



## Cross-Connection Control and Backflow Prevention

### How you can help safeguard our drinking water



The Municipality of Mississippi Mills is committed to providing its residents and businesses with safe and reliable drinking water.

The quality management system (QMS) for the Municipality's drinking water system was implemented in 2009 to protect public health by achieving consistent good practice in managing and operating the drinking water system.

The possible occurrence of cross-connections/backflow has been identified as a potentially significant threat to the Municipality's drinking water systems. The greatest hazard is from Industrial, Commercial and Institutional buildings with cross-connection and backflow issues.

A 2008 report from the Ontario Ministry of the Environment recently quoted that there have been over 500 significant backflow incidents in North America; 40 which have occurred in Canada.

### How Contamination Occurs

Water normally flows in a singular direction—from the water treatment facility to a plumbing fixture; however, conditions can arise that can cause water to flow in the opposite direction (backflow), when backsiphonage or back pressure is created in a water line.

**Back pressure** is when a source of pressure, such as a pump, creates a pressure greater than the one supplied from the water distribution system.

**Backsiphonage** is when water flows in the opposite direction from the fixture into the municipal water system, caused by a negative pressure in the water line. A watermain break is a condition that can lead to negative pressure occurring.

**Cross-connection:** any actual or potential connection between the waterworks and any source of pollution contamination or other material or substance that could change the quality of water in a drinking water system.

**Backflow:** flow of non-potable water or other substance(s) into a drinking water system that may be caused by back siphonage or back pressure in the presence of cross connections.

### Backflow Prevention

Residential homes are considered a low hazard while industrial, commercial and institutional buildings are at a higher risk for backflow affecting the drinking water system.

The backflow prevention devices used in low hazard locations (most residential homes) are typically Hose Connection Vacuum Breakers and Dual Check Valves

For Industrial, Commercial and Institutional customers, a cross-connection survey of your building will determine the level of hazard that is present. Based on the level of hazard, an appropriate backflow prevention device(s) can be recommended.



## Liability and Responsibility

We can all help safeguard Mississippi Mills' drinking water. Property owners and occupants have a responsibility to ensure that no cross-connections exist on their property as stated in Mississippi Mills' Cross-Connections Bylaw No. 04-41.

The municipality plans to initiate a compliance inspection program in the near future.



Example of a cartridge style dual check valve

## Industrial, Commercial and Institutional Cross-Connections

Most cross-connections include connecting the drinking water supply directly to the following (example list):

- Boilers (i.e., hydronic, steam, etc.)
- Cooling towers/chillers
- Fire sprinkler systems
- Lawn irrigation and sprinkler systems
- Solar heating systems
- Standpipe systems
- Swimming pools
- Wash basins and service sinks
- Water re-circulating systems

## Residential Prevention Tips

The following precautions can be taken to ensure you are doing your part to protect your drinking water:

- Keep the ends of all hoses clear from possible contaminants (i.e., dirt, debris, chemicals, etc.).
- Install hose connection vacuum breakers on all threaded faucets.
- Install backflow prevention on underground lawn irrigation systems, if absent.
- Avoid connecting waste pipes from water softeners or other treatment systems to the sewer, submerged drain pipes, etc.

## Municipal Bylaw No. 04-41

The Municipality of Mississippi Mills currently has a Cross-Connection Bylaw (Bylaw No. 04-41) which requires all premises to be isolated through means of a backflow preventer.

The Ontario Ministry of the Environment considers backflow preventers a 'best practice' that is strongly recommended.

Industrial, Commercial and Institutional (IC&I) customers are strongly encouraged to eliminate and protect against cross-connections that exist on their property. It is advisable to retain a licensed plumber, who is certified in cross-connection control to conduct an on-site hazard assessment