

# Backflow Prevention FAQ

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## **Q1. What is backflow?**

- A. A potable (drinking) water supply can become contaminated. It can happen by accident, through a hazardous connection to the piping system known as a cross connection. Water supply professionals, plumbing contractors, health agencies, and many laypersons know of such hazards - but many do not.

Under certain conditions, the flow of water in a supply line can be reversed, and if this happens when connected to something containing non-potable water or chemical, contaminants can flow backwards into the drinking water supply line, usually unbeknownst to the user.

Water can flow backwards, otherwise known as “*BACKFLOW*”, when the following conditions arise:

- Water pressure on the supply side (street) drops, usually as a result of watermain repairs, a watermain break, or the use of hydrant water for fire fighting. Low water pressure can cause suction on the potable supply side, and without adequate protection, can actually siphon or pull contaminants back with it, otherwise known as “*BACKSIPHONNAGE*”. An example of this would be if a hose were sitting in a mop bucket during a main break, dirty water could be siphoned back into the potable water supply.
- High pressure on the “non-potable” side could also force contaminants into the supply line if the pressure were greater than city water pressure, also known as “*BACKPRESSURE*”. An example of this would be if a *pressure washer* were connected to a water supply without an approved backflow prevention device installed, detergent laden water could be forced back into the potable water supply.

## **Q2. Why is it necessary to have a Backflow Prevention Bylaw in place?**

- A. This bylaw is necessary to protect the potable water supply from incidences of cross-contamination due to backflow. The following example of a recent local occurrence illustrates the necessity of having a bylaw in place.

On Monday, March 7<sup>th</sup>, 2005, the City of Stratford experienced an incidence of backflow from a local car wash that contaminated the City’s water supply. This required an Emergency Water Advisory to be issued by their Medical Officer of Health in which the residents were advised not to drink tap water. In addition, residents were advised not to use the water to bath, wash their hands or give to their pets. This car wash did have a backflow prevention device, however they had installed a bypass, which was connected to a booster pump. The water

emergency lasted a total of 56 hours. City of Stratford staff has indicated that this water emergency cost the City approximately \$100,000 in staff overtime alone. The car wash responsible for the incidence was fined \$75,000 by the Ministry of the Environment in 2006. The overall cost surrounding this incident is not yet available as resolution of claims may take a significant period of time.

**Q3. What steps will be involved in order to comply with the bylaw?**

A. The following 5 steps:

1. In order to determine the degree of hazard posed by a given facility, a qualified plumbing contractor, engineering consultant or in-house professional engineer in a related field must perform an initial cross-connection inspection or survey. This inspection is required to determine what level of protection is required to isolate the premises, (premises being at the location where a municipal water supply first enters the property or building, i.e. near water meter), in the form of a backflow prevention device.
2. Where the highest level of protection is already in place at the premises *or* if the owner chooses to install a Reduced Pressure Principle Assembly, (RP), backflow prevention device to isolate the premises, a cross-connection survey is not required.
3. Once surveys are completed, property owners will be required to install the appropriate backflow prevention device(s) to isolate the premises, as recommended by the results of the survey. A building permit would be required for this installation.
4. Once backflow prevention devices are installed and tested, they must continue to be tested on an annual basis to ensure compliance with the bylaw and test reports must be submitted to the Building Department.
5. Follow-up cross-connection surveys will be performed once every 5 years, unless the highest level of protection is already in place to isolate premises, or no process or operational changes were made.

**Q4. Who does this bylaw apply to?**

A. This bylaw is applicable only to industrial, commercial and institutional property owners as well as owners of multi-residential high-rise buildings with 4 or more stories.

**Q5. What is the deadline for survey completion?**

A. Survey completion deadlines will be prioritized by size of water service from largest to smallest as follows:

<u>Meter Size</u>	<u>Due Date for Survey Submission</u>
4", 3", 2", 1 1/2"	January 31, 2008
1"	March 31, 2008
3/4"	June 30, 2008
5/8"	September 30, 2008

**Q6. What is the installation deadline for backflow prevention devices?**

- A. Installation deadlines will be based upon the hazard rating of your facility, as determined by the survey. Installation deadlines correspond to hazard ratings as follows:

<u>Degree of Hazard</u>	<u>Compliance Schedule</u>
Severe	January 31, 2009
Moderate	June 30, 2009
Minor	December 31, 2009

**Q7. Isn't backflow protection required under the Ontario Building Code?**

- A. Yes. The Ontario Building Code (OBC) does require backflow protection to be in place wherever a potential cross-connection has been identified on a property. However, the OBC does not give authority to plumbing inspectors to re-enter a building for the purposes of inspecting their backflow prevention devices to ensure they are being tested annually. It also does not give them the authority to inspect existing buildings to ensure that adequate backflow protection is in place. The Backflow Prevention Bylaw will give the Inspectors this authority.

**Q8. Who do I call in order to have a survey of my business done or to get my backflow device tested?**

- A. A list of plumbing contractors and engineers with Tester Certification from Brantford is available on the website. This list will be periodically updated. It will be the responsibility of the property owner to ensure that the professional they hire is properly qualified and can provide proof of having performed a minimum of 2 tests over the past year.

**Q9. We have our own in-house maintenance staff. Can they perform any of the functions required under this bylaw?**

- A. Yes. As long as your maintenance staff person has tester certification, they can test and repair your backflow prevention device as required under the bylaw. If they are an engineer or plumber by trade, they can also perform the survey.

**Q10. How long will businesses be given to be in compliance with this bylaw from the date of passing?**

- A. Compliance schedules are prioritized on the basis of water service size, assuming that the larger the service, the greater the risk of contamination to the municipal system due to backflow. Businesses with water services sized 4", 3", 2", and 1½" will have approximately 6 months from the date of the bylaw being passed to have Cross-Connection Surveys completed while businesses with smaller sized services will have a year.

The outcome of the cross-connection survey will determine the degree of hazard a business poses. Businesses categorized as having a SEVERE hazard rating will be required to have the appropriate backflow prevention device installed and tested by January 31, 2009. Businesses categorized as having a MODERATE hazard rating will have until June 30, 2009 and businesses categorized as having a MINOR hazard rating will have until December 31, 2009 to be in compliance.

**Q11. I already have an RP backflow prevention device installed, which gives the maximum protection. Do I still need to have a survey performed?**

- A. No. Since the device you have installed currently provides the highest level of protection, you can forgo the requirement to submit a survey. **NOTE:** You must submit a test report to prove that your RP device is in proper working condition by June 30<sup>th</sup>, 2008.

**Q12. Can I simply choose to install an RP device and avoid the requirement to submit a survey?**

- A. Yes. If you plan to install an RP, the requirement to perform a survey will be waived. Please notify the city of your decision by the applicable survey deadline. **NOTE: Please be informed that this device will cause a drop in your usual water pressure by approximately 10 psi. In addition, RP devices may not be installed in a pit and require adequate drainage capacity.** In order to make an informed decision about bypassing the requirement to perform a survey of your facility by automatically choosing to install an RP device, it is strongly recommended that you consult with a plumbing contractor or engineer with a tester's license

**Q13. What happens when a businesses is unable to comply with the bylaw in the timeframe given for whatever reason?**

- A. The General Manager may authorize that the timeframe for compliance be extended and the owner may be required to enter into a compliance program through a separate agreement.

**Q14. Why are residential properties not required to be in compliance with this bylaw if such a risk of backflow exists?**

A. As residential properties of 3 storeys or less are considered to be of the lowest risk for contamination of the municipal water supply, they are not being incorporated into the bylaw at this time.

**Q15. Will this bylaw require me to install backflow prevention devices anywhere a cross-connection is identified on my property or within my facility?**

A. No. This bylaw stipulates that the property or building being serviced with a water connection be isolated from the municipal supply line with the appropriate backflow prevention device where the water line enters, ie. within 3 feet of the water meter.

**Q16. Where can I find a copy of the bylaw, including forms for submission of surveys, test reports or tester certification?**

A. The bylaw can be found on the City's website and hard copies of the bylaw can be found at City Hall's Environmental Services and Building Departments. Forms can be found in the Appendices of the draft bylaw. WEBSITE: [www.brantford.ca](http://www.brantford.ca)

**Q17. Who should I contact in the City if I have any comments or questions concerning the proposed bylaw?**

A. For technical questions regarding your facility survey, or Building Code concerns, contact:

Building Department	PHONE:	519-759-4150.
	FAX:	519-752-1874

For questions/comments regarding compliance with bylaw, contact:

Environmental Services Department	PHONE:	519-759-1350
	FAX:	519-752-6775

OR,

Mail comments or inquiries to: City Hall  
100 Wellington Square  
P.O. Box 818  
Brantford, Ontario  
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ATTN: Selvi Kongara, P.Eng.,  
Water & Wastewater Engineer