

## Public Systems

Public water systems in BC serve approximately eighty-four percent of the provinces population. Sixteen percent of British Columbians obtain water from private unregulated systems that serve a single family residence. In 2000, an inventory of BC's water supply systems by the Provincial Health Officer, reported that there were 3016 water systems under provincial jurisdiction that year. Approximately seventy five percent of these were systems having less than 300 connections, two-thirds had between two and fourteen connections.

## A Water Supply System

In British Columbia, a 'supply system' is any system that provides domestic water, to two or more connections. A water supply system can be operated for example by municipalities, improvement districts, industries, resorts, campgrounds, and private individuals.

## Defining a Small Water System

A number of variables may be used to classify water systems, for example: size, number of connections, number of users, and complexity. The term 'small system' has been given more than one definition in BC. The Ministry of Health, the lead agency responsible for the safety of drinking water, refers to 'small systems' as having two to fourteen connections. Their classification system is as follows:

- Small: 2-14 connections
- Medium: 15-300 connections
- Large: greater than 300 connections
- Semi-private: facilities that serve for example, a school, campground, motels, or logging camp. Although there may be only one connection, it is considered a public system and must comply with drinking water regulations.

The current (2006) Drinking Water Protection Regulations contains a different definition of what constitutes a '**small system**'. This is an important distinction because in 2005, the regulations were amended in order to add a framework for small water systems. The regulations contain the following definition:

*"small system" means a water supply system that serves up to 500 individuals during any 24 hour period.  
(en. B.C. Reg. 352/2005, s. 1.)*

## Source Supply

An estimated seventy five percent of BC's drinking water supply is from **surface sources**. Surface water such as lakes, streams and springs, are particularly susceptible to contamination because it is open to the atmosphere, and exposed to surface activities. Contamination can occur as a result of:

- human or wildlife activities,
- natural events in the watershed such as landslides, wild-fires, or extreme runoff from heavy rain.

**Groundwater** sources account for about one quarter of BC's source supply. Ground water is an attractive source supply because it:

- provides a better chance of uninterrupted supplies,
- has fewer licensing restrictions compared to surface supplies, and,
- is often the only source available.

In 2004 the new Ground Water Protection Regulation (GWPR) came into force. The main goal of the GWPR is to protect both the quantity and quality of ground water in BC.

*More information about Ground Water Regulations can be found in Guidesheet 3.1.*

*More information about water resource management by the Ministry of Environment be found at: <http://www.env.gov.bc.ca/wat/>*

## Challenges Facing Small Water Systems

The 1998 BC Auditor General's report identified the following unique challenges faced by small systems.

1. *Greater likelihood of contamination* - outdoor recreation, logging, mining, cattle grazing, and agriculture, transportation, and human settlement are more likely to occur in rural areas where small water systems are common, thus placing them at higher risk than larger systems.
2. *Aging Infrastructure* - The water systems in BC are on average the second oldest in the country, and currently have an average age beyond the expected life span.
3. *Lack of Capacity Development* - Capacity development is a term applied to the process of acquiring and maintaining adequate **financial, technical, and managerial** capabilities. These capabilities are necessary to enable water systems to provide safe drinking water, and to ensure sustainability.

Revenues are less available to small systems because:

- absence of economics of scale,
- government programs are usually aimed at large systems such as regional districts and municipalities.

Inadequate revenues spawn a vicious cycle: without sufficient funds, water systems cannot obtain appropriate technology and technical and managerial expertise.

Insufficient funds can prevent small systems from developing long and short-term plans, purchasing effective treatment technology, managing finances, monitoring water quality, designing and implementing emergency response plans, and educating the public about water conservation and use.

4. *Non-compliance with Regulations and Standards* -As of April 2005, there were over 400 communities throughout the province under boil water advisories



## Resources to Assist Small Water Systems

A number of organizations have web based resources that provide valuable information on small systems for operators and users.

### British Columbia Water & Waste Association (BCWWA)

<http://www.bcwwa.org/committees/smallwatersys/index.php>

### Small Water Users Association of BC

[www.smallusers.com](http://www.smallusers.com)

### Coastal Water Suppliers Association

[www.cwsa.net](http://www.cwsa.net)

### Water Suppliers Association of BC

[www.wsabc.com](http://www.wsabc.com)