

What is backflow, what causes it and how can it be prevented?

BACKFLOW is a serious occurrence in drinking water systems. When a CROSS CONNECTION exists, there is the potential for contaminants to enter your drinking water. This brochure will explain what a cross connection is how backflow occurs and what you can do to ensure our drinking water is kept safe.

----- DEFINITIONS -----

BACKFLOW is the reversing of normal water flow direction. Normally, water under pressure in the City water main flows INTO your home. A sudden drop in pressure can reverse the water flow. When this happens, water can be “sucked” OUT of your home or business and into the City’s water system.

A CROSS CONNECTION is an actual or potential link between the City’s drinking water system and a non-potable water source. In a home, this water source could be a swimming pool, a water-cooled air conditioner or a hot water tank.

When backflow occurs through a cross connection, the results can be serious.

- In 1980, raw sewage was siphoned into the water supply of a crab processing plant in Alaska. The incident caused 200 employees to become ill and endangered approximately \$35 million of processed king crab.
- In 2005, residents of Stratford, ON, were warned not to drink, wash their hands, bathe or give tap water to pets. Approximately 5 gallons of a brush detergent from a car wash, containing the chemical 2-Butoxyethanol, was sucked into the drinking water system, turning it pink.

These true examples may seem remote, but the potential for similar incidents also exist in the City of Chilliwack.

CITY OF CHILLIWACK REGULATIONS

Under the City of Chilliwack’s “Waterworks Regulation Bylaw 2004, No. 2995,” all industrial, commercial and institutional connections to the City’s water system require inspection for potential cross connections. Facilities flagged by this inspection are required to install a backflow prevention device. The installation cost of a backflow prevention device is shared by the owner and the City of Chilliwack on a cost sharing 50/50 basis.

Facility inspections and backflow prevention device installations are necessary to ensure safe drinking water for the entire community.

Please do your part in keeping your community’s drinking water safe for everyone by checking for cross connections.



CITY OF
CHILLIWACK

For more information, contact:
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Phone: 604-793-2810

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DRINKING WATER PROTECTION

**Why we have to protect
our drinking water...**



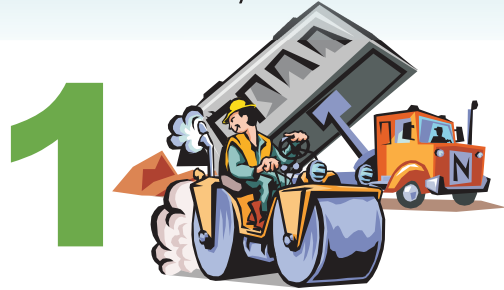
CITY OF
CHILLIWACK

**Cross Connection
Control Program**

BACKFLOW IN A RESIDENTIAL SETTING

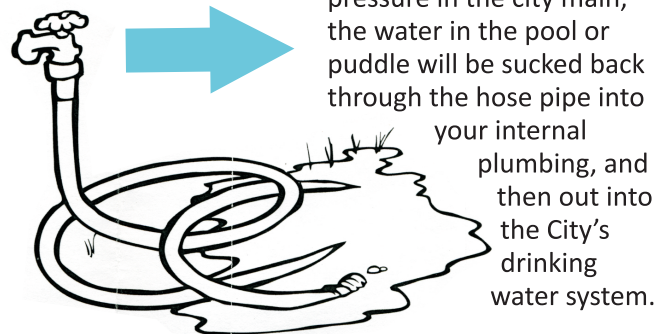
In a normal house, backflow could occur if a water main break or a fire occurred in your neighbourhood. Events like these and other similar events can cause a sudden drop in water pressure, creating the potential for water to flow backwards into the city watermain.

An easy way to visualize backflow is to think about sucking on a straw. Your mouth provides negative pressure to transfer water out of the glass. If you stop sucking on the straw, the water in the straw drains back into the glass. Now the glass contains all the water that was in the straw, as well as some water that was in your mouth. The illustration below shows how backflow could occur in your home.



Let's say a construction crew accidentally digs up a water main in your neighbourhood. The water in the main is normally under pressure. The break, however, will cause a sudden drop in pressure. This creates BACKFLOW from your home.

2 Now, let's say you have a garden hose running and it is laying in a water source like a pool, a pond, or a puddle. This creates a CROSS CONNECTION.



When water pressure returns to normal, the contaminated water from the pool or puddle is now in the city's main and in your house plumbing. Contaminated water can create a serious health risk.

Because of the suction created by the drop of pressure in the city main, the water in the pool or puddle will be sucked back through the hose pipe into your internal plumbing, and then out into the City's drinking water system.

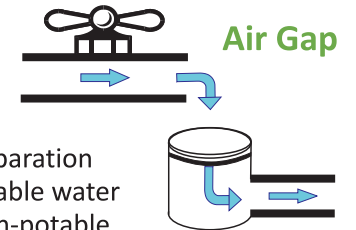
BACKFLOW IN AN INDUSTRIAL SETTING

In an industrial setting, backflow can occur when a non-potable water system operating under high pressure (by means of a pump or boiler) is connected to the drinking water system. If pressure is suddenly lost in the city main, water from the non-potable system will be sucked into the public drinking water system.

HOW SERIOUS IS BACKFLOW?

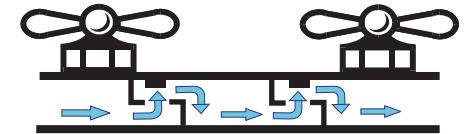
Any time contaminants are allowed to flow into the drinking water system, there is a potential for health risks. The illustrations below show how we can prevent backflow from happening.

Examples of Backflow Preventers



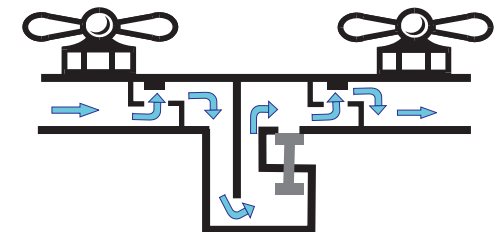
A physical separation between potable water pipes and non-potable water source.

Double Check Valve Assembly (DCVA)



When backflow occurs, spring loaded check valves close to create a seal and stop the water from flowing backwards.

Reduced Pressure Principle Backflow Assembly (RPBA)



Spring loaded valves open when backflow is present allowing contaminated water to drain out harmlessly.