

OBWB Position Paper: Irrigation Efficiency in the Okanagan

Background

The Okanagan has ‘One Water’ which serves our communities and our surrounding ecosystems. This reality recognizes that sufficient water must be made available to support ecosystem needs, agriculture practices, and many human needs. The interdependency of these activities demands explicit attention when managing water supply and demand.

The semi-arid environment of the Okanagan Basin is susceptible to naturally occurring fluctuations in water supply, especially prolonged periods of hydrologic drought, which are projected to become more severe under climate change. A heavy reliance on snow melt runoff to sustain stream flow and aquifer recharge in the spring and to fill upland and valley bottom reservoirs and lakes. Current and projected trends suggest future reduced snow packs, an earlier spring freshet, hotter and drier summers, and a longer irrigation season. Seasonal and annual weather variability, as well as long-term trends in climate change and the capacity to store snow melt runoff, are what shape the Okanagan Basin’s water quantity, quality and availability.

Upwards of 86% of the consumptive water use in the Okanagan is applied to agricultural fields (55%) and landscaped areas (31%)¹. This suggests that strategies to enhance irrigation efficiencies should be an essential component of an overall approach to addressing future water challenges in the region. However, water savings from current conservation strategies have to be managed according to future requirements which take into account an increasingly unreliable water supply, the need for food self-reliance and population growth.

Water conservation through improved irrigation practices are likely to be most effectively addressed at the level of local governments, irrigation districts or water purveyors, the individual farm, and the commercial or residential property owner. ***Efficient irrigation can be described as meeting plant water needs to sustain optimal growth and production at the smallest capital and operating costs.*** Water conservation through efficient irrigation is achieved by correctly designing, operating, and maintaining a water distribution system to match the climate, soil, and crop management limitations².

By promoting and supporting efficient irrigation design, operation and maintenance, the OBWB acknowledges that everyone in the Okanagan Basin, urban or rural, agricultural, recreational or domestic, has an obligation to conserve water. Success in these areas will support the objective of sustainable water resources management for the entire region.

1. Okanagan Water Supply and Demand Project – Phase 2,
<http://www.obwb.ca/wsd/key-findings/water-use>

2. Irrigation Factsheet, Irrigation Parameters for Efficient System Operation. BC Ministry of Agriculture and Food, 1988,
<http://www.irrigationbc.com/Resources/Irrigation-Links>

OBWB Position Statement:

The OBWB believes that improving water-use efficiency will have the following long-term benefits for the Okanagan region:

- Maintain healthy stream flows for environmental needs.
- Maintain (and improve) the quality of life of current and future residents
- Support the economy (especially the agriculture and tourism sectors)
- Lower production costs (combined water and energy expenditures)
- Increase resilience to water scarcity
- Protect groundwater from over-exploitation
- Reduce runoff and water quality problems
- Ensure long-term security of water for the agriculture sector
- Maximize water availability for human activities

Within this context, the OBWB,

1. Supports and promotes water use efficiency and efficient irrigation within agriculture and landscaped systems (commercial, municipal, industrial, residential); and
2. Encourages the widespread planting of indigenous plants and drought tolerant species that are compatible with the semi-arid Okanagan climate and the adoption of xeriscaping principles.

Action Options:

A range of activities, practices, and information sources can help to conserve water and enable more efficient irrigation strategies. While the impact of improving irrigation efficiency will likely be most pronounced for the residential, municipal, and agricultural sectors, the emphasis for improving efficiency in all sectors (including commercial and industrial) should be the same. Obviously, the option of not irrigating by selecting crops or plants that are drought tolerant varieties would be the most effective, but for much of agriculture and in some landscape situations this is not viable. When the only option is to irrigate, a three-step approach is recommended:

1. Select the most efficient irrigation system (technology) for the crop or area;
2. Ensure that the system is designed to achieve acceptable uniformity and performance standards;
3. Schedule the system according to soil, crop and climatic requirements.

The following list of practical activities, if implemented, will provide strategic advantages for the region's environment, economy and society. This list is not intended to be exhaustive but provides specific examples where adoption will contribute to alleviating current and future conflict for water resources. In many instances, a range of partnerships with local governments and stakeholder organizations will enhance opportunities for success.

Action Options: Universal

1. Adopt and implement metering and monitoring systems.
2. Develop landscape standards and irrigation practice standards that promote water conservation for all sectors.
3. Endorse and promote the Irrigation Industry Association of British Columbia's (IIABC) Certification Programs.
4. Encourage and promote Certified Irrigation Plans for landscape and agriculture systems using Certified Designers as designated by the IIABC.
5. Expand the climate and hydrometric network for the Okanagan Basin to help improve the management of irrigation systems. Weather stations should be connected to www.farmwest.com.
6. Support licensing and monitoring of groundwater and surface water use through a modernized BC Water Sustainability Act.
7. Encourage widespread reporting of water-use statistics through the BC Water Use Reporting Centre.

Action Options: Residential, Municipal, Industrial, Commercial and Recreational Landscape

8. Apply rainwater management strategies such as the guidelines in the OBWB homeowner's guide: ***Slow it. Sink it. Spread it.***
9. Promote the use of the Water Balance Model to assess rainwater management for urban developments in the Okanagan.
10. Promote the use of the irrigation scheduling calculator found at www.irrigationbc.com
11. Promote top soil bylaws for all local jurisdictions in the Okanagan, especially for new development projects.
12. Encourage (and provide incentives, when appropriate) to convert landscaping from water-hungry to drought-tolerant varieties.
13. Support initiatives aimed at outreach, public education, and demonstration of new technologies and methodologies for improved outdoor water-use efficiency.

Action Options: Agriculture

14. Encourage the use of the Agriculture Water Demand Model to inform policy development regarding improved irrigation systems and water-use efficiency.
15. Work with the province on the development of an agriculture water reserve.
16. Work with the province to implement a groundwater management and licencing system for agriculture and water purveyors.

17. Expand the BC Water Use Reporting Centre to enable farmers to report their water use for both groundwater and surface water sources.
18. Support the development and use of the online Okanagan Irrigation Management System (OKIM) for water purveyors and farmers in the Okanagan. (This tool requires the Farmwest climate network and water demand model to be functional.)