



# Provincial Water Availability Engagement

Identified concerns of possible amendments and suggestions to improve water access in Alberta

Alberta Irrigation Districts Association (AIDA)

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## List of suggestions to improve water access in Alberta

1. The existing transfer provisions of the Water Act remain the most effective way to reallocate water in basins closed to new licences and should continue to be recognized as the best alternative.
2. Eliminate conservation holdbacks on licence transfers.
3. Modify the requirement in the Irrigation Districts Act for irrigation districts to hold plebiscites for licence transfers.
4. If it is determined that transfers alone will not provide sufficient allocation for priority uses, consideration should be given to modifying licences where the licensee's operations result in return flow to the source river to provide credit for a significant portion of the return flow if returned in acceptable condition.
5. Unnecessary restrictions on irrigation district licence amendments to provide water for other purposes should be removed.
6. Allow environmental organizations to participate in water licence transfers by obtaining allocations to be left in rivers to enhance instream flow from licensees that are currently using water for other purposes.
7. There should continue to be no provincially mandated volumetric pricing.
8. The GOA should ensure that during droughts reservoir releases do not exceed requirements to meet downstream use and minimum flow requirements, including those mandated by the 1969 Master Agreement on Apportionment.
9. The GOA should investigate further opportunities for agreements with TransAlta to operate their reservoirs to serve multiple purposes.
10. All reservoir owners should consider opportunities to increase winter storage carry-over in existing reservoirs in years with adequate water supplies.
11. Investigate the feasibility of all projects identified in the "Adaptation Roadmap for the SSRB: Assessment of Strategic Water Management Projects to Support Economic Development in the South Saskatchewan River Basin (SSROM Phase 3) Final Report" by WaterSmart Solutions and implement all feasible projects.
12. Improve wastewater treatment to allow more water to remain in storage for other uses.
13. Ensure ongoing government support is available to all water using sectors to improve water efficiencies by modernizing aging infrastructure and introducing new innovative technologies.

## Introduction

The total provincial irrigated area in Alberta represents over 75% of Canada's total irrigated area with most irrigated land located in the southern region. In this region water conveyance infrastructure is primarily owned and operated by Alberta irrigation districts. This infrastructure conveys water across the area to support the irrigated agriculture and livestock sectors but also importantly supplies water for municipal, residential and industrial use, and to support hydropower production, wildlife habitat, wetlands and recreational opportunities.

Representing Alberta's eleven irrigation districts the Alberta Irrigation Districts Association (AIDA) ensures the vitality and sustainability of irrigated agriculture by coordinating joint efforts of irrigation districts and working collaboratively with stakeholders.

The AIDA and its members recognize the current engagement on water availability seeks to explore opportunities and understand barriers to improving water management in Alberta. Our eleven irrigation district members recently discussed these topics and achieved consensus to endorse a list of suggestions that can improve water access in Alberta. The sector endorsed suggestions to strengthen water access along with sector identified concerns associated with possible amendments are detailed in this document.

## Areas of Concern

The sector has identified four topics of concern related to water engagement materials produced by AEPA and now publicly available. Those topics and details on potential risks that could arise with certain amendment changes follow.

### 1. Water Allocation and Transfers

Current irrigation district licence allocations were set by Alberta Environment through the South Saskatchewan Basin Water Allocation Regulation in 1991 through a process which based water needs on the infrastructure and operational states of all districts at that time. Those allocation limits considered future efficiency gains and expansion within districts and as such continue to serve the needs of districts well.

Reducing allocations to irrigation districts and providing that water allocation to other users does not make more water physically available. Continuing to support water licence transfers under the current market-based system does.

Reductions in water licence allocations to irrigation districts will result in increased water availability shortages to irrigators in average water years. Increased shortages in average years will have significant economic and social impacts from farm revenue losses due to decreases in product quantity and quality which in turn will impact the operability of existing agri-food processing facilities and limit the opportunity to attract additional facilities to Alberta in the future.

Previous arbitrary reduction of irrigation district water licence allocations without mutual agreement from both parties resulted in a large financial compensation following years of litigation and negotiation. Future arbitrary reductions could result in costly compensations for the provincial government.

Reductions to district licenced allocations would affect thousands of irrigators and other water users obtaining water from irrigation districts.

## 2. Inter-basin Transfers

There are some cases where low risk and small volume transfers of water between basins without the requiring a Special Act for approval may be appropriate such as to accommodate regional or Indigenous First Nations potable water distribution systems. However, a well-developed framework, which clearly details thresholds for such an approach along with requirements on public information disclosure and feedback considerations as part of the approval process is critical.

The maintenance of a Special Act of the Legislature to approve large bulk transfer of water between basins or transfer of water outside of Canada must be maintained.

## 3. Water Conservation, Efficiency and Productivity

The irrigation sector has been working to achieve gains in CEP for many decades with outstanding success. Water efficiency gains in the irrigation sector are most directly linked to infrastructure rehabilitation and on-farm system changes.

After significant personal investment, Alberta irrigators are currently reaching the maximum amount of land that can be accommodated by the most efficient and operational on-farm irrigation system – low pressure drop tube pivot irrigation. Technology such as sub-surface drip irrigation systems offer increased efficiencies over conventional low pressure pivot systems. However these sub-surface irrigation systems will not support the production of several high value crops that supply the agri-food processing sector. The setting of mandatory goals by government to use technology, such as sub-surface irrigation systems, that limits the production of the current irrigated crop mix would have a drastic impact on on-farm revenue generation and the agri-food sector.

Irrigation districts have completed all of the simplest and most straightforward irrigation infrastructure rehabilitation projects with larger more complex and costly projects remaining. Districts are committed to continuing to rehabilitate conveyance infrastructure in the future but must do so at a fiscally responsible pace. For the irrigation sector, mandatory volumetric pricing schemes will remove funds from rehabilitation activities negatively impacting future efficiency gains.

## 4. Water Measurement and Reporting

Measurement and reporting are occurring within every irrigation district and has been done so for over 40 years and includes tracking such information as gross diversion, return flow, and use

by irrigators and other users. Every diversion from every river for all irrigation districts except Ross Creek Irrigation District is reported continuously in real time on the Alberta River Basins app and website. All information is regularly provided to Alberta Agriculture and Irrigation, reported annually to irrigators and the public, and annually or monthly to Alberta Environment and Protected Areas depending on reporting conditions in the licence. Most districts can make water management data available to EPA at a frequency comparable to that provided to AGI.

Efficient water management in Alberta's irrigation district conveyance systems, which are open gravity systems, is focussed on accurate short-term water forecasting, not accurate water measurement. Districts are most concerned with predicting the water supply required to supply all users with water when needed one or two days in advance. This is especially important as in many cases water must travel large distances from the point of diversion to the farmgate. In order to predict the water supply needed all districts require irrigators to pre-order their irrigation water and provide advance notice of irrigation shutdown. This allows optimization of water supply with demand to ensure appropriate irrigation district diversion rates in addition to accurate reporting of on-farm irrigation use.

Adding metering devices at the farm gate will not assist in predicting irrigation demand and diversion rates. Rather it will most likely cause irrigators to turn their water supply on and off at will, reducing water use efficiency. Increased diversion rates will be expected in such a system to ensure all users are never shorted of water being delivered through the irrigation conveyance system. It should also be noted that the raw water conveyed through the irrigation conveyance system reduces the reliability of water metering devices at the farm-gate.

## Suggestions to enhance Alberta water management

Access to water requires both a legal right to use water and a physical supply of actual water in usable condition. Neither one is sufficient by itself. Alberta's irrigation districts believe there are several ways to improve access to water within three categories:

1. Policy and legislation
2. Water Management
3. Infrastructure

A list of thirteen suggestions was compiled through a collaborative process with consensus by all 11 irrigation districts. All suggestions with explanations are detailed below.

### Policy and legislation

**Suggestion 1: The existing transfer provisions of the Water Act remain the most effective way to reallocate water in basins closed to new licences and should continue to be recognized as the best alternative.**

**Suggestion 2: Eliminate conservation holdbacks on licence transfers.**

**Suggestion 3: Modify the requirement in the Irrigation Districts Act for irrigation districts to hold plebiscites for licence transfers.**

In most of Alberta's major river basins new water licences can still be obtained from the province by applying for a licence for a purpose permitted under the Water Act. However, much of the SSRB is closed to new water licence applications, although transfers of allocations held under licences can be applied for. Within the materials released as part of the Water Engagement, Alberta Environment and Protected Areas (AEPA) is implying that unused allocation under licences where only a portion of the allocation is used should be able to be clawed back from the licence to be reallocated to others needing water. This implication has underlying issues including:

1. The action would not create any actual water to match the previously unused allocation which will now be used and exacerbating the fundamental problem of inadequate water supplies in some years. This increased water use will further decrease instream flows, which can already be below desirable levels.
2. The action will create winners and losers, leading to costly litigation and negative publicity.

The existing transfer provisions of the Water Act remain the most logical way to reallocate water in basins closed to new licences. With transfers, the transferee receiving the new allocation will typically provide financial compensation to the transferor providing the allocation, thereby providing capital for the transferor to implement water conservation measures that can in essence create water. This avoids both problems associated with the proposal to downsize licences. However, improvements in the transfer process could include:

1. Eliminating conservation holdbacks on transfers, which are often 10% of the transferred volume to reduce the cost to the transferee or allow them to receive more water for the same cost.
2. Modify the requirement in the Irrigation Districts Act for irrigation districts to hold plebiscites for all transfers unless a Ministerial exemption is granted. A threshold should be set as a percentage of the district's total licensed allocation, below which a plebiscite would not be required.

**Suggestion 4: If it is determined that transfers alone will not provide sufficient allocation for priority uses, consideration should be given to modifying licences where the licensee's operations result in return flow to the source river to provide credit for a significant portion of the return flow if returned in acceptable condition.**

If the Government of Alberta is determined that transfers alone will not provide sufficient allocation for priority uses, consideration should be given to modifying licences where the licensee's operations result in return flow to the source river to provide credit for a significant portion of the return flow if it is returned in acceptable condition. We suggest that this should apply to municipal and industrial users, but not to irrigation districts. This is inferior to licence

transfers since it would not lead to water conservation to offset the effective increase in allocation, but it would eliminate the conflicts that would occur with partial licence claw backs.

**Suggestion 5: Unnecessary restrictions on irrigation district licence amendments to provide water for other purposes should be removed.**

Within irrigation district service areas, irrigation infrastructure is often the only practical way for many potential non-irrigation water users to access water. Districts convey water through their infrastructure to many users with their own licences, and in addition many districts have received amendments to their water licences to allow them to provide water within their areas for other uses such as municipal, commercial, industrial, and agricultural use. However, when amending licences for other uses, districts are limited to amending the first 1000-acre feet plus 2% of the remainder of any licence, and in some cases are required to estimate precise quantities for each additional use. This is unnecessarily restrictive and can limit opportunities for economic development within the areas served by irrigation districts. These restrictions on irrigation district licence amendments to provide water for other purposes should be removed.

**Suggestion 6: Allow environmental organizations to participate in water licence transfers by obtaining allocations to be left in rivers to enhance instream flow from licensees that are currently using water for other purposes.**

One of the perceived problems with water in Alberta is that some individuals believe that too much water has been allocated for use in some rivers to the detriment of the aquatic ecosystem. There is no simple resolution to this issue since the views of individuals advocating for pristine conditions will always conflict with the views of those wishing to use water for human use. One way to address this issue would be to allow environmental organizations to participate in the existing water licence transfer system to obtain allocations from licensees that are currently using water for other purposes to be left in rivers to protect instream flow. This could reduce pressure on the Government of Alberta to find a balance between instream flow and human use.

**Suggestion 7: To ensure water-using sectors continue to have adequate capital to invest in infrastructure modernization that supports water conservation there should continue to be no provincially mandated volumetric pricing.**

Other jurisdictions within Canada and around the world use volumetric pricing to reduce water use. Within the materials released as part of the Water Engagement, Alberta Environment and Protected Areas is implying volumetric pricing should be considered in Alberta. The reality is this tool is already effectively in widespread use in Alberta and consideration of its use as a water management tool in Alberta, ignores the complexities of the topic.

Currently many Alberta municipalities use volumetric pricing, where it may be an effective deterrent to excessive water use, since much municipal use, such as lawn watering or even the length of showers, is discretionary.

Irrigation is the single largest water use in Alberta, and although there is little volumetric pricing, irrigators pay the full energy cost for every drop of water they use to irrigate crops. These costs are high and provide a significant disincentive to apply more water than crops require, effectively providing an excellent surrogate for volumetric pricing. Furthermore, unlike lawn grass, most crops require a specific amount of water for optimum yields, and excessive water application reduces yields and profitability. Industrial users pumping directly from rivers also pay the associated energy costs to do so and are therefore already motivated to use water responsibly.

Any provincial volumetric pricing scheme applied to bulk volumes of water is simply a tax on water. Implementing such a tax would be counterproductive, increasing operational costs for all water users and reducing the capital available to implement water conservation measures. Our sector suggests there be no provincially mandated volumetric pricing on water.

### Water Management

**Suggestion 8: The GOA should ensure that during droughts reservoir releases do not exceed requirements to meet downstream use and minimum flow requirements, including those mandated by the 1969 Master Agreement on Apportionment.**

**Suggestion 9: The GOA should investigate further opportunities for agreements with TransAlta to operate their reservoirs to serve multiple purposes.**

**Suggestion 10: All reservoir owners should consider opportunities to increase winter storage carry-over in existing reservoirs in years with adequate water supplies.**

Water management is a shared responsibility primarily involving water licence holders and including the GOA. One of the keys to water management in an arid region with significant demands for water is the optimal use of reservoirs, especially during droughts. The most significant reservoirs in the province are owned by the GOA, irrigation districts, and TransAlta. Irrigation districts only own off-stream reservoirs, TransAlta only owns on-stream reservoirs, and the GOA owns both. Reservoirs are generally well managed, but improvements are possible to ensure better optimization of reservoir releases, managing additional on-stream reservoirs to support multiple uses and increasing winter storage carry over. Discussions with reservoir owners should take place to work towards implementation of these suggestions.

### Infrastructure

**Suggestion 11: Investigate the feasibility of all projects identified in the [“Adaptation Roadmap for the SSRB: Assessment of Strategic Water Management Projects to Support Economic Development in the South Saskatchewan River Basin \(SSROM Phase 3\) Final Report”](#) by WaterSmart Solutions and implement all feasible projects.**

Combined with effective legislation and a deeply ingrained culture of cooperation, Alberta’s existing water management infrastructure allows us to manage a limited and variable water supply effectively. However, further infrastructure upgrades are required to enable us to improve water management. The recently published “Adaptation Roadmap for the SSRB: Assessment of



Strategic Water Management Projects to Support Economic Development in the South Saskatchewan River Basin (SSROM Phase 3) Final Report” by WaterSmart Solutions outlines several important infrastructure projects that will enable us to better manage water within the SSRB in coming decades. The GOA and others are already working on investigation or implementation of some of these projects, and ultimately all should be implemented if feasible.

**Suggestion 12: Improve wastewater treatment to allow more water to remain in storage for other uses.**

In addition to projects detailed within the Adaptation Roadmap for the SSRB Final Report, improving the quality of wastewater effluent being discharged to our rivers can have direct benefits to water quantity as well as water quality. During periods of low water supply, too much water must be released from reservoirs to maintain acceptable dilution of effluent in some rivers. Improving and upgrading wastewater treatment facilities to current technology could allow more water to remain in storage for other uses.

**Suggestion 13: Ensure ongoing government support is available to all water using sectors to improve water efficiencies by modernizing aging infrastructure and introducing new innovative technologies.**

In the past the provincial government has strengthened overall water conservation, productivity and efficiency by providing various levels and types of support to Alberta’s water using sectors. This includes, providing grant funding, through Alberta Innovates and Results Driven Agriculture Research program, to support research and development of innovative water and irrigation related technologies, and direct funding through various programs to assist sectors in modernizing aging water management infrastructure.

The outcomes of this type of support increase the availability of physical water to support future economic growth.

## Conclusion

Questions related to the information presented in this document can be directed to Margo Jarvis Redelback, AIDA Executive Director at [manager@albertairrigation.ca](mailto:manager@albertairrigation.ca).