



Frequently Asked Questions & Answers for Backflow Prevention Program (Updated: May 30, 2016)

1. When did the Backflow Prevention By-law come into effect?

The Backflow Prevention By-law 2007-142 came into effect on June 26, 2007. And the revised By-law 2012-27 came into effect on February 14, 2012.

2. What is Markham's Backflow Prevention Program?

Markham's Backflow Prevention By-law and Program was implemented across Markham's drinking water system to minimize potential drinking water contamination.

The program aims to protect both Markham's drinking water supply and the buildings' occupants from water contamination caused through backflow incidents at cross connections. The program is to assure due diligence and duty of care under the [Safe Drinking Water Act](#) (link).

The program involves identifying cross connections (deemed a risk) and removing or isolating them (called backflow prevention) at the buildings or facilities of water customers. There is a [list of source of pollution/contamination](#) (PDF) and [types of building/facility](#) (PDF).

The program also administers and regulates the selection, installation, testing, and maintenance of backflow preventers.

3. Who does the By-law apply to?

The By-law applies to the following building categories of Markham's water customers:

- All industrial, commercial, and institutional properties in Markham;
- All multi-residential buildings and structures (For example: Condo buildings, Rental apartment buildings, townhouse complexes with bulk water meters, etc.)
- Residential properties with connections to fire protection or lawn sprinkler or any *auxiliary water supply systems.

(Note: *auxiliary water supply systems refer to private wells, grey water system, etc.).

4. Can a registered Qualified Person carry out all types of backflow prevention work?

A registered Qualified Person can do specific backflow prevention work in accordance to

his/her qualification. Not all registered Qualified Persons can do all types of backflow prevention work.

Please be advised that the list of registered Qualified Person posted by the City specifies what type of backflow prevention work each qualified person can do.

5. **What is backflow?**

Normal water flow goes from the City's pressurized water supply system to the consumer's plumbing system. Backflow is the reversal of the normal direction of flow. Backflow may occur due to either back siphonage or back pressure.

6. **What is a back siphonage?**

Back siphonage is backflow caused by a negative pressure (For example: a vacuum or partial vacuum) in a city's water supply system. It is similar to drinking water through a straw. Back siphonage can occur when there is large water demand for firefighting, high velocities in pipe lines, watermain break or repairs that are lower than a service point.

7. **What is back pressure?**

Back pressure means that private water pressure is greater than the municipal water supply pressure. It can happen when there is a connection to a non-portable water supply operating at a higher pressure than the municipal water supply system. Higher water pressure can be created by booster pumps, thermal expansion in boilers, elevated piping, etc.

8. **What is cross connection?**

A cross connection means any actual or potential connection between a potable water system and any source of pollution or contamination. Cross connection includes any bypass, jumper connection, removable section of pipe, swivel, or changeover device and any other temporary or permanent connecting arrangement through which backflow may occur.

9. **What happens after backflow occurs?**

When backflow occurs, any contaminants that had a chance to enter the water supply will start to flow towards any point of use (plumbing fixtures inside the building, other businesses/buildings connecting to the water supply system). The degree of hazard to health is dependent on the type and amount of contaminant, the situation of water use points, whether or not a protective device is in place, etc.

10. **What does it mean to be in compliance with By-law?**

To be in compliance with the By-law, a property owner has to **complete all backflow prevention activities** (For example: survey, testing, and device upgrade) required for their property in the required time frame and frequency.

11. How is the By-law enforced?

- Markham is encouraging applicable property owners to **comply with the By-law**. Property owners should regularly log into their backflow prevention account at the City’s “Backflow Prevention Program Online Services” website to ensure that all backflow prevention work required for their property are completed.
- Those non-compliant or partial compliant property owners will receive Markham’s *Order to Comply* notices. Each notice will indicate the compliance due date.
- The “Backflow Prevention Compliance Processing Fee” will apply to those property owners who have received the Order to Comply notice, but failed to comply within a compliance timeframe. In addition, necessary legal actions will be taken on those *non-compliant and partial compliant* property owners.

12. Do I need to apply for a permit if I need to install a backflow preventer?

There are two categories of backflow preventer: one is testable and the other is non-testable. Please consult with your Qualified Person for appropriate application of testable and non-testable backflow preventers.

A building permit is required for installation, replacement, or relocation of a **testable** backflow preventer.

13. What kind of documentation do I need to apply for Building Permit?

The following documents are required for a “backflow preventer” building permit application:

- Plumbing Data Form;
- Cross Connection Control Survey Report (required for all buildings excluding houses).

Please contact the City of Markham’s [Building Department](#) or call 905.475.4870 for this information.

14. Who should I contact if I have questions regarding Backflow Prevention Program?

You can email backflow@markham.ca or call 905.475.4862.

15. What is premise isolation?

Premise isolation means backflow prevention provided at the municipal water connection to a building or facility. Usually, the premise isolation backflow preventer is installed immediately downstream of the City’s water meter and meter by-pass. In the case of an un-metered fire service, the premise isolation backflow preventer must be installed on the customer’s property, upstream of any sprinkler system, stand pipe or private hydrant.

16. What is area isolation?

Area isolation means backflow prevention provided at a **section** of water piping within a building or facility which has **potable and non-potable connections**.

Usually, the area isolation backflow preventer is installed at the water connection to an area in the building or a unit in a facility. However, its downstream water piping must not be interconnected with its upstream water piping.

17. What is zone isolation?

Zone isolation means backflow prevention provided at a **section** of water piping within a building or facility **which has only non-potable connections**.

Usually, the zone isolation backflow preventer is installed at the water connection to a zone in the building, which only has non-potable connections. However, its downstream water piping must not be interconnected with its upstream water piping.

18. What is source isolation or fixture isolation?

Source isolation or fixture isolation means backflow prevention provided at the water connection to a fixture or appliance within a building or facility.

Usually, the source isolation or fixture isolation backflow preventer is installed right at the water connection point to a fixture or appliance.

19. Can I just install premise isolation? Or do I need to install any premise isolation?

By installing premise isolation, backflow is only prevented from entering into the municipal drinking water supply. However, businesses and employees within the building are not protected from potential contamination due to backflow.

Markham's program requires installing a source isolation or zone isolation for all types of hazard classification. Also, for premises with a "severe" or "moderate" hazard classification, premise isolation is required on top of any source or zone isolations.

A cross connection control survey report for each facility is still required under the By-law.

20. What is a cross connection control survey? How do I complete the related report?

A cross connection control survey shall be carried out starting at the water meter to all the plumbing within a facility as per CSA standards and Ontario Building Code. It should identify all cross connections located within the facility. The hazard level of each cross connection should be assessed and existing backflow protection of each cross connection should be identified as well. If no backflow prevention exists or the existing backflow protection is not acceptable, the acceptable backflow protection approach should be recommended.

Please refer to the instruction on the “Online Services Website” (see section above) for the completion of a [Cross Connection Control Survey Report](#) (PDF)

21. What is backflow preventer test and inspection? How do I complete the related report?

A backflow preventer is a mechanical device and has internal seals, springs, and moving parts that are subject to fouling, wear, or fatigue. All backflow preventers have to be tested and inspected periodically to ensure that they are in good working conditions and can function correctly.

Please refer to the instruction on the “Online Services Website” (see section above) for the completion of a [Backflow Preventer Testing and Inspection Report](#) (PDF)

22. What is device upgrade implementation? How do I complete the related paper?

Device upgrade implementation refers to installation of new backflow preventers, repair, replacement, or relocation of the existing backflow preventers within a facility. Markham’s Backflow Prevention Program requires the property owners to rectify all backflow prevention deficiencies identified on their Cross Connection Control Survey Reports or Backflow Preventer Testing & Inspection Reports.

Please refer to the instruction on the “Online Services Website” (see section above) for the completion of a [Device Upgrade Implementation Report](#) (PDF)

23. As a registered Qualified Person with the City, how do I update my registration?

- Please be advised that City of Markham is not responsible for issuing or renewal of any certifications required for your registration to do backflow prevention business in Markham. You should obtain and renew your certifications with the related parties or agencies.
- Once you get your renewed certifications, you can log into your account at City’s “Backflow Prevention Program Online Services” website by clicking any of those functions (i.e. submit a Backflow Preventer Test & Inspection Report; submit a Cross Connection Control Survey Report; submit a Device Upgrade Implementation Report).
- On the “Current Registration” webpage, use the “Upload Attachments” function to upload your renewed documents. Then, click “Save & Exit” button to submit them.
- After the receipt of your uploaded documents, it will take the City one to two business days to process them and update the City’s record. You will see your registration update during your next visit to the “Online Services” website.

24. My contact information has changed. How do I update City records?

You can submit your updates through City’s “Backflow Prevention Program Online

Services” website as detailed below.

A Property Owner

- Log into your facility account at the website by clicking the “Facility Owner” function.
- On the “Facility Owner’s Information” webpage, enter your updates into the “comments” area. Then, click “submit comments” button.

A Registered Qualified Person

- Log into your registration account at the website by clicking any of those functions (i.e. Submit a Backflow Preventer Test & Inspection Report; Submit a Cross Connection Control Survey Report; Submit a Device Upgrade Implementation Report).
- On the “Current Registration” webpage, upload your documents to the system, or enter your updates into the “comments” area. Then, click “Save & Exit” button to submit them.

After your submission, it will take the City one to two business days to process your comments and update the City’s records. Those updates will appear on your next visit to the “Online Services” website.