

# Cross-Connections at Home

The City of Parksville is responsible to provide the safest water possible. However, once the water enters private property, common problems may arise due to improper changes or misuse of the plumbing system and these problems may affect the quality of the water provided by the City.

In order to keep the potable water safe from harmful substances, the City has implemented a cross-connection control program to prevent contamination of the potable water.

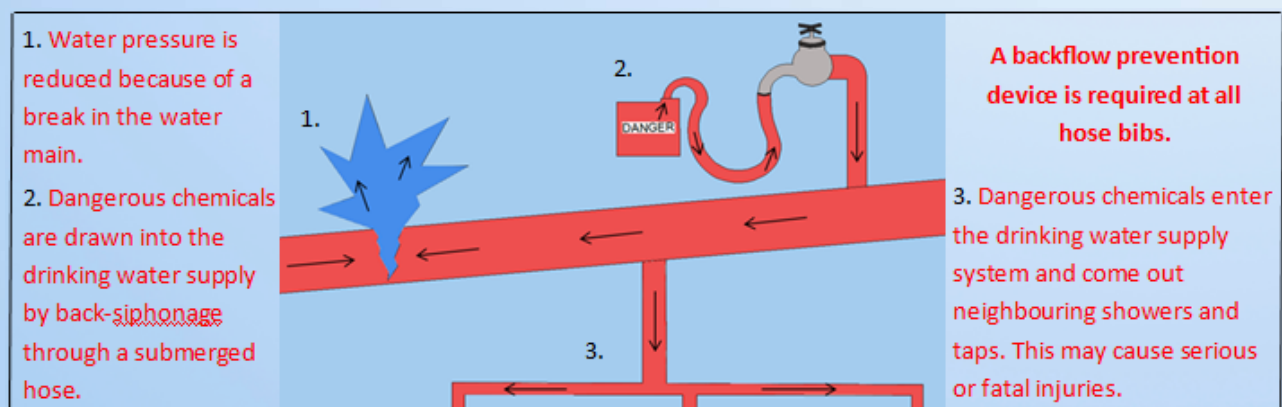
## What is a Cross-Connection?

A cross-connection is a temporary or permanent connection between the potable water system and any other source which may contain a substance which will degrade the quality of the water (e.g. chemicals, pathogens) when backflow occurs.

**Backflow** is a hydraulic condition in the water piping system which causes water to flow in the reverse direction. There are two types of backflow conditions:

**Back-siphonage** is caused by negative or reduced pressure in the supply piping which can occur due to water main break or repair, hydrant flushing, firefighting, etc.

**Backpressure** is caused when a potable water system is connected to a non-potable water system operating under higher pressure. This may be caused by booster or recirculating pumps, boiler or heating systems, elevated piping or holding tanks, etc.



**Backflow preventers shall be selected, installed, maintained and field tested in conformance with CSA B64.10. All works must be performed by an individual certified by the BC Water and Waste Association (BCWWA).**

**It is essential every testable backflow preventer be tested annually by a certified tester (certified by BCWWA) and the test reports be sent to the City within **thirty days** of completion. The City of Parksville will provide blank copies of the test reports and display tags upon request.**

## Non-Testable Backflow Preventers

### Hose Connection

**Vacuum Breaker** is used for minor hazards only. HCVB is effective against backflow caused by back-siphonage and low head pressure due to terminal end of a hose being at an elevation above the HCVB.



**Dual Check Valve** is used to isolate minor residential hazards only where there is no health hazard involved.

## Testable Backflow Preventers

### Reduced Pressure

**Assembly** is used for severe hazard application where an approved air gap is impractical.



### Pressure Vacuum Breaker

is used for minor and moderate hazard application. PVB is effective against back-siphonage only and should not be used if backpressure can develop in the downstream piping.



### Double Check Valve

**Assembly** is used for moderate or minor hazard application.



**Garden hose bibs:** All outside garden hose bibs must have a hose connection vacuum breaker (HCVB) installed at all times to ensure no harmful materials are drawn back into the home and the public water system. Chemicals used on lawns, gardens (pesticides, herbicides, fertilizers) and to clean vehicles can be fatal if ingested.

**Swimming pools and hot tubs:** Ensure the water source used to fill these units are protected with an appropriate backflow preventer .



**Irrigation:** Sprinkler heads are not designed to be drip tight under backflow conditions.

Contaminates that pool around the sprinkler head (chemicals, animal waste) may backflow into the potable water system. Irrigation systems must be protected with a DCVA.

**Sinks ,tubs, tanks:** All faucets must be above the overflow level of sinks and tubs. This separation (air gap) must be two times the diameter of the faucet and never less than 1 inch.

**Private wells/auxiliary water systems:** Ensure that the private water system is not inter-connected to the public water distribution system. Premise isolation is required when private wells/ auxiliary water system are existent, even if they are not connected to the public water distribution system.

**Toilet:** The water that flushes the toilet bowl enters into the toilet tank from a small pipe connected to the bottom of the toilet tank. It is important the float valve inside the toilet tank is the correct type so the used water does not flow back into the potable water system.

**Residential fire protection system:** Ensure the system is protected with a double check valve assembly.

**Residential boilers and geo-thermal systems:** Ensure that there is an approved backflow assembly on the connection between the main water supply and makeup to either of these systems. Heating and cooling systems must be protected from moderate hazard backflow. Prior to installing any backflow preventer for a heating system, have the water heating system inspected to confirm allowance for thermal expansion of the heated water.

