

TRENDS ANALYSIS: WATER CONSUMPTION

FALL 2015



What does this measure & why is it important?

This indicator considers two measures of consumptive water use:

- average per capita daily supply, and
- gross annual supply (total fresh water withdrawal per water utility).

2009 is used as a baseline year to compare change in gross annual supply. Fourteen Basin-Boundary municipalities are included in this year's analysis. Data and contextual information for this indicator were provided by the [Columbia Basin Water Smart Initiative](#). It is important to note that this year's analysis incorporates some different communities than last year's. Therefore, caution should be exercised when comparing average results from this year to those from last year.

Consumptive water use is an important issue in the Basin-Boundary region for several reasons. First, rates of water use in this region are typically higher than the averages for BC and Canada (Environment Canada, 2011). Second, the diversion, treatment, and delivery of drinking water has costs—both financial (e.g., infrastructure operations, maintenance, and expansion costs) and environmental (e.g., drawdown of water sources). These costs increase with growing water demand. Third, certain areas of the region sometimes experience water shortages during periods of peak demand. This issue may become more widespread if projected climate changes materialize and Basin-Boundary communities are not prepared to adapt.

What are the trends & current conditions?

Across reporting Water Smart communities, average per capita daily supply stands at 968 litres per person per day (Figure 1), roughly 160% of the BC average of 606 litres per person per day (Environment Canada, 2011). The most probable reasons for our high per capita usage rates are related to three issues:

- water distribution infrastructure in the region is generally aging and therefore prone to leakage,
- there is a common perception in the region that sees water as an abundant resource, and
- residential and commercial water use is largely unmetered and may be under-priced in comparison to other areas in British Columbia and Canada.

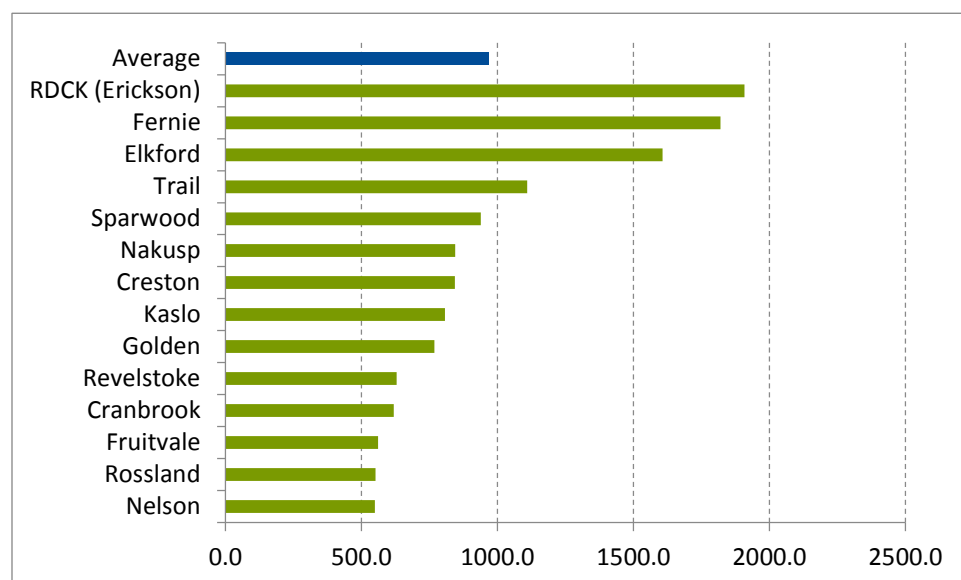


Figure 1: Per capita daily water supply (in litres), 2014
Source: Columbia Basin Water Smart Initiative (2015)

Most reporting communities reduced their consumptive water use over the period 2009-2014 (Figure 2). Gross annual supply (which includes commercial, industrial, institutional, and residential consumption as well as water loss in the distribution system) changed by an average of -12.3%. In many cases, figures for individual communities are significantly different than those reported last year. The reason for this adjustment varies by community. In some, the difference is linked to actual changes in consumer water demand, related to things like climatic conditions (e.g., temperatures during irrigation season) or the impact of water conservation initiatives. In others, the difference can primarily be attributed to changes in the state of a system's infrastructure, which can deteriorate over time or benefit from improvements like leak detection and repair.

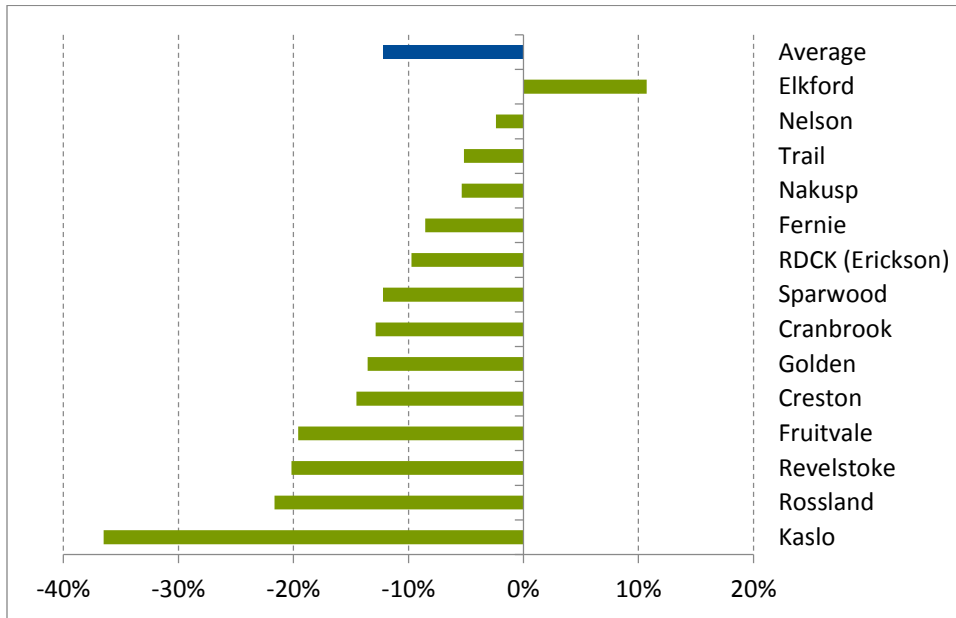


Figure 2: Change in gross annual water supply, 2009-2014
Source: Columbia Basin Water Smart Initiative (2015)

Most Water Smart communities are building their capacity to effectively manage and reduce water demand. Community actions, which may not yet be reflected in gross annual supply figures, are primarily taking the form of water data acquisition improvements, infrastructure repair and replacement, and improvements in distribution system operations and maintenance. Some utilities are choosing to install water meters on their systems in an attempt to better understand their community's usage profile. These investments in our region's water systems are expected to result in substantial water savings in future years.

References

Columbia Basin Water Smart Initiative. (2015). 2014 Data [Dataset].

Environment Canada (2011). 2011 Municipal Water Use Report. Government of Canada. Retrieved from: <http://www.ec.gc.ca/Publications/default.asp?lang=En&xml=B77CE4D0-80D4-4FEB-AFFA-0201BE6FB37B>



The Columbia Basin Rural Development Institute, at Selkirk College, is a regional research centre with a mandate to support informed decision-making by Columbia Basin-Boundary communities through the provision of information, applied research and related outreach and extension support. Visit www.cbrdi.ca for more information.