

# BACKFLOW PREVENTION

Spring 2007

## What is the Backflow Prevention

The Town of Lincoln currently operates 2 separate water distribution systems that together, service approximately 21,500 people.

In recent years, there have been cases where drinking water has become contaminated due to what is known as backflow. One recent example of this is an Ontario carwash that accidentally released chemicals used during its operations into the drinking water system. In another case, an Alberta veterinary office was found to have contaminated drinking water with E. Coli and other bacteria. This was due to the fact that there were cross connections between the drinking water supply and a contamination source.

In order to protect human health and drinking water quality, the Ministry of the Environment enforces the Safe Drinking Water Act, which among other things, imposes a statutory obligation on owners of drinking water systems to show due diligence with respect to maintaining water quality. The Town of Lincoln has recognized a need to address the risk of backflow into the drinking water systems from privately owned properties. This will be achieved through the initiation of a Backflow Prevention Program (BFPP), as set out under "By-Law 01-134". By doing so, water quality



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and in turn, human health, will be protected. Also, landowners will avoid any liabilities associated with contaminating drinking water, which include substantial fines and/or imprisonment.

The main components of the program are:

- Testing of any existing backflow prevention devices (BFPD's) by an Authorized Professional
- Installation of BFPD's where needed
- Annual testing of BFPD's by an Authorized Professional
- Testing reports will be filled out by the Authorized Professional who completed the testing and property owners will send in the report to the Town of Lincoln
- Results of testing reports will be stored in an electronic database maintained by the Town of Lincoln with all up-to-date information on properties with BFPD's.

## Definitions

**BACKFLOW**—A reverse flow condition, created by a difference in water pressures, which causes water to flow back into the distribution pipes of the water supply from any other sources

**BACKFLOW PREVENTION DEVICE**—A device is used to protect the water supply from contamination, usually involves a reduced pressure principle assembly

**CROSS-CONNECTION**—Any physical connection or arrangement between potable water and a source of contamination (suspect water, steam, gas or chemical) whereby a flow from one system to the other is possible

## Why do we need a Backflow Prevention Program?

It is needed to reduce potential impacts of contaminants, such as chemicals used in manufacturing, process oils, and embalming fluid, entering drinking water.

The BFPP is necessary to:

- Protect human health
- Ensure “premises isolation”. Please see Figure 1 for layout.
- Avoid liability on part of property-owners associated with contamination of drinking water.
- Comply with the Safe Drinking Water Act (SDWA) and Regulation 170/03, and meet the Ministry of the Environment’s expectations to ensure excellent water quality.
- Comply with Town of Lincoln Amended “By-Law 01-134”

## Who does the Backflow prevention program apply to?

The Town of Lincoln Backflow Prevention Program applies to:

- All non-residential property types, including industrial, commercial, and institutional. The Program also applies to residences if they are more than 3 stories in height (i.e. Apartment building).

Does **not** apply to:

- Single family, semi-detached, or town homes

## What will you need to do?

1. Attend the **Public Open House on May 15, 2007** (details below). This will be an information session where representatives from the Town of Lincoln and DFA INFRASTRUCTURE INTERNATIONAL INC will welcome your comments/questions.
2. Have an initial survey completed by September 17, 2007 to determine whether you have a backflow prevention device. You will return the completed survey to the Town of Lincoln by October 1, 2007. Please note, surveys must be submitted within 14 days of completion.
3. If you do not already have a BFPD on the main service, you will need to have one installed by an Authorized Professional by April 1, 2008. Please note you will need a building permit to install a BFPD.
4. Have your BFPD (newly-installed or previously existing ones) tested by an Authorized Professional to make sure that it is in working order. Then, you will need to send in the testing report to the Town of Lincoln by April 15, 2008. Please note test reports must be sent in within 14 days of testing.

After 2008, you will need to have your BFPD tested by April 15 of each year by an Authorized Professional. You will then send in the testing report within 14 days of completion to the Town of Lincoln.

### OPEN HOUSE

Tuesday, May 15 2007

4:00 pm to 7:00 pm

Lincoln Centre

4361 Central Avenue

## What are the costs associated with the program?

- **Building Permit**  
– No permit fee if installed by April 1<sup>st</sup>, 2008.
- **Typical Backflow Prevention Device:**  
*(excluding labour costs)*  
¾" = \$350  
2" = \$800  
4" = \$3500

These costs are estimates and will vary depending on manufacture and type.

## Key Dates

<p><b>Public Open House</b> May 15 2007</p>
<p><b>Initial Survey</b> September 17 2007</p>
<p><b>Initial Survey Report to Town</b> October 1 2007</p>
<p><b>BFPD Installation</b> April 1 2008</p>
<p><b>Initial BFPD Report to Town</b> April 15 2008</p>
<p><b>Annual BFPD Test Results</b> April 15 Annually</p>

## Who can install or inspect my BFPD?

ITEM	FUNCTION	<sup>1</sup> Professional Engineer	<sup>1</sup> Certified Engineering Technologist	<sup>2</sup> Journeyman Plumber	<sup>3</sup> Apprentice Plumber	Fire Sprinkler Fitter	Lawn Irrigation Installer
1	Perform Cross-Connection Survey	X	X	X			
2	Install, Repair, Relocate or Replace Backflow Prevention Device			X	X		
3	Test Backflow Prevention Device	<b>Anyone with a Tester's License as per CAN/CSA-B64.10-94 is permitted.</b>					

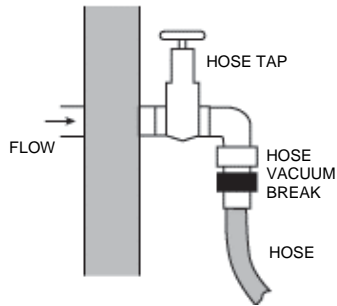
<sup>1</sup> Must be employed by a designated member firm of the Consulting Engineers of Ontario

<sup>2</sup> Must have valid and current Ontario Certificate of Qualification

<sup>3</sup> Required to be a registered Apprentice in Ontario, employed by a Plumbing Contractor and under the direct supervision of a Journeyman Plumber

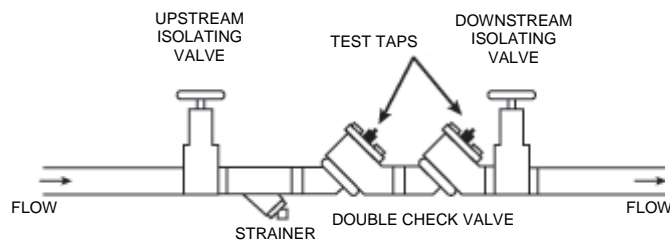
## What does a BFPD look like?

### HOSE VACUUM BREAK



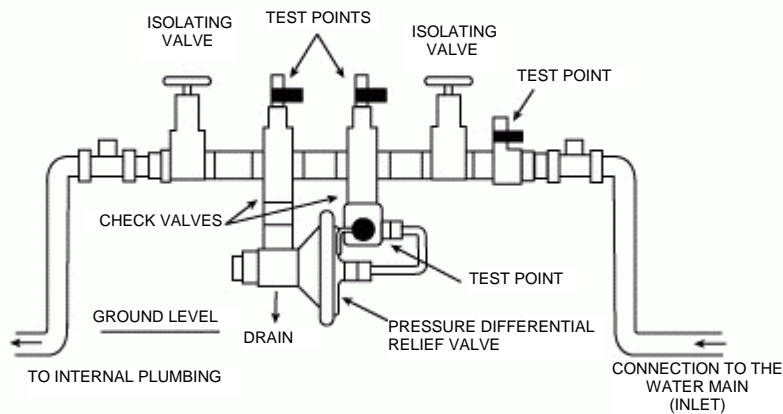
Hose vacuum breakers are small devices fitted downstream from a hose tap in order to prevent back-siphonage and backpressure. They admit air to the water supply system when subjected to back-siphonage. Under backpressure they allow any flow to discharge from the water supply system. Hose vacuum breakers should only be used for low hazard applications such as domestic hose taps used for irrigation or for drink dispensers.

### DOUBLE CHECK VALVE ASSEMBLY



These have a medium hazard rating for both backpressure and back-siphonage situations. They must be factory-made single body devices with fitted test ports. They require annual testing by an Independent Qualified Person (IQP).

### REDUCED PRESSURE VALVE ASSEMBLY



These require a properly sized drainpipe. They are high hazard rated against both backpressure and back-siphonage. They require annual testing by an IQP.