns. I don’t know of any water importation marriages that are happy marriages, and divorce isn’t allowed.”

Instead, a well-designed water market could benefit an entire region, he said. In California, for example, water transferred between regions could generate \$120-million per year, mostly from transfers of agricultural water to urban uses. “Water brokers” would stand to benefit too. One such local outfit, Water Transfer Alberta, has already set up a website offering expertise in wading through the system by matching buyers to sellers.

Last spring, business leaders and water managers in Edmonton and Calgary attended presentations hosted by the Alberta Water Research Institute (AWRI), which funds research in support of “Water for Life” (and whose corporate home was shifted in April from Alberta Ingenuity to Alberta Innovates—Energy and Environment Solutions, the same agency that oversees oil sands research). One presentation featured Nestlé’s South American chair, Peter Brabeck-Letmathe, as keynote. The talks, says AWRI executive director David Hill, focused on the emerging global issue of water’s role in food production, and the importance of water to agribusiness.

“We’re actively dealing with the government of Alberta to think about a water exchange,” Brabeck-Letmathe told media shortly after the talks, suggesting that the province has to address growing competition for water between agribusiness and the oil industry. News of Alberta’s “active” pursuit of such a market caught many Albertans off guard and water was suddenly in headlines across the province. During question period in the legislature, Renner told opposition MLAs to bottle their “conspiracy theories” since “Alberta’s water is not for sale.”



A 2010 REVIEW OF ALBERTA’S WATER ALLOCATION system, prepared for the AWRI, outlines five key conditions for the efficient operation of a water market: many buyers and sellers; transparent price information, accurate metering, public reporting of quantities consumed and diverted and established eligibility requirements that apply to all participants; well-defined property rights; low risks associated with transactions; and no adverse impacts to third parties—including the natural environment.

Water licence holders don’t own the resource; water, under provincial authority, belongs to everyone. Yet they’re able to sell access to it.

“A well-designed market will have a number of advantages, including allocating water to its highest-value uses, finding water for new companies or municipalities and encouraging conservation,” says the U of A’s Adamowicz. “If the market isn’t well designed, problems could arise. There could be environmental impacts, third-party effects and high transaction costs, among others.”

Another review prepared for the AWRI and co-authored by Adamowicz, however, shows that the South Saskatchewan River basin water market is limited in its ability to function efficiently. This is due to the incomplete specification of rights,

the large numbers of senior licences held by a powerful few, a lack of standardized criteria for evaluating trades and the inability to make annual or seasonal transfers.

The holes in Alberta's current water-use framework don't end there. First Nations are treated the same as all Albertans, with no specific references in the legislation. Asking First Nations to apply for licences to withdraw water doesn't recognize their due rights, says Merrell-Ann Phare, executive director and legal counsel for the Centre for Indigenous Environmental Resources. "Even if [it's] accepted that a licence is required by a First Nation seeking to use water, this regulation puts the First Nation licence after all the other licences. This is unfair; if prior allocation thinking were consistently applied, First Nations would be first on the list. First Nations water rights aren't protected by these regulations—in fact, they're denied by them."

By creating a system in which water licences can be traded, and in taking steps to facilitate more trades, Alberta's government has been proactive, says Obad. "When the government closed the South Saskatchewan River basin in 2006, it responded to ecosystem health, recognizing that it couldn't give out water that didn't exist," he says. But the job isn't finished. "From an ecosystem perspective, the greatest challenge is that the government lacks the will to set meaningful flow objectives and claw back or buy back licences.

"A limited water market has not done damage, really," he adds. "[But] there's a continuum between complete government command and control and a truly free market. We sit on that spectrum currently, and with tweaks in the rules [our place] will shift."



AT AN INTERNATIONAL ASSOCIATION OF Hydrological Sciences conference in Canmore last spring, I listened as Rob Renner was queried by University of Nevada professor Doug Boyle. Citing an Alberta Environment presentation the previous evening, Boyle questioned how in the past, in times of drought, southern Alberta licence holders had voluntarily shared their water allocations.

"It sounds like volunteer government," Boyle said. "I can't imagine that happening where I'm from." Oblivious to the general bemusement of the many international delegates who had the previous evening been baffled by the seeming naïveté of such an approach, Renner replied that Alberta's efforts to augment FITFIR hit a snag when they began considering changes on a regional basis. "That drew the ire of a very vocal group who claimed we were not respecting the rights of landowners to manage their own property," Renner said.

Since then, he explained, the government has decided to focus first on changing the Alberta Land Stewardship Act.

When pressed further, Renner elaborated: "We have provisions in place to force [water] sharing if necessary," he said. "But wouldn't you just rather work things out with your neighbours than be told what to do? We have a far better system in place than many places in the world. Whether we put changes in place in one, two or three years is not important."

"We lack an ethical framework that stops us from chipping away at nature until there's nothing left of its life-sustaining functions."

Sandford disagrees. The flaws and shortcomings of Alberta's water market need to be addressed now, he says, before the floodgates open. "The real problem is that we lack a set of principles: laws, policies and guidelines—in essence an ethical framework—that stop us from chipping away at natural systems until there's nothing left of their life-sustaining functions, which the marketplace fails to value adequately, if they're valued at all," Sandford says. "Will developing water markets by accidental and not-so-accidental reforms get us where we want to go? This is not how public policy should be developed. I don't think nearly enough thought has been given to such an important issue."

He argues that every day the provincial government delays the establishment of clearly defined rules, the door remains open for those who would take advantage of weaknesses to fill their own cups. "Our current system entrusts a public wealth into the private hands of self-interested parties who will try hard to skinny out of these conditions with the promise they'll get to all these things after a market is created," he cautions. "If that's allowed to happen, then it's all over. Your children will have to live with the mismanagement of their water."

PREFERRING THE REAL THING TO THE BASS PRO Shops's "bringing the outdoors indoors" approach, I settle into a favourite thinking spot on the bank of the Bow River in Canmore, away from the town's hundreds of rarely inhabited oversized "weekend homes."

We use water to manufacture plastic lawn flamingos, but we *need* water to grow food. We use water to clean our cars—and to manufacture and propel them—but we *need* water to maintain the ecosystem's ability to provide freshwater. Water is not a commodity like wheat or oil, or a resource to be recklessly exploited, or a dumping ground for the by-products of our comfortable lifestyle. Rather than employing technology to "purify" it, we must embrace an ethic of not polluting it in the first place—and not wasting it.

Water is the crucial stuff of life for every living organism. We'd better know *exactly* what we're doing before we start trading it for something as ephemeral as cash. ■

Canmore's Lynn Martel has written for local and national magazines and newspapers and is the author of two outdoors books.