



INFORMATION NEWSLETTER

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EXPANSION

The BRID is proposing a further expansion of the irrigated acreage of the district, subject to approval of the irrigators. Public meetings, which are a requirement of the process, have been scheduled (please see FORM 3A, NOTICE OF PUBLIC MEETING in this newsletter). The board may authorize the holding of a plebiscite **after** the public meetings. The tentative date for the plebiscite is December 4, 2018. **If** the irrigators vote in favor of expansion, we expect to accept applications for the development of dryland parcels and intensification of existing irrigated parcels immediately after the plebiscite.

Anyone considering the purchase or development of dryland parcels for the purpose of irrigation is cautioned not to invest in any irrigation equipment prior to completion of certain conditions:

1. Board approval. If more applications are received than we have available acres, not all parcels will be approved for inclusion in the district. Not all of the district infrastructure can accept additional demand. Parcels served from the Headworks Canal, Main Canal or Lomond Lateral will have no capacity issues. Most of the pipelines and some smaller canals may be at their maximum capacity.
2. Soil testing for irrigability. Upon approval, a parcel will require soil testing to determine if the parcel is irrigable. If there are non-irrigable soils present, they can total no more than 15% of the planned wetted area.
3. Advertising process. Applications are advertised in newspapers of general circulation within the district. Any person that feels that they are negatively affected by the irrigation of the advertised parcel has 30 days from the date the ad appears to submit their concerns to the district. This does not occur frequently, and the concern may not necessarily affect the irrigation of the parcel.

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 704 – 7th Avenue North
 Vauxhall, AB T0K 2K0

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BRID WEBSITE

 Visit our website for more information on the
 BRID at: brid.ca

The entire process may extend over several months, and until complete, there is a risk that the parcel may not be included in the district

The BRID cannot accept any responsibility if an irrigator purchases irrigation equipment for a parcel or parcels that cannot be irrigated.

We do not have irrigation acres available now, and will not in the future, unless the irrigators vote in favor of expansion.

Although requests for the development of dryland parcels and the intensification of existing irrigated parcels are being recorded, the requests will be placed on a list. Having a recorded request does not imply any priority over applications that are received after the plebiscite date. It also does not imply that the request will be approved.



FORM 3A
IRRIGATION DISTRICTS ACT (Section 12)
NOTICE OF PUBLIC MEETING
BOW RIVER IRRIGATION DISTRICT
CHANGE TO THE EXPANSION LIMIT

TAKE NOTICE that a public meeting will be held at:

Milo Community Hall at Milo, Alberta on the 5th day of November, 2018 beginning at 10 o'clock in the a.m., and;

Lomond Drop In Center at Lomond, Alberta on the 5th day of November, 2018 beginning at 2:00 in the p.m., and;

Enchant Community Hall at Enchant, Alberta on the 8th day of November, 2018 beginning at 10 o'clock in the a.m., and;

Vauxhall Community Hall at Vauxhall, Alberta on the 8th day of November, 2018 beginning at 2 o'clock in the p.m.

to discuss a proposed change to the expansion limit of the Bow River Irrigation District from the existing limit of 260,000 acres to 285,000 acres.

Additional information regarding the proposed change is available to the public at the offices of the district.

DATED at Vauxhall, Alberta this 1st day of October, 2018.

Richard J. Phillips, General Manager
 Bow River Irrigation District

Section 4(1) of the Irrigation Plebiscite Regulation states that specific information regarding the proposed expansion must be made available to the public. This information is available to any irrigator or member of the general public through contacting the BRID office or at the public meetings. However, to ensure that the information is distributed as widely as possible, it is included on pages 4 to 6 of this newsletter.

CONSTRUCTION

The 2018/2019 construction projects will consist of the Lateral B pipeline and the Main Canal Drop 5 structure replacement. This is year three of the three year project to replace all of the Lateral B canal system. This portion of the pipeline will extend from Highway #526 near the BRID's Enchant camp to southeast of Prouty Lake.

Drop 5 is located on the Main Canal in the N.W. 28-13-18-W4M, 5 kilometers south of Enchant. This structure is being replaced in conjunction with the MD of Taber's replacement of the bridge immediately upstream.

SALE OR RENTAL OF IRRIGATION ACRES

The *Irrigation Districts Act* allows irrigation acres to be transferred from one parcel to another through permanent sale, and allows acres that are not being used on a parcel to be rented for use on another parcel on an annual basis. Parcels where the acres are to be used must have soil tests completed, which prove that the land is irrigable. On our website, brid.ca, we maintain lists of irrigators who are interested in buying or selling irrigation acres, as well as those who want to rent irrigation acres and those who are willing to rent excess acres to others.

If you want to be added to these lists, please contact us at 403-654-2111 or via email to: RolfS@brid.ca .

WATER RATES PAYMENT DEADLINE

The deadline date to receive a 5% discount on water rates is October 31, 2018. The payment must be received at the BRID on or before this date. Any payments arriving in the mail after October 31st are not eligible for the discount, even if they are postmarked October 31st. The strict October 31st deadline is due to the fact that this is the district's fiscal year-end.

Online payments must be in the BRID's bank account on or before the deadline or it will be considered late. This means initiating the payment with your bank several days before the deadline to ensure it is posted to our account on time.

Please note that the deadline for payment of 2018 water rates is December 31, 2018. Payment (cash, cheque or online only) can be made in the following manner:

- Payment at the office on or before December 31, 2018, during office hours (see holiday hours below).
- Cheques in the mail dated December 31, 2018, or earlier and postmarked no later than December 31.
- Payment posted to our account online on or before December 31, 2018.

Penalties on arrears will be applied January 2, 2019.

If you are sending in a cheque from someone other than the owner named on the invoice, please specify on the cheque: the invoice number, owner name and land location being paid for. This is to ensure that the correct account is credited.

If someone other than the landowner is responsible for paying the water rates, it is the landowner's responsibility to forward the bill on to the responsible party.

Receipts will no longer be mailed for online or mailed payments. Receipts will only be given to people making in-person payments or upon request.

2018 WATER OPERATIONS

Hot dry weather in July and August resulted in above average demand again this year. Our total water diversion out of Little Bow Reservoir was 300,000 acre feet, which is 14% above the average diversion for the past 25 years.

Winter storage volumes in reservoirs will be 325,000 acre feet. Historically, full winter storage in the headworks reservoirs (McGregor, Travers and Little Bow) was 316,000 acre feet, but that increased to 325,000 acre feet with the expansion of the Little Bow Reservoir. Our main internal reservoirs, Badger and Scope, are at normal winter levels.

The total diversion from the Bow River at Carseland this year will be approximately 290,000 acre feet, which is 54% of the total allowed under all existing licences, and slightly below average. An extremely high spring runoff filled the headworks reservoirs, reducing the amount we would otherwise have diverted from the river. The diversion at both Carseland and the Little Bow Reservoir have been decreasing over time, even though the irrigated area has been expanding. It is useful to consider ten year averages when looking at trends impacted by weather, such as diversion. The ten year average diversion at Carseland has decreased from 324,000 acre feet in 2000 to 286,000 acre feet in 2009 and 265,000 acre feet in 2017. The ten year average diversion divided by the total irrigated acres in the district has decreased from 1.69 acre feet/acre in 2000, to 1.40 acre feet/acre in 2009 and 1.21 acre feet/acre in 2017.

HOLIDAY OFFICE HOURS

Closed – Monday, December 24, 2018 through Wednesday, December 26, 2018 for Christmas Holidays

Open - Thursday December 27; Friday, Dec. 28, 2018 and Monday, December 31, 2018

Closed – Tuesday January 1, 2019

Open – Wednesday January 2, 2019.

AQUATIC WEEDS & MAGNACIDE

Aquatic weeds and algae were worse than normal this year and caused significant problems for irrigators and our operations staff. We used more Magnacide than normal to try to control the problem, including two treatments of the Main Canal above Scope Reservoir, which has not been treated previously due to the cost. The Main Canal will be included in our regular scheduled treatments in 2019, which should help prevent the problems. We will also be upgrading our screen cleaners on several pipelines before spring.

BOW RIVER IRRIGATION DISTRICT - 2019 EXPANSION

REQUIRED INFORMATION – Section 4(1) Irrigation Plebiscite Regulation

a) The volume of water allocated to the district under all of the district's existing water licences:

- 150,000 acre feet; 1908-10-27-02;
- 150,000 acre feet; 1913-03-25-01;
- 80,000 acre feet; 1953-06-25-01;
- 68 acre feet; 1975-11-10-005, 1977-08-25-002, 1978-09-19-001;
- 22 acre feet; 1983-05-31-014;
- 47 acre feet; 19783-06-07-020;
- 60 acre feet; 1985-03-21-008;
- 23 acre feet; 1990-10-23-009;
- 69,780 acre feet; 1992-02-05-10;
- 40,000 acre feet; 1992-02-05-011.

The total existing licence allocation is 490,000 acre feet. Included within this total is 2,380 acre feet allocated to purposes other than irrigation. To date, the district has entered into agreements which consume 556 acre feet of this allotment.

b) The volume of water lost from canals and reservoirs:

Water related to the BRID licences is lost through either seepage or evaporation from the district conveyance canal systems, and notably through evaporation from system reservoirs. Seepage from canals is more significant than any evaporation from canals, but both have been significantly reduced over the last number of years through the rehabilitation of these works and the installation of more pipelines. It is estimated that, on average, 12,000 acre feet of water per operating season are lost from the conveyance system due to these consumptive loss processes.

The estimated average water loss through evaporation from the district's internal reservoirs is approximately 7,500 acre feet per year.

c) The return flow volume:

Water related to the BRID diversion licences that is returned to the natural river systems is estimated to be, on average, since and including the 2010 season, equal to 46,000 acre feet per operating season.

d) The volume of water allocated under the district's water licences that is required for uses other than irrigation:

In 2011, the BRID was granted an amendment to its 70,000 acre foot licence (now 69,780 acre feet) which allows the BRID to divert up to 2,380 acre feet of that licence for purposes other than irrigation or domestic needs. The other uses the BRID is allowed to divert water to are industrial, agricultural (feedlots), municipal, commercial and habitat enhancement.

e) The remaining volume of water available for crop use:

The volume of water remaining for crop use is the total licenced volume less losses, return flows and other committed uses.

Total licenced volume	490,000 acre feet
Lost from canals and reservoirs	- 19,750 acre feet
Volume of return flow*	- 46,000 acre feet
Water allocated to other uses	- <u>2,380 acre feet</u>
	421,870 acre feet

**The return flow volume figure shown is the average for the past 14 years with the intentional spill volumes removed.*

This remaining licenced volume would provide 19.5" of water per acre at the present expansion level of 260,000 acres and 17.8" at the proposed expansion level of 285,000 acres.

- f) The gross volume of water required per acre at the farm turnout for crops, including data on:
- i) the average net depth of water required per acre:

On average, over the last 14 irrigation seasons, (excepting 2018) the net depth required per irrigated acre is 10.3”.

- ii) the percentage of each crop type (2018):

Forages: 16.6%
 Cereals: 39.9%
 Specialty: 28.8%
 Oil seeds: 14.3%
 Undesignated: 0.4%

2015 figures were used for the modelling calculations:

Forages: 17.0%
 Cereals: 40.0%
 Specialty: 30.0%
 Oil seeds: 13.0%
 Undesignated: 0.0%

- iii) the level of risk of a water shortage (deficit and frequency):

To assist with determining the level of risk of a water shortage, Alberta Agriculture and Forestry (AAF) and Alberta Environment and Parks (AEP) conducted a model analysis examining 74 years of past weather and river flow records, using the current expansion limit of the district (260,000 acres). Data on the canal infrastructure, on-farm irrigation systems and crop mix in 2015 were entered into the model to predict in which of those 74 years the BRID would have been deficient in supplying the crop demand. The model then inserted nine scenarios at various levels of expansion (25,000, 50,000 and 75,000 acres) into the same set of years to determine if and when deficiencies would have occurred at those expansion levels.

Three scenarios included Western Irrigation District (WID) and Eastern Irrigation District (EID) expansions of 10% and one scenario included a 20% expansion of the WID and EID. One of the 25,000 acre expansion scenarios was modelled with the 2015 internal infrastructure capacities throughout the district to determine if the infrastructure is a limiting factor.

In AAF’s work on deficits and financial risks to irrigators, they determined that, as a guide, a significant risk would be a diversion deficit greater than 100 millimeters occurring more than one in ten years. A deficit under 25 millimeters is of no concern and a deficit between 25 and 100 millimeters is a minor concern.

The baseline scenario (current expansion limit of 260,000 acres) had no irrigation demand deficits over the 74 year range of the modelling. None of the modelled expansion scenarios had significant deficits greater than 100 millimeters.

At the 25,000 acre expansion, there was one year with a deficit between 25 and 100 millimeters, which is considered an acceptable risk. In one scenario, there were 32 years with a deficit between 1 millimeter and 8 millimeters. This was due to including limitations in the BRID internal infrastructure capacity in the modelling, rather than a shortage of water. In other scenarios, small deficits were attributed to the modelled demand exceeding the capacity of the outlet of the Little Bow Reservoir, which is 3,100 cubic feet per second. This is much higher than our actual all time record high diversion at Little Bow Reservoir of 2,468 cubic feet per second or the 2017 daily high diversion of 2,356 cubic feet per second.

At the 50,000 acre expansion, there were three years in 74 with a deficit between 25 and 100 millimeters and 9 years with a deficit under 25 millimeters.

At the 75,000 acre expansion, five years in 74 showed deficits between 25 and 100 millimeters and 24 years showed a deficit under 25 millimeters. One year showed a 98 millimeter deficit. 25 to 100 millimeter deficits were attributed to either a shortage of water supply (reservoir and river) or the design capacity limitation between the headworks reservoirs and the Little Bow Reservoir outlet. The capacity of the Lake McGregor Reservoir to Travers/Little Bow Reservoir is 2,800 cubic feet per second. The model assumes that no water is withdrawn from Lake McGregor Reservoir below an elevation of 871.74 meters, which is less than 8 feet below the full operating level. There is 180,000 acre feet of useable storage remaining at that level, which is 2/3 of the total storage.

- g) the total acres that could be irrigated based on the calculations made under clause (f):
Based on the modelled irrigation demand, the district's current water allocation of 490,000 acre feet is sufficient to irrigate at least an additional **75,000** acres (from the current expansion limit of **260,000** acres to **335,000** acres). The current proposal is to expand by **25,000** acres to **285,000** acres.
- h) the present expansion limit:
Bylaw 2011-06 set the present expansion limit at **260,000** acres.
- i) the number of acres on the current assessment roll:
As of October 3, 2018, the BRID assessment roll held **259,158.75** acres.
- j) the proposed expansion limit:
The BRID Board of Directors are proposing to increase the expansion limit to **285,000** acres.
- k) a description of the areas in the district where additional irrigation will be allowed if the district will not allow additional irrigation in all areas of the district:
All areas of the district will be eligible for expansion with the only restriction being parcels potentially served from a conveyance system on which there are existing capacity restrictions.