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# Columbia Basin Water Smart

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## FORWARD TO A COLLEAGUE



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### Welcome to the second edition of the Water Smart Newsletter!

This edition contains the results of the Phase 1 Water Smart Action Plans, a conference announcement and updates on news reported in the last newsletter.

If you have any questions about the content of this newsletter, or would like more details or information, please do not hesitate to contact [Meredith Hamstead](#), Water Smart Coordinator.

## First 10 Water Smart Action Plans Completed

The first 10 communities participating in CBT's Water Smart program have completed their Water Smart Action Plans and the results are inspiring.

[Learn about the strategies these communities will implement](#) as they work toward a collective Basin-wide target of conserving up to 3.9 billion litres of water each year. And with another 11 communities getting underway in fall 2010, this figure is expected to rise significantly.

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## Water Smart Implementation Conference, March 2011

**Save the Date! March 8-9, 2011 in Nelson, BC**

Communities have indicated that local government staff and elected officials are seeking tangible learning opportunities on a wide range of water conservation topics. This conference will be relevant to both staff and elected officials and will deliver education as well as take home knowledge directly relevant to the implementation of each community's Water Smart Action Plan.\*

Stay tuned for more information, but in the mean time, save the date – you will not want to miss this excellent opportunity to turn your plan into action!

\*The conference will also be directly relevant to those local governments who are not formally participating in the Water Smart Initiative.

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## Water Smart Network Update: Collaborative Leak Detection RFP

In the last newsletter, communities were notified about a collaborative, multi-community RFP for acoustic leak detection services. The results of this innovative and successful process championed by Columbia Basin Water Smart communities [are available online](#).



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## Learning Webinars Available Online

Water Smart communities asked for opportunities to learn from leaders in the water conservation field.

In October, CBT hosted two webinars, both of which are now available online.

- [Grant Writing for Water Conservation](#)
- [Conservation Oriented Water Pricing](#)

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## Welcome New Members

**Phase 2 CBT Water Smart Team Members:** We would like to take a moment to welcome the new and returning members of our CBT Water Smart Team. [Urban Systems Ltd.](#) and [thinkBright Environmental Innovations](#) are back once more to support development of the Water Smart Action Plans for the 11 Phase 2 Water Smart communities. And [Neal Klassen](#) of H2Okanagan joins the team to provide public communications and outreach support for Water Smart. We are fortunate to have you on the CBT Water Smart Team!

**A Growing Water Smart Community:** We would also like to welcome both the [City of Kimberley](#) and the [City of Rossland](#) which recently signed the Water Smart Charter. We look forward to working with them during Phase 2.

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## Conservation Corner: Go With the Evidence

By Neal Klassen

The great fictional detective, Sherlock Holmes, once said something to this effect: "Avoid developing your theory before you collect the evidence. If you develop your theory first, you may interpret the evidence to support your flawed assumptions."



I thought about this quote after talking to the person responsible for water conservation in a small town. The town was thinking about offering rebates on water-efficient washing machines. I asked a few questions and it quickly became apparent that money spent on rebates in this situation would have little to no effect on peak demand, which was caused by residential irrigation and agriculture. The theory was that water-efficient washing machines would reduce peak water use significantly, but the "evidence" (i.e.: the data) [suggested otherwise...](#)

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*Columbia Basin Trust supports efforts by the people of the Basin to create a legacy of social, economic and environmental well-being and to achieve greater self-sufficiency for present and future generations.*

For more information on the Columbia Basin Water Smart Initiative, please contact:  
**Meredith Hamstead, Water Smart Coordinator 250.688.1150 [watersmart@cbt.org](mailto:watersmart@cbt.org)**

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## 10 Water Smart Action Plans are Complete

Thursday, December 16, 2010

The first 10 communities participating in CBT's Water Smart program have completed their Water Smart Action Plans and the results are inspiring.

**Beginning in March 2010**, the Water Smart Team worked collaboratively with each Water Smart community to develop a clear understanding of their local water conservation culture, their technical water system and consumption data, and the current and future state of their water system infrastructure. Customized Water Smart Action Plans (Action Plans) were drafted, thoroughly reviewed, and revised by each community to produce a final 'living document'. The finalized Action Plans have been developed based on the best available data provided by the communities. As the data changes or is refined through enhanced monitoring and analysis or the implementation of improved data gathering technologies, the Action Plan objectives may also need to be changed or refined accordingly.

### Water Consumption Data

The Phase 1 Water Smart communities range in size from 600 residents to over 19,000. Among them, each community consumes anywhere from 115-5,000 megalitres (ML) of water annually. One megalitre is equal to one million litres of water.

To put this into context, an Olympic sized swimming pool uses about 2.5 ML of water. The combined gross annual water consumption for the Phase 1 Water Smart communities is 19,566.43 ML, or enough to fill approximately 7,857 Olympic swimming pools.

Water consumption is most commonly expressed in "litres per person per day (lppd)." For example, the BC residential average is 426 lppd and the Canadian residential average is 329 lppd. Calculating reliable "lppd" figures for each community requires comprehensive consumption data at an individual residence level. Few Basin communities are able to gather this level of fine data. Given this, the Columbia Basin Water Smart Initiative cannot reliably report on "lppd" figures, and instead will report on gross water consumption data, typically reported in megalitres (ML).

This approach will enable consistency in reporting across Water Smart's 21 participating communities and will be the basis for measuring progress toward the Water Smart target of reducing gross water consumption among participating Water Smart communities by 20 per cent by 2015.

### Conservation Targets

To date, Phase 1 Water Smart communities have set conservation targets ranging from seven to 50 per cent of gross annual community consumption by 2015. Collectively, these communities will contribute to CBT's target of a 20 per cent reduction in gross annual community consumption by 2015.

Achievement of this 20 per cent target will be equal to annual savings of 3,911 ML of water (that's 3.9+ billion litres or 1,565 Olympic swimming pools annually).

### Achieving the Conservation Target

Despite unique local contexts, there is substantial similarity in the range of objectives and actions that have been set by the communities. *For more information on the top five areas of action listed below, please click on the images at the top of the article.*

- **Leak detection and repair;**
- **Reduce peak outdoor irrigation demands;**
- **A wide range of approaches to water metering;**
- **Improving municipal irrigation practices; and**
- **Development of water rate and/or revenue sufficiency studies.**

Other objectives set by more than one community include:

**Improvements to water data gathering and analysis:** Many communities are not gathering available meter data, do not have reliable data sets or have discovered discrepancies or inconsistencies in their data sets.

**Face-to-face public INDOOR water education:** Based on the results of their water balance models, only a few communities have identified reductions to INDOOR water consumption as a high priority area of action. For most communities, peak outdoor water consumption represents a more significant proportion of total water consumption. Once outdoor water demand begins to decline, indoor water consumption could represent a

greater proportion of total water demand. At that time a community could more effectively invest resources in reductions to indoor water demand.

**Face-to-face indoor and outdoor education for commercial accommodation**

**providers:** Two Water Smart communities have notably high percentages of commercial accommodation connections to their water systems. For these communities recommendations for action have been made to reduce both indoor and outdoor water demands.

**Improved stream flow monitoring to better understand source resiliency:** Two communities have limited reliable data regarding the future resiliency of their surface water supply. These communities have set objectives to improve source flow monitoring and data analysis. Some Action Plans also contain basic recommendations regarding the potential scope of climate change adaptation implications for their surface water sources.

**Next Steps**

Water Smart communities have indicated that they are seeking CBT's guidance in achieving targets that have been set in their Water Smart Action Plans. In response, CBT recently hosted two learning webinars on the subjects of Grant Writing Skills and Opportunities, and Conservation Oriented Water Pricing.

Background information and presentations from both of these webinars is [now available online](#).

CBT is also planning to host a [Water Smart Implementation Workshop on March 8-9, 2011, in Nelson](#). This workshop will provide face to face learning opportunities that will support Water Smart communities to achieve success in the implementation of their Water Smart Action Plans.

This fall, 11 Phase 2 communities began the process of developing their Water Smart Action Plans using a similar approach as that applied in Phase 1. These communities include: Creston, Elkford, Golden, Kaslo, Kimberley, Nakusp, Nelson, Radium Hot Springs, Rossland, Salmo and Slocan.

The Water Smart Team welcomes feedback from all participating Water Smart communities about the support that would be most useful in making progress toward reaching identified local water conservation targets. Contact [Meredith Hamstead](#), with your comments and suggestions.



## Water Smart Network Update: Collaborative Leak Detection RFP

Thursday, December 16, 2010

Due to wide geographic distribution of many mid- and small-sized communities across the Basin, communities have historically faced high costs for leak detection services. In August 2010, six communities applied a collaborative approach to procure leak detection services. This innovative approach allowed communities to work together to secure a more competitive bid than if each community tendered a Request for Proposals (RFP) separately.



[Click to Enlarge](#)

Six communities successfully piloted an innovative, collaborative approach to procure leak detection services.

Supported by CBT, the communities used internal expertise and outside advice to **develop an RFP** that met all communities' needs.

It was determined that the success of the RFP process would be measured primarily by securing a contractor for a better price than any single community could have secured. Formal criteria for assessing the eligible proposals was jointly developed and used to evaluate all proposals. The successful contractor was Veritec Consulting Ltd.

At the outset, it was estimated that the baseline price for single-community leak detection services in the region was \$0.45-\$0.50 per lineal meter of pipe. Veritec Consulting Ltd., was able to offer a price of \$0.13 per lineal meter - a savings of 70 per cent over the projected single-community price.

While the process took longer than expected, the collective result was more efficient than having each community draft and post individual RFPs, contract individual service providers and pay travel and administration costs. A number of communities have indicated that they would choose to undertake a similar collaborative process again in future for procuring acoustic leak detection services. It is likely that future collaboration would be more efficient based on the experience gained during this process.

The **quantitative results** of the acoustic leak detection service as provided by the contractor are:

**Number of Systems Surveyed:** 7

**Total length of watermain surveyed:** 328 km

**Total number of leaks found:** 52 leaks

**Estimated volume of water saved:** 870 l/min, 1,252,800 litres per day or 1.25 MLD

**Equivalent supply at 350 litres/cap/day:** 3,579 persons

*(These water savings are, of course, contingent on repairs being conducted by the municipalities.)*

The **qualitative results** are more varied. Some of the communities found (and have since repaired) leaks that affirmed their existing understanding of their system losses due to leakage. In other cases, virtually no leaks were found in communities whose water balance model suggests significant unaccounted for water and/or leakage. Some communities, where the results of the acoustic leak detection were not consistent with their pre-existing understanding of system leakage, were spurred on to undertake night-time reservoir draw-down tests and have since gained a much better understanding of the total leakage in their system.

In summary, while leaks were detected in all participating communities, the complete picture of how reliable those results are is highly dependent on the local data and infrastructure context: communities with more comprehensive existing data and system knowledge got more useful results from the acoustic leak detection process.

A number of communities are exploring appropriate next steps to address leak detection. CBT has heard from many communities that it is an ongoing operational priority and further education is needed. As a result, over the next year CBT will endeavour to provide learning and collaborative opportunities that will support Water Smart Communities in meeting their water conservation objectives in this important area.

Whether or not your community is formally participating in the Water Smart Initiative, if you are interested in participating in a multi-community RFP for acoustic leak detection services in 2011, we would like more information about the 2010 RFP and process,

please contact **Meredith Hamstead**.

CBT continues to seek opportunities where communities may be able to capitalize on the benefits of a collaborative approach to water conservation. If you have ideas on or suggestions for this, contact **Meredith Hamstead**.



### Learning Webinar: Grant Writing for Water Conservation

Thursday, December 16, 2010

On October 7, 2010 attendees of this webinar heard from representatives from the Provincial and Federal Governments responsible for receiving and adjudicating water conservation grant applications, as well as from a fundraising professional who offered practical grant writing advice.

**Pat Christie of the Goldie Company** delivered a presentation on critical tips and mistakes to avoid when writing grant applications for government, private and non-profit donors. This presentation included information on general grant writing skills and is not exclusive to water conservation applications.

**Darry Kempling from the Province of BC Ministry of Community Development** delivered a presentation which outlined available infrastructure grants, infrastructure planning grants, tips to writing successful grant applications and successful vs. unsuccessful applications.

**Michelle Osborne and Bowdin King of the Federation of Canadian Municipalities' Green Municipal Fund (GMF)** delivered a presentation on available support for water conservation projects and key things to consider or avoid when submitting applications to the GMF.



### Learning Webinar: Conservation Oriented Water Pricing

Thursday, December 16, 2010

On October 26 2010, CBT hosted a webinar titled "**Conservation Oriented Water Pricing: Getting Started - Critical Considerations and Common Mistakes to Avoid**".

This excellent water pricing primer was delivered by Kirk Stinchombe of **Econics** and Oliver Brandes of the **POLIS Water Sustainability Project**. The presentation builds upon the content found in "**Worth Every Penny: A primer on conservation-oriented water pricing**" and is relevant to all local governments.



### Conservation Corner: Go with the Evidence

Thursday, December 16, 2010

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The more data you collect, the more refined your water conservation program can be. When Kelowna implemented its Water Smart program after universal metering in 1996, equal weight was placed on residential and Institutional, Commercial, and Industrial education programs. But data from the meters clearly showed that the peaks were caused by residential irrigation in four specific neighbourhoods. As a result, the ICI program was scaled back and more resources were put into programs targeting those key neighbourhoods.

In the absence of data, sometimes you have to make an educated guess. Salmon Arm implemented its Water Wise public education program in 2003. The city is not metered, so it was assumed that residential irrigation was the main problem. This was probably a good assumption, but a study done in 2004 showed that almost 54 percent of Salmon Arm's water was unaccounted for. While Salmon Arm's public education program is necessary and effective, the city is now looking at options to reduce system leakage and unbilled consumption.

Data can be misinterpreted and even ignored in large organizations full of highly paid brains. In her book, Pillars of Sand, Sandra Postel tells the story of a dam in Cape Town, South Africa. Spiralling population made it necessary to increase supply capacity by 40 percent. A dam was built despite a study that concluded the 40 per cent increase could be achieved by reducing system loss - for a fraction of the cost of the dam. Of course, the dam silted up faster than the experts predicted, and the billion-dollar dam soon became a billion dollar boondoggle.

So Sherlock Holmes had it right all along. If you want to get the most out of your water conservation dollars, make sure they go to projects that create the greatest efficiencies. It's elementary!

*By Neal Klassen, BCWWA "Watermark" contributor*

Originally published in the fall 2005 issue of Watermark Magazine, the official publication of the British Columbia Water and Waste Association (BCWWA).

For more information contact [Neal Klassen](#).

