

Water Dispatch

water information and commentary

November 2007

Moving water creates waves

Irrigation districts hold the largest water licenses in Alberta; all of them in southern Alberta where water scarcity is a growing issue. Modern water conservation technologies for on-farm water use and irrigation infrastructure give irrigation districts the potential to reduce current water use and create surplus water to meet new water demands in southern Alberta.

Alberta has a fledgling water market that many decision-makers are still trying to comprehend and construct to meet future water demands and ecosystem sustainability. In the most recent writing of the Water Act, the Alberta Government introduced a mechanism to allocate water back to the river. This mechanism gives the Director the right to allocate 10 percent of any license transfer back to the river. For example, Alberta Environment (AENV) withheld 10 percent of the transfer amount in the Western Irrigation District (WID) / Rocky View license transfer.

“WID transferred 2,000 acre-feet, but Rocky View didn’t get it all. Two hundred acre-feet went back to the river,” says Jim Webber, WID Manager. He adds that the recent WID transfer to the M.D. of Rocky View (Rocky View) may be one of a kind.



Small, growing communities or value-added industries within irrigation districts that require relatively small amounts of water will be far more common.

The question becomes, does it make sense to fragment large licenses that have some flexibility to manage supply and conservation or does it make more sense to allow large license holders to supply water to small users?

Current legislation specifies that irrigation district licenses can only serve irrigators. All other water users within irrigation districts must own a license to withdraw water from a natural source. However, the government placed a moratorium on new water licenses from the Bow and Oldman rivers in 2006. This means that the only water source for new demands is existing licenses.

This summer, The Eastern Irrigation District (EID) applied to AENV to amend its license so that the district could supply water to small users, such as municipalities, through long-term leases instead of a license transfer. That process did not go well.

“AENV received objection letters because (the letter writers) felt that it opened the door to allow irrigation districts to pick and choose who gets water when it should be a provincial



Western Headworks canal as it travels through industrial Calgary Photo: C. Lacombe

concern,” Webber explains. At the core of the objections is that this type of license amendment could reduce government control over water resources and side-step the 10-percent hold back that takes place on a license transfer.

The Minister of Environment suspended the EID application to amend its license Oct. 26 thus stalling discussion of license amendments that allow leasing. The government wants to examine current policy on water license amendments related to the South Saskatchewan River Basin and will not accept applications for water license amendments until it completes that task.

This means that for now, the only way an irrigation district can provide water to other users is to sell them part of its license. Webber says that the WID Board will watch the EID application closely. “If the EID application closes the door on lease possibilities, then our ability to do anything will be very small.”

WID Board implements water quality protection

Irrigators can rest assured that the District protects its water quality as part of the overall service to its customers. A few years ago, increased residential development within the irrigated area brought stormwater contamination to the forefront for the Board and staff. The WID stormwater guidelines should be in place by January 2008 to protect irrigation water quality throughout the district from elevated contamination levels due to stormwater inflows.

The development of stormwater guidelines required extensive water quality monitoring; flow measuring during regular and storm event flows; research into stormwater guidelines and infrastructure requirements that work in other jurisdictions.

The WID stormwater guidelines will apply to development within the WID catchment and will require developers to work with the WID staff and receive approval from the WID Board before any development goes ahead.

Globally, water managers recognize the affect stormwater contamination can make in overall water quality. Many jurisdictions, including Calgary, recently created stormwater guidelines that place a greater importance on slowing flows into creeks, rivers and canals. The most popular mechanism to reduce stormwater contamination is to create storage facilities on the landscape that capture stormwater during runoff events. This provides two important functions for cleaning stormwater before releasing it into the receiving waterway. Immediately, the storage ponds reduce erosion in the receiving waterway by eliminating artificially high flow rates. The ponds also allow time for suspended solids to settle out of the water in the pond rather than increase siltation in the waterway.

There is a key difference between stormwater impacts on the natural waterways and the WID system. A natural waterway starts as small tributaries and grows into a large river. The irrigation system starts as a large canal and reduces to small laterals. This means that additional stormwater inputs can quickly over-fill downstream canals. Also, a natural waterway would have relatively clean water entering the system at the same time as stormwater. An irrigation system has only one intake of clean water at the head of its system. This means no dilution takes place as the stormwater collects further into the system.

The WID stormwater guidelines will address these issues by requiring all future development to catch stormwater and provide treatment ponds to clean the water and slowly release it into the canal system. The guidelines focus on improving water quality and reducing inflow rates. They allow some flexibility where possible or necessary as to how a developer achieves that outcome.

It may be possible in some cases to create regional catchment facilities such as the Sheppard Slough project undertaken by the City of Calgary and Alberta Environment to capture stormwater from Calgary's older systems that currently enter the WID Headworks canal.

All development approval authorities active in the WID catchment will have to adopt these guidelines as part of development approval processes.



Dan Shute joined the WID Board to represent the Chestermere block in March 2007.

Dan Shute represents a different type of board member than past WID boards have known. He owns a quarter section south east of Irricana with irrigation rights and looks forward to the day he can get back to his farming roots on that land.

For now, he works as a commercial real estate associate out of a Calgary office. Shute says he ran for a seat on the WID board because he has an interest in irrigation and wanted to learn more about the district and the board.

"It's been a great experience so far. I've learned a lot and there is still lots to learn. I think it's a fabulous time to be involved with the Board," Shute says.

In turn, he brings almost 20 years experience in various aspects of commercial real estate to a board facing real estate related matters more often than ever.

"I have an entrenched belief in the value of water and its importance to the on-going livelihood of irrigators," he says. He thinks there are other roles the district could and possibly should play in regional water management. He believes there are opportunities the district can pursue as the rural/urban mix changes the landscape. "There are certainly challenges, but there is also a wealth of opportunities in front of the district. It's very interesting and exciting to me."



The WID recognized Lucie Montford for 30 years service to the district at the October Board meeting.

*Congratulations!
Thank you!
Good Job!
Lucie!*

*Alberta Irrigation Projects Association
Conference March 3-4
Investing in Sustainability:
Conservation, Efficiency & Productivity
Lethbridge Lodge Hotel
For more information,
visit www.apia.org
or call 403-328-3063*

Winter 2007 - 08 rehabilitation projects

WID crews will complete two large pipeline projects this fall.

The first project is the Grove pipeline south of Strathmore. It is a 10 km pipeline costing \$2 million shared with the government through the Irrigation Rehabilitation Program (IRP). It will service existing acres and allow for expansion in an efficient area of district because of water conservation achieved through seepage elimination. The second project is the Springvale/Stahlville pipeline north of Rockyford. This project is 100% funded by the government in recognition of the WID need to catch up on rehabilitation. Operations Manager Erwin Braun explains that, "Irrigation Council recognized we were behind other districts on rehabilitation and allocated additional funding to WID. We received an extra \$4 million over the past two years."

The Springvale/Stahlville pipeline will



Grove pipeline going into the ground. WID photo

have 100 psi at the bottom end and serve about 12 irrigators in the area. This pipeline also eliminates seepage and addresses erosion control. The current canal follows a steep grade that causes frequent canal wash out.

"This project saves the district from doing frequent, expensive maintenance," comments Braun.

Partnership addresses Strathmore stormwater

The WID Board and Strathmore Town Council have a joint stormwater fund created by lot levies in Strathmore. The WID administrates this fund and directs expenditures toward projects based on joint decisions by the two parties.

Over the past two years, this fund directed \$900,000 toward two phases of a drainage project that will handle 90% of Strathmore's stormwater. In the past, the water flowed over the landscape uncontrolled. This project directs it to one channel. That channel also supplies water to some district water users, so the project has joint

benefits. The channel starts south of the TransCanada Hwy in Strathmore and runs along the old CPR right-of-way to Eagle Lake. Eagle Lake has a natural drainage system that takes water to the Bow River. "The stormwater always traveled to Eagle Lake as it is the catchment for the Strathmore area. This will reduce silt loads getting to Eagle Lake and provide a cleaner water source.

Eagle Lake is a landlocked lake that is very saline and fresh water will be good for it," says Operations Manager Erwin Braun.

WID Barn moved to new location/purpose

Darryl Haupstein took the large barn on WID property down piece by piece to move it to his property. He plans to use it as his barn.



WID prepares for the future

The movement to install water flow monitoring equipment in Alberta canals has more than the obvious purpose. It is true that the SCADA monitoring equipment increases water supervisor efficiency and responsiveness and greatly increases water conservation.

However, it also provides a growing database that may become an important tool in the future.

Operations Manager Erwin Braun explains "Once we have enough in place, we'll have good records in place to set targets and goals for water efficiency and water conservation in the future." Braun mentions that at some point in the future the WID will be able to show the economic benefit derived from water use in the district.

"We're in the business of creating wealth and conserving water. The more water we conserve the more that's available to create wealth." To date the district has SCADA controls on most of the secondary A canal and can monitor and adjust flows from the base station in the Strathmore office. SCADA now monitors approximately 50% of the district.

"The operators are finding it very useful for tracking flow, canal volumes, water use and making remote delivery adjustments," says Braun.

WID 2007 plans include adding information to the C canal and the new pipelines. Braun says, "It would be good to hear some feedback from water users about whether or not they notice increased efficiency in delivery."



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Small projects – big water savings

In 2007, 20 WID water users took advantage of the cost sharing program offered by the Board and put infrastructure in place that will save about 2,900 acre-feet of water per year.

“We completed 20 projects throughout the district aimed at water efficiency in irrigation systems,” says WID Water Master Brian Sander. The projects ranged from flood to pivot irrigation conversions, operational size dugouts, yard and garden storage and a variety of stock watering systems.

The overall goal of the program is to take steps toward efficient use of the water licensed to WID. On-site storage allows the district to manage canal flows for maximum benefit of all water users in the system.

2007 Projects

8 household
8 stock watering
4 operational

Rather than sending water down a long lateral to serve one user all season long, WID operators can fill a storage facility on demand and reserve the flows the rest of the time.

“A single stream of water that runs for the entire season is equivalent to the water needed to operate two, low pressure pivots for the season,” Sander says. He adds that the requirement for constant flowing water for stock or household use is one of the largest contributors to inefficient water use in the district.

WID has unique role in water management education

As a WID water user, you live in a unique part of Canada receiving national attention in water management circles. Alberta irrigates the most land in Canada and has the largest, most diverse water infrastructure and uses.

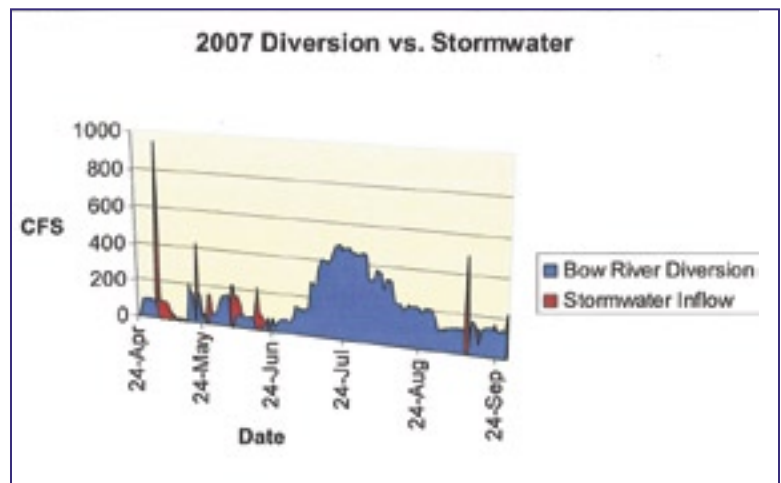
The WID stands out among irrigation districts as the only place in Canada where the water network interacts to serve intense rural and urban water infrastructure needs. It makes the district a case study for academics studying all aspects of water management in Canada. The WID Board understands the significance of the unique district they manage and welcomes visitors who request a tour.

In September, the WID hosted a group of 15 Water Policy Fellows from the Walter & Duncan Gordon Foundation (www.gordonfn.org). The Foundation selects four Water Policy Fellows each year. According to Brenda Lucas, Programme Manager, Fresh Water Resources Protection, “We have had three years of the program and 10 of the 12 (Fellows) were with us on the

tour.” To become a Fellow, the candidate must be near the end of a graduate program and undertake a policy-focused project in partnership with a non-government organization.

Lucas says the tour gave the Fellows a different understanding of irrigation. “Most of us think of irrigation as a rural issue. It was most interesting to see it in that very near urban context and some of the issues around that,” She mentioned that Chestermere was an interesting example of urban/irrigation interface and some of the tensions that potentially arise.

Jim Webber talks to Gordon Foundation Fellows on the Sept. tour. Photo: E. Braun



Graph of WID water diversion for 2007 season. Graphic: B. Sander

“It’s in the best interests for all users to have storage for all stock or yard water in the inevitable event that the lateral ditch or canal shuts down during the season due to little or no demand,” he explains. Stock and yard agreements contain a clause that stipulates the water user provide a two-week storage facility.

The district funded \$25,000 toward these projects and the owners contributed an aggregate of \$14,500. “Overall the process works. We’d like to see more applications for projects.”

She said that a key learning for the tour participants involved understanding the scope of irrigation systems in Alberta and how integrated into the landscape they’ve become. “It was great. We really appreciated the hospitality and knowledge of our tour guides. The on-the-ground tour gave us a real sense of things.”

WID Operations Manager Erwin Braun took the tour with the Fellows to the Bow River weir and out to Langdon Reservoir. Stormwater management was one topic they discussed.

Braun says, “They had lots of questions about the impact of irrigation on the environment and economy. Some of them were very surprised to see what we actually do. At Langdon Reservoir they saw the wildlife habitat function working in concert with water supply.”

