

Having trouble reading this email? [View it on your browser](#)



Columbia Basin Water Smart

IN THIS ISSUE

[Water Smart Initiative
Reaches A Milestone](#)

[Save the Date](#)

[From Plans to Action-
Communities Achieving
Results](#)

[Water Smart Ambassadors
Spread Conservation
Message](#)

[Thirsty for Data?](#)

[Resources](#)

FORWARD TO A COLLEAGUE



Know someone who might be interested in this email?
[Forward to a Colleague.](#)

[Water Smart Launches NEW Web Pages](#)

The Columbia Basin Water Smart Initiative (Water Smart) has a new website where you can learn more about indoor and outdoor water conservation, the Water Smart Ambassador program, community-specific water conservation data, and find other tools and resources for water conservation in the Basin. Visit www.cbt.org/watersmart to learn more.

If you have questions about CBT's Water Smart initiative, contact [Meredith Hamstead](#), Water Smart Coordinator or [Heather Mitchell](#) CBT Program Manager, Water Initiatives.

Water Smart Initiative Reaches A Milestone

Seven per cent average water savings to date

Congratulations to all 23 participating communities on their hard work and dedication to water conservation efforts as we are meeting or exceeding the objectives so far!

[...more](#)



[BACK TO TOP](#)

Save the Date

3rd Annual Water Smart Conference, October 24-25, Kimberley, BC

Calling all local governments elected officials and senior staff ...

Save the Date for the 2012 Water Smart Conference to be held at the [Kimberley Conference and Athlete Training Centre](#) on October 24 and 25.

This year's conference is focused on building the core, non-technical knowledge of local government elected officials and staff decision makers in the fields of: **Water Loss Management; Water Metering;**



and **Water Conservation Communications.**

This educational event will build the knowledge you need to achieve your community's water conservation targets to 2015 and beyond.

It is free of charge and exclusively for local government staff and elected officials of participating Water Smart communities.

Registration information will be available soon.

[BACK TO TOP](#)

From Plans to Action- Communities Achieving Results

Local governments across the Basin are achieving some significant successes in water conservation. In most cases, these are being realized in three primary areas of action. Read about community case studies in each of the following areas:



- o **[Water Metering:](#)**
- o **[Water Loss Management; and](#)**
- o **[Outdoor water conservation.](#)**

[BACK TO TOP](#)

Water Smart Ambassadors Spread Conservation Message

This summer, Water Smart Ambassadors are working in 14 communities around the Basin. Part public relations liaison and part technical advisor, Water Smart Ambassadors educate residents in their community about outdoor water conservation—the need for it, and how to accomplish it. **[...more](#)**



[BACK TO TOP](#)

Thirsty for Data?

How much water do we really use? Lots!

The numbers don't lie. In the Basin we use a lot of water. More than the average Canadian. More than the average British Columbian. There is still room for improvement, but through the efforts of local governments in the Basin, things are rapidly improving. [Read more](#) to find out just how much water we really use....



[BACK TO TOP](#)

Resources

Water conservation education resources are available on the [Columbia Basin Water Smart website](#) including:

- [The 2012/2013 Water Smart Implementation Plan](#)
- [Water Loss Management Training presentations](#)
- [Frequently Asked Questions about Water Metering for communities](#)
- [Developing Water Data Metrics for Communities with residential or commercial water meters](#)

[BACK TO TOP](#)

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

www.cbt.org/watersmart • 1.800.505.8998 • watersmart@cbt.org

You're receiving this email because of your previous interest or involvement in CBT's [WaterSmart Initiative](#). You may [unsubscribe](#) if you no longer wish to receive this or [subscribe here](#) if you are not already subscribed.

WATER SMART INITIATIVE REACHES A MILESTONE

Seven per cent average water savings to date



Congratulations to all 23 participating communities on their hard work and dedication to water conservation efforts as we are meeting or exceeding the objectives so far!

In March 2010, the Columbia Basin Water Smart Initiative (Water Smart) began collaborating with 23 local governments to achieve two objectives:

1. reduce Basin-wide community water demand by 20 per cent by 2015; and
2. increase the internal capacity of local governments to implement effective water conservation strategies.

Results to Date

Participating Water Smart communities report monthly and annual water demand by January 31 of each year so that their progress can be measured against their [Water Smart Action Plan targets](#). Reports up to December 31, 2011 indicate that by implementing community-specific Water Smart Action Plans, communities have achieved an average of seven per cent annual water savings-with some communities reaching over 20 per cent savings from the 2009 baseline. In just two years, communities have achieved over one third of the 2015 conservation target (20 per cent). Collectively, communities have conserved over 2,094 mega litres (ML) of water on an annual basis, which is enough to fill over 830 Olympic-sized pools.

Indicator (as of December 31, 2011)	Basin-Wide Minimum 2011	Basin-wide Maximum 2011	Basin-wide Average 2011
2015 water conservation target	-5%	-30%	-20%
2009-2011 change in gross demand (%)	+13%	-23%	-7% (-2,094 ML)

Although the savings are significant, there is wide variability in community results. One Water Smart community has realized a 23 per cent demand reduction from their 2009 baseline. Some Water Smart communities have already exceeded their 2015 targets and are now aiming for even greater water conservation outcomes by 2015.

At the other end of the spectrum, one community has seen an apparent 13 per cent *increase* in demand. At first glance, this community appears to be heading in the wrong direction. The increase is not, however, the result of rising water consumption. Instead it is a result of the repair and replacement of old water meters that had previously been underreporting water demand. This community's capacity for water conservation has expanded significantly because they are now collecting accurate water demand data. This community has a much more accurate picture of how much water they are using, and a better idea of who is using it. This improvement in the ability to *measure* water will now lead to improved capacity to *conserve* water. In this case, rather than being a negative outcome, the increase in water demand has been a necessary precursor to conservation.

Despite an increase in water demand in a few communities, overall water demand among the Water Smart Communities has typically decreased by five to 15 per cent. Where there have been increases in demand in a few communities, these can typically be attributed to water loss in distribution systems as a result of aging and failing infrastructure.

In all cases, the internal capacity of local governments to implement effective strategies for water conservation is improving and meeting Water Smart objectives.

If you are curious how your community stacks up against provincial and national water use averages visit the [Living Water Smart](#) website.

Read examples of how Water Smart communities are achieving their water conservation [objectives](#).

MEASURE IT...

Reliable water data is the precursor to effective water conservation

"Measurement is the first step that leads to control and eventually to improvement. If you can't measure something, you can't understand it. If you can't understand it, you can't control it. If you can't control it, you can't improve it." (Harrington.)

This is certainly true of water management, and many Columbia Basin Water Smart Initiative (Water Smart) communities have advanced their ability to account for the water they supply. Accurate measurement is a central requirement for any utility to achieve significant and sustained water conservation outcomes.

System Metering



The City of Kimberley results make them appear as an outlier in the Water Smart Initiative. From 2009 to 2011 the City's water demand has increased by 13 per cent. However, this figure does not represent an *actual* increase in demand, but rather, a *correction* in gross demand data that can be accounted for by the replacement and/or calibration of the water meters at municipal sources and at the largest commercial water connections in the community. Kimberley's meters had been significantly under-registering demand, a common problem with aging water meters. By implementing an automated data collection and analysis system, and improving water metering within their distribution system, Kimberley is now accurately measuring the volume of water being produced. This allows for better information about where water is going so they can more effectively identify both residential and distribution system leakage—the greatest culprit in water loss in Kimberley. This significant improvement to the City's data gathering infrastructure and analysis capacity is the greatest advancement to support the City's water conservation objectives. Now that the city can better measure their water, they are in a much better position to start to conserve it.

Universal Metering

The District of Sparwood implemented a universal water metering program in 2011 and they are already seeing the benefits of the data from the new metering program. With this new data, the District is using its Water Smart Ambassador to contact residents at those connections where water use is high. The Ambassador can offer residents one-on-one assessments to help determine why their water use is high and make recommendations on how to conserve. The Ambassador looks for water leaks, help determines optimal irrigation system use and provides free hose timers or rain sensors.

Using the new available data, the District of Sparwood water utility will also be in a good position, through a process of elimination, to identify leaks in their municipal infrastructure. By universally measuring water demand, Sparwood will now be able to develop a customized and efficient approach to water conservation for their community. Once they have multiple years of consumption data, they will be able to ensure equitable allocation of water costs among customers, and they will be better able to support their customers to manage their water costs.



Water Metering Assessments

Eight Water Smart communities are asking the question: Should we meter, and if so, how? These communities are in the process of working with experts in municipal finance and infrastructure to determine whether or not the 20 year costs and benefits of a range of metering programs are favourable from an environmental, social and fiscal perspective.

With support from the Water Smart Team a Water Metering Assessment RFP was posted, and seven proposals were received in the fall of 2011. Two firms were selected and participating communities had the option of contracting with either one, depending on their unique needs, budgets and preferred scopes of work. This RFP process was unique because:

1. a collaborative approach to the procurement of professional services has resulted in more rigorous terms of reference for the RFP and more competitive and cost effective proposals; and
2. The scope of the RFP specifically stated that "universal metering", "system metering", and "no metering"



were to be considered acceptable recommendations. While metering is one tool for water conservation, it is not the only tool, nor it is necessarily the most effective tool for every community.

Once the results of the Water Metering Assessments are complete, the Water Smart Team will continue to work with communities to develop and implement locally appropriate water metering strategies.

Read more about community action case studies in [water loss management](#) and [outdoor demand reduction](#).

FIND THE LEAKS...

Water Loss Management is the foundation for water conservation.



Can you really lose millions of litres of water every month through a tiny hole and not notice? The simple answer is yes. Most Basin communities are losing anywhere from 15 to 80 per cent of the water they pump, treat and supply to leakage in public and private distribution systems. By contrast, ten per cent water loss would be considered an acceptable figure. The geology of many Basin communities consists of gravel meaning that some leaks will never appear at the surface. These leaks have to be uncovered by skilled local government staff. Most of the water being lost in utility distribution systems is slowly being dribbled away through small cracks, holes, and breaks that are seeping into the ground and may never be seen. By learning to implement repetitive, effective approaches to Water Loss Management (WLM) some Water Smart communities are saving millions of litres of water. While there are many community successes, below are a few examples from the Basin.

City of Fernie

In Fernie, existing water meters in pressure reducing stations are now being used as system meters to isolate water loss at a district (neighbourhood) level. By implementing best practices in Water Loss Management, City staff located three unused water services in the Riverside community that had been open and flowing for several years. By first identifying water loss at a district level, staff were then able to locate the source of the problem and close the flowing valves. Using newly acquired expertise with no infrastructure repair, they were able to conserve 7.7 per cent of the City's total annual water demand. Improved installation specifications for curb stops ensure that these types of service materials will not be installed in the future.

Village of Nakusp



In Nakusp, a 1/8" puncture in a water main was located in March 2012. It is estimated that repairing this hole in a 2" galvanized steel line at a pressure of approximately 40 psi will result in a savings of nearly 5,000,000 litres annually.

Village of Salmo

In Salmo, after fixing a major leak, and turning off the spray nozzles at the sewage treatment plant, they expect to reduce their water demand by 30 per cent-more than 10,000,000 litres per month.

City of Cranbrook



A regional leader in water loss management, the City of Cranbrook is the first in the Basin to adopt and implement a comprehensive five-year water loss control program. Cranbrook has also demonstrated a commitment to knowledge sharing and regional capacity building in the field of Water Loss Management. This community-to-community learning is a great example of capacity building for water to result from participating in the Water Smart Initiative.

Slow and steady wins the race

Fernie, Nakusp and Salmo's success stories are encouraging, but it is clear that Water Loss Management (WLM) does not offer a quick fix for water conservation. When a utility finds and fixes a leak in one section of pipe using WLM best practices, pressure can increase elsewhere in the line, which may cause a new leak at an existing but unidentified weak spot. As a result, while millions of litres can be saved with a single repair, many communities are experiencing a challenging trend of savings gained, savings lost. In some cases, new losses are eclipsing savings gained. While this can be frustrating for communities, WLM should be understood as a long-term tool for water conservation. New skills, new pipes, and new tools implemented

over time will enable communities to identify leaks and be confident that their repair and replacement efforts will be sustained. The benefits of WLM will only be realized by communities that apply a unique local plan with a persistent and consistent approach. This is truly a case where slow and steady wins the race.

Training Courses for Water Utility Operators

In January 2012 Water Smart delivered Water Loss Management training courses for water operators. This two day course was attended by 60 operators from 20 Basin communities. Instructors Mike Ippen, Jaime Eichenberger and Joe McGowan addressed a comprehensive and practical overview of Water Loss Management best practices. Participants were eligible for Environmental Operators Certification Program (EOCP) continuing education units (CEUs) required to maintain their water operator certification. Since taking the training, operators have reported measurable successes in water loss reduction through implementation of skills gained at the course. Presentations from the course are available on CBT's [website](#).

Building on this success, Water Smart will offer three in-depth Water Loss Management workshops in 2012/2013. The workshops will be eligible for EOCP credits, and will offer participants an opportunity to explore the practical application of best practices to the unique context of their water systems. Topics will include: night flow analysis; district metered areas and pressure management; International Water Association (IWA) water audits; and acoustic leak detection.

If you would like more information about these workshops, please contact Meredith Hamstead, Water Smart Coordinator.

Read more about community action case studies in [improved water data collection](#) and [outdoor demand reductions](#).

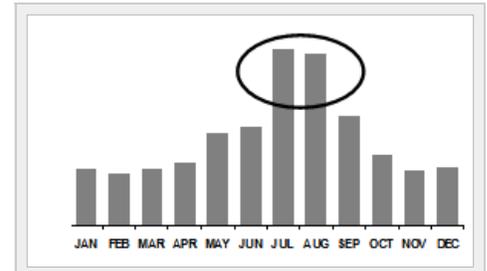
REDUCE OUTDOOR DEMAND...

Less irrigation = more water conservation = less infrastructure

The graph below shows how typical community water use increases in spring and summer. Lawn and park irrigation is the main contributor to this "peak demand", the period when water consumption is at its highest. Peak demand is the most common driver for the construction of new water supply infrastructure in the Basin. By reducing peak demand, Water Smart communities are reducing their impact on water supply, distribution and treatment infrastructure, and on the environment.

Some of the peak demand reduction strategies being employed around the Basin are presented below.

Irrigating smarter, not longer.



Town of Golden



The Town of Golden is leading by example and in 2011 assessed all of their park irrigation systems. The park irrigation system assessments have been individually documented and, based on the findings, the Town has developed an irrigation action plan which identifies maintenance and repair priorities, and water conservation opportunities.

Data analysis of the irrigation assessments in Golden has linked daily water demand to temperature and precipitation. In 2011, the Water Smart Ambassador found that temperature is driving residential irrigation. As temperature rises, people are turning on the taps, regardless of precipitation in the days before. The Water Smart Team carried out some similar data analysis for other communities and found a similar correlation. This new understanding will allow the 2012 Water Smart Ambassadors to deliver more effective outreach to residents by ensuring that on warm days, as opposed to just dry days, they are out in the community educating residents about irrigation practices.

City of Trail

The City of Trail has converted all of its irrigation clocks so they can be centrally controlled, monitored and optimized. The Sentinel Central Control System allows flexibility for irrigation system operators. With this equipment and software, the City can control all equipment from one location or while on the move over the internet. Operators also get feedback from the field, and can quickly identify if a particular component needs attention and even shut the system down remotely if it begins to rain. In addition there are two weather stations located at opposite ends of the City, connected to the central control system that monitor weather conditions and adjust the irrigation systems accordingly. If the weather turns cloudy or cool, system irrigation times are reduced. The central control system monitors 95 per cent of the total park area in Trail. With this computerized system the City of Trail is setting an example for residents and taking a lead role in water conservation. Installation of flow meters at each centrally controlled park, will record water consumption. Records are expected to show a decrease in water use.

City of Nelson

Many of Nelson's parks have been removed from the potable water system and are now being irrigated from Kootenay Lake water or by well water. The City is also looking for other opportunities to reduce potable water demands by finding new sources of untreated water for park irrigation. While the total water use may not be decreasing, by switching to non-potable sources this initiative increases the resiliency of the water system and demonstrates water stewardship, as well as sound asset management. Taking the demand off the potable water system reduces the strain on the existing infrastructure and will reduce costs for future infrastructure. It also sets an example to residents of Nelson that potable water should not be used for irrigation and that there are other less costly sources available.

Reducing Residents' Outdoor Watering

Outdoor irrigation at single family dwellings typically presents the best opportunity for residential water



conservation in Basin communities. Water demand more than doubles and even quadruples in the summer over winter demand. . Outdoor irrigation drives peak demand which in turn drives the need to "super-size" water supply and treatment infrastructure. In response, 14 communities have hired [Water Smart Ambassadors](#), who are educating residents about outdoor water conservation over the summer. Now in its second year, Water Smart Ambassadors have implemented a wide range of outreach programs to encourage residents to get better informed about their role in community wide water conservation.

Read more about community action case studies in [water metering](#) and [water loss management](#).

WATER SMART AMBASSADORS SPREAD CONSERVATION MESSAGE

This summer, Water Smart Ambassadors are working in 14 communities around the Basin. Part public relations liaison and part technical advisor, Water Smart Ambassadors educate residents in their community about outdoor water conservation-the need for it, and how to accomplish it.

During a presentation to Grade 5 students, the City of Trail's Water Smart Ambassador, Ryan Macklon, encouraged students to leave the tap *on* when brushing their teeth.



This might seem like an odd thing for Macklon to do, given that his job is to educate people how to reduce their water use, but there was a method to his madness.

Macklon was conducting an experiment for Glenmerry Elementary Students to show students how much water they waste if they leave the tap running while brushing their teeth.

Turns out it's quite a lot-more than four litres if they leave the tap running for just one brush!

Macklon is one of eleven people doing similar work throughout the region this summer in the second year of Columbia Basin Trust's Water Smart Ambassador Program.



FOCUS ON OUTDOOR WATER USE

Although educating children on water conservation is important, the Ambassador's primary focus is to help reduce outdoor water use related to residential irrigation.

The Ambassadors provide free residential lawn and garden watering assessments. During a home visit they will:

- assess soil conditions;
- identify current watering practices and look for ways to conserve water;
- determine the watering needs of the landscape;
- assess manual or automatic watering system and make changes to increase efficiencies.

Ambassadors are giving away free hose timers to homeowners with manual irrigation systems. A hose timer attaches to a garden hose and turns it off after a set amount of time.

For homeowners with automatic irrigation systems, the Ambassadors can provide a free rain sensor that will shut off the sprinkler system when it rains.

A HELPFUL RESOURCE

The Water Smart Ambassadors help people make the link between information and action, providing each participating community with a helpful resource who can interact with the public

The Ambassador's are:

- technical advisors, helping people get more efficiency out of their irrigation systems;
- investigators, carrying out surveys and gathering information about water use; and
- educators, attending community events and promoting water conservation.

CBT developed the Water Smart Ambassador Program for communities which includes program training, providing communication materials and technical support. Each community and Ambassador customize the program to make it their own. In Sparwood, for example, Ambassador Tiana Shea had a local businesses donate rain barrels which were painted by a local artist, then auctioned off with proceeds going to charity.

This summer, Water Smart Ambassadors are working in Valemount, Golden, Elkford, Sparwood, Fernie, Kimberley, Rossland, Trail, Castlegar, Creston, RDCK-Erickson, Montrose/Beaver Valley Water Service Area/



Rivale and RDEK-Edgewater. Read more about these community [Ambassador Programs](#).

THIRSTY FOR DATA?



How much water do we really use? Lots!

The numbers don't lie. In the Basin we use a lot of water. More than the average Canadian. More than the average British Columbian. There is still room for improvement, but through the efforts of local governments in the Basin, things are rapidly improving.

Collectively, Water Smart communities have reduced total water demand by over seven per cent in under two years. That's an impressive figure, but this reduction needs to be sustained and improved upon over the long term.

Utility-Wide Demand

The first comparable indicator of demand is total average daily flow which is the total volume of water produced by a utility divided by the number of people serviced by the utility. This indicator includes all uses, such as residential demand, parks irrigation, leakage and commercial demand. While the Basin average has fallen to 953 lpd since 2009, we are still, on average, producing almost 60 per cent more water per capita than the rest of the province, (606 lpd), and over 85 per cent more than the National average (510 lpd). In some communities, we are producing more than double or even triple the provincial average. These figures mean that in the Basin, an enormous amount of water is being stored, treated and put into distribution systems, and then much of it is being lost in the form of leakage. To address this issue, over the coming year, the Water Smart Initiative will be focused on supporting communities in the field of Water Loss Management.

Indicator (as of Dec 31, 2011)	Basin-Wide Minimum 2011	Basin-wide Maximum 2011	Basin-wide Average 2011	Basin-wide Average 2009	B.C. Average 2009	Canada Average 2009
Total Average Daily Flow <i>(Total water use / service population)</i>	543 lpd	1836 lpd	953 lpd	1118 lpd	606 lpd	510 lpd

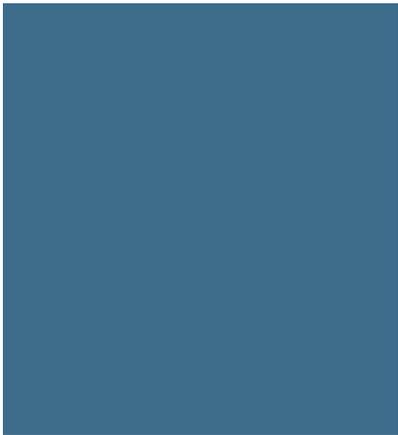
Residential Demand - Indoor and Outdoor Combined

Residential demand indicators are difficult to compare across jurisdictions due to data deficiencies and lack of consistency in data parameters between jurisdictions. The Water Smart Team cannot yet accurately report on total annual average residential demand per capita in the Basin but we are hopeful that by this time next year this data may be more readily available as a result of new residential meter data. In 2009, an estimate data analysis was completed and, on average, Basin residents are using over 450 liters per person per day (indoor and outdoor combined), as compared to 353 lpd across BC and 274 across Canada. As a rule of thumb, 350+ lpd is considered a "high use home"; 200 lpd would be the expected demand in an average home built to current building code standards; and 150 lpd is considered an achievable conservation target for per capita water demand in BC.

Residential Demand - Indoor

There is not yet a reliable figure for indoor residential demand, and this data is not available for the province or for Canada. For now, however, we are using a Basin estimate of 230 lpd for indoor demand based on preliminary meter data from Basin communities and rural design standards for residential water systems. By this time next year it is feasible that there will be more reliable Basin-wide figures.

Indicator(as of Dec 31, 2011)	Basin-Wide Minimum 2011	Basin-wide Maximum 2011	Basin-wide Average 2011	Basin-wide Average 2009	B.C. Average 2009	Canada Average 2009
Residential Demand	Unknown	Unknown	Unknown	450+ lpd	353 lpd	274 lpd



<i>(Indoor + outdoor)</i>				<i>(estimate)</i>		
Residential Indoor Demand	Unknown	Unknown	230 lpd <i>(estimate)</i>	Unknown	Unknown	Unknown

While it's not clear precisely how much water communities and individuals are using in the Basin, we know that it is a lot! Fortunately, this trend is already improving and, given progress to date and projected actions by Water Smart communities, by 2015 it's anticipated Basin communities and residents will be using less water than was used in 2009.