By-law 2017-121

Backflow Prevention and Cross Connection Control

CONSOLIDATED BY-LAW

A By-law of The Corporation of the City of Barrie to regulate Drinking Water Protection: Backflow Prevention and Cross Connection Control and to repeal By-law 2010-102.

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BY-LAW NUMBER 2017-121

A By-law of The Corporation of the City of Barrie to regulate Drinking Water Protection: Backflow Prevention and Cross Connection Control and to repeal By-law 2010-102.

WHEREAS Section 9 of the Municipal Act, R.S.O. 2001, S.O. 2001, as amended ("the Municipal Act, 2001"), provides that a municipality has the capacity, rights, powers and privileges of a natural person for the purpose of exercising its authority under the Act;

AND WHEREAS Section 10 of the Municipal Act, 2001, provides that Sections 8 and 11 shall be interpreted broadly so as to confer broad authority on municipalities to (a) enable municipalities to govern their affairs as they consider appropriate and, (b) enhance their ability to respond to municipal issues;

AND WHEREAS Section 11 (4) of the Municipal Act, 2001, S.O. 2001, provides that a single-tier municipality may pass By-laws respecting matters within the spheres of jurisdiction set out therein including, inter alia, public utilities;

AND WHEREAS Section 80 (1) of the Municipal Act, 2001, S.O. 2001, provides that a municipality may enter onto land to which it supplies a public utility to inspect, repair, alter or disconnect the service pipe or wire, machinery, equipment and other works used to supply the public utility;

AND WHEREAS Section 11 and Section 19 of the Safe Drinking Water Act, requires every owner and operator of a municipal drinking water system to ensure that all water provided by the system meets the requirements of drinking water quality standards and that the drinking water system is operated in accordance with the Safe Drinking Water Act;

AND WHEREAS by motion 17-G-244 it is deemed expedient that the Council of The Corporation of the City of Barrie enact a By-law to establish authority for regulating cross connections for the prevention of drinking water contamination.

NOW THEREFORE the Council of The Corporation of the City of Barrie enacts as follows:

SHORT TITLE

This By-law shall be known as and may be cited as the "Backflow Prevention By-law".

1.0 DEFINITIONS

1.1 For the purposes of this By-law, the following terms shall have the corresponding meanings:

a) "agricultural" shall mean the use of land or water, building or structures for the purpose of the growing of field crops, flower gardening, berry crops, tree crops, nurseries, aviaries, apiaries or farms for the grazing, breeding, raising, boarding or training of livestock or fish, or any other similar uses carried on in the field of general agriculture and including the sale of such produce, crops, fish or livestock on the same lot;

b) "Authorized Functions List" means the list of functions and the persons with the required qualifications to carry out such functions as set out as Schedule "A" of this By-law;

c) "auxiliary water supply" means, when applied to property, any water supply on or available to the property other than the primary potable water supply for the property;

d) "backflow" means the flowing back or reversal of the normal direction of the flow;

e) "backflow preventer" means a device or method that prevents backflow in a water distribution system;

f) "building" shall have the same meaning as set out in the Building Code Act, S.O. 1992, cha. 23, as amended;

g) "Building Code" means the regulations made under Section 34 of the Building Code Act being O.Reg 332/12 as amended, or any successor thereof;

i) “City” means The Corporation of the City of Barrie and includes its employees, servants and agents;

j) “commercial” means lands, buildings or structures that is deemed by the City to be used for the sale or provisions of goods and services to the general public which does not include Industrial and not excluding additional residential usage;

k) “cross connection” means any actual or potential connection between a potable water system and any source of pollutant or contamination;

l) “cross connection control specialist” means an individual who is recognized as such, shall have completed and passed an Ontario Water Works Association endorsed Cross Connection Control Specialist Course or equivalent at an accredited school or college and shall have a current certificate issued by the accrediting association;

Note: (The terms “cross-connection control specialist” and tester are often used interchangeably)

m) “cross connection survey” means a report which shall include existing backflow preventers, cross connections discovered, corrective measures and recommendations on the prescribed City of Barrie Cross Connection Survey Form; as amended from time to time;

n) “CSA” means the Canadian Standards Association;

o) “CSA Standard” means the document(s) entitled CAN/CSA B64.10/B64.10.1 Manual Selection and installation of backflow preventers/Maintenance and field testing of backflow preventers; as amended from time to time;

p) “fire service” means a pipe and its appurtenances that are connected to a source of water and that are located on a property:
   i. between the source of water and the base of the riser of a water-based fire protection system;
   ii. between the source of water and inlets to foam making systems;
   iii. between the source of water and the base elbow of private fire hydrants or monitor nozzles;
   iv. as fire pump suction and discharge piping not within a building; or
   v. beginning at the inlet side of the check valve on a gravity or pressure tank.

q) “individual residential dwelling unit” means a single room or series of rooms of complementary use, operated under a single tenancy, for residential occupancy, and includes dwelling units, individual guest rooms in motels, hotels, boarding houses, rooming houses and dormitories;

r) “industrial” means lands, buildings or structures that is deemed by the City to be used for assembling, fabricating, manufacturing, production, processing, repairing, supplying, storing or selling of Industrial goods and materials to the general public which does not include Commercial and not excluding additional residential usage;

s) “institutional” means a building or part of a building used for non-commercial, non-profit purposes by an organized body, religious group or society such as a public hospital, library, convent or similar use;

t) “minor hazard (MH)” means any type of cross-connection or potential cross connection that involves a substance that constitutes only a nuisance and that results in a reduction in only the aesthetic qualities of the water as defined by the CSA Standard; as amended;

u) “moderate hazard (MoH)” means any minor hazard (MH) connection that has a low probability of becoming a severe hazard. This category includes, but not limited to, connections involving water where the aesthetic qualities of the water have been reduced and, under certain conditions, can create a danger to public health as defined by the CSA Standard; as amended;

v) “multi-residential” means lands, buildings or structures that are used for residential purposes and have four or more self-contained units;
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Backflow Prevention and Cross Connection Control

w) "municipal drinking water system" means the City's system of works, excluding plumbing, that is established for the purpose of providing users of the system with drinking water, and that includes:

i. Anything used for the collection, production, treatment, storage, supply or distribution of water;

ii. Anything related to the management of residue from the treatment process or the management of the discharge of a substance into the natural environment from the treatment system; and

iii. A well or intake that serves as the source or entry point of raw water supply for the system.

x) "owner" shall include any person or any firm or corporation that is the registered owner of the property under consideration or any agent thereof, a person entitled to a limited estate in land, a trustee in whom land is vested, a committee of the estate of a mentally incompetent person, an executor, an administrator or a guardian;

y) "person" includes any individual, Corporation, partnership, company, association or party and the heirs, executors, administrators, or other legal representative of such person, to whom the context can apply according to law; shall include any group of persons comprising a society or other organization and shall include the plural wherein the context requires. Wherever the word "he" or "him" is used, it shall mean and include the feminine or neuter gender wherever the context so requires;

z) "plumbing system" means a system for water and wastewater not on the City right of ways and easements, separate from the municipal drinking water system as defined in the Building Code; as amended;

aa) "potable water" means water that is fit for human consumption;

bb) "premise isolation" means isolation provided at the entrance to a building, structure, or property from the municipal drinking water system;

c) "private service" means the portion of the water service pipe located on private property;

dd) "property" means any land within the City of Barrie and includes all buildings and structures;

e) "qualified person" means a person whom meets the following requirements:

i. The person is registered with the City's Backflow Prevention Program's "Prequalification Program"; and

ii. The person holds a valid and current Certificate of Achievement in Cross Connection Control endorsed by the Ontario Water Works Association (OWWA) or equivalent as approved by the City's Water Operation Branch; and

iii. The person possesses a current calibration certificate as required under the "Prequalification Program" for the testing equipment to be employed; and

iv. The person is authorized to perform the specified task as indicated in the “Authorized Functions List” as set out in Schedule “A” of this By-law, as amended from time to time;

ff) "severe hazard (HH)" means any type of cross-connection or potential cross connection that has additives or substances that, under any concentration, can create a danger to health as defined by the CSA Standard; as amended;

gg) "source isolation" means isolation of the water located within or having flowed through a source or potential source of contamination within a building or structure including a device, machine, water system or the like, from any potable water system;

hh) "structure" means anything constructed or built permanently or temporarily which is provided with a source of potable water;

ii) "Test Report" means an inspection and testing report of a backflow preventer containing the make, model, serial number, size, type, installation date, location and installation address and the test results. The report must also contain information related to the qualified person. This report shall be completed on the prescribed City of Barrie "Backflow Prevention Device Test Report Form, F16-16", as amended from time to time;
“Test Tag” means a tag containing the make, model, serial number, size type, location, installation date and address as well as history of a backflow preventer. This tag shall be completed and updated annually by a qualified person on the prescribed City of Barrie “Backflow Test Inspection Tag, F16-17” and/or “Backflow Prevention Single Test Tag, F16-29”; as amended from time to time.

“water service pipe” means a pipe on the property that conveys potable water from the municipal drinking water system to the inside of the building or structure; and

“zone isolation” means the isolation of the water located within an area of a building or structure from any potable water system located within such building or structure.

2.0 INTERPRETATION

2.1 In this By-law:

a) words importing the singular number or the masculine gender only, include more persons, parties or things of the same kind than one and females as well as males and the converse;

b) a word interpreted in the singular number has a corresponding meaning when used in the plural; and

c) "subsection" when used without reference to another section, refers to a subsection contained in the same section in which the phrase is used.

2.2 It is declared that if any section, subsection or part or parts thereof be declared by any court of law to be bad, illegal or ultra vires, such section, subsection or part or parts shall be deemed to be severable and all parts hereof are declared to be separate and independent and enacted as such.

3.0 APPLICATION OF BY-LAW

3.1 This By-law applies to all properties connected to the municipal drinking water system.

4.0 GENERAL PROVISIONS

4.1 In addition to any other provisions of this By-law, the City may at any time order an owner to conduct tests, provide reports and undertake any other measures required for the prevention of backflow or protection from a cross connection.

4.2 Where a time frame is prescribed in this By-law, the City may extend the time for compliance at its discretion.

4.3 All cross connection surveys and test reports are to be submitted to the City.

4.4 Schedule “A” shall form part of this By-law.

5.0 BACKFLOW PREVENTION AND PROTECTION FROM CONTAMINATION

5.1 No owner, shall connect, cause to be connected, or allow to remain connected to a plumbing system which is connected to the municipal drinking water system or any other potable water system any piping, fixture, fitting, container, appliance, vehicle, machine or the like, in a manner which may under any circumstances, allow any liquid including but not limited to water, untreated or otherwise, waste water, or any source of pollution or any other liquid, chemical, gas or other substance to enter the municipal drinking water system or any other potable water system.

5.2 In accordance with the provisions of this By-law, every owner of property to which this By-law applies shall ensure that a Backflow Preventer is installed in respect of source isolation and/or zone isolation in every building or structure where a municipal drinking water system or other potable water exists.

5.3 No owner shall connect, cause to be connected, or allow to remain connected; any auxiliary water supply to the municipal drinking water system except as otherwise defined in the Building Code.

5.4 In accordance with the provisions of this By-law, every owner of industrial, commercial, institutional, agricultural, multi-residential property shall ensure a testable Backflow Preventer is installed in respect of premise isolation.
6.0 REQUIRED CROSS CONNECTION SURVEYS

6.1 Every owner of industrial, commercial, institutional, agricultural, multi-residential property shall cause to be carried out a cross connection survey of the plumbing system associated with his or her property and shall ensure that such survey is undertaken by qualified person pursuant to the Authorized Functions List (see Schedule "A") at the owners expense.

6.2 The cross connection survey shall be in the prescribed City of Barrie cross connection survey form (F16-15); as amended from time to time, and shall be completed as a report, which shall include existing Backflow Preventers, cross connections discovered, corrective measures, recommendations and a schedule of work to be completed.

6.3 A cross connection survey shall be completed at a frequency of:
   a) every 5 years; and
   b) upon change of ownership or change of use or as otherwise required by the City.

6.4 Upon identification of Severe Hazard, the qualified person as prescribed in the Authorized Function List and/or owner, within 24 hours shall notify the City in writing.

6.5 An individual residential dwelling unit within an industrial, commercial, institutional, agricultural, multi-residential property is exempt from a cross connection survey unless a severe hazard is known and/or brought to the attention of the qualified person.

7.0 APPLICATION OF STANDARDS AND SELECTION OF METHODS

7.1 Except as otherwise set out in this By-law, the installation, maintenance, and field testing of Backflow Preventers shall be in accordance with the CSA Standard.

7.2 The Backflow Preventer whether it be for premise isolation, source isolation or zone isolation shall be determined by a professional engineer or journeyman plumber using the CSA Standard, as amended or any successor thereof.

7.3 Despite Section 5.2 of this By-law, where a source isolation backflow preventer has been previously installed by the manufacturer of equipment, the cross connection is required to be reviewed by qualified person as prescribed in the Authorized Functions List to determine if the Backflow Preventer meets the selection specifications. These cross connections are to be clearly indicated on the cross connection survey.

8.0 INSTALLATION OF BACKFLOW PREVENTERS

8.1 Every person installing a Backflow Preventer shall ensure that:
   a) such device is installed in accordance with acceptable engineering practices and the requirements of the Building Code, this By-law, and the CSA Standard;
   b) such device is located in such a manner so that in the event of backflow the device prevents contamination of the municipal drinking water system and any other potable water system;
   c) where such device is installed in respect of premise isolation, such device is located within a maximum of 3.0 meters downstream of the water meter, except where circumstances require the device to be installed in an alternative location and such location is to the satisfaction of the City;
   d) where such device is installed in respect of premise isolation, all piping between the water meter and such device shall have no connections and is clearly and permanently labelled "no connections permitted" unless otherwise directed by the City; and
   e) where such device is installed in respect of source or zone isolation, all piping between the point of potential contamination and the point at which the device is located is clearly and permanently labelled "non-potable water" and no new connection shall be permitted unless authorized by the City.

8.2 Every owner of property upon which a Backflow Preventer is installed shall ensure that such device is maintained in proper working order at all times.

8.3 Where in the opinion of the City, a risk of possible contamination of the municipal drinking water system exists, an owner on notice from the City, shall install premise isolation in addition to any other source of protection devices on the premise.
9.0 MAINTENANCE AND FIELD-TESTING OF CROSS CONNECTION CONTROL METHODS

9.1 Every person who tests a Backflow Preventer shall carry out such testing in strict accordance with this By-law and the CSA Standard.

9.2 Every person who tests a Backflow Preventer shall:
   a) be a qualified person, in addition to meeting the requirements listed on the Authorized Functions List in Schedule "A" of this By-law;
   b) within 14 days of carrying out such a test, provide a legible and complete Test Report to the City;
   c) upon completing such test, complete and affix a standard City of Barrie cross connection control Test Tag to the Backflow Preventer or immediately adjacent to the device on the piping connected thereto; and
   d) upon finding that such device is malfunctioning or otherwise not maintained in proper working order, immediately notify the owner of the property and the City in writing of such condition.

9.3 Every owner who has a Backflow Preventer located on his or her property shall ensure that:
   a) such device is tested by a Cross Connection Control Specialist when it is first installed and annually thereafter and/or upon request by the City and also when it is cleaned, repaired, overhauled, or relocated;
   b) when such device is tested that a Test Report is provided to the City within 14 days; and
   c) in the event that such device is malfunctioning or otherwise not in proper working order, the device is immediately repaired or replaced with an equivalent type of Backflow Preventer, and the City is notified.

10.0 BACKFLOW TEST EQUIPMENT MAINTENANCE

10.1 Where required by CSA Standard B64.10.1 as amended; all equipment used to test Backflow Preventers shall be verified and/or calibrated for accuracy annually.

10.2 Proof of such verification and/or calibration shall be presented to the City upon request.

11.0 REMOVAL OF BACKFLOW PREVENTION DEVICES PROHIBITED

11.1 No person shall remove a Backflow Preventer required under this Bylaw, or any part thereof, after it has been installed, and no owner of a property where such a Backflow Preventer is installed shall cause or permit the removal of such a device, unless such removal is:
   a) to facilitate the repair of the device, with the device replaced immediately after the repair is carried out;
   b) to replace the device with another one that meets or exceeds the provisions of this By-law;
   c) a result of the cross connection to which the Backflow Preventer was isolating has been permanently removed; or
   d) to facilitate the disconnection of the private service from the municipal drinking water system in accordance with the written approval from the City, or any combination of the foregoing.

11.2 Whenever a Backflow Preventer required under this By-law has been permanently removed or the type of device has been changed, the owner of the property must notify the City in writing immediately of such change.

12.0 INSPECTION FOR CROSS CONNECTIONS –ACCESS

12.1 The City shall be permitted access, within 24 hours of providing notice, to any property that are connected to the municipal drinking water system for the purpose of performing inspections to verify compliance with this By-law.
12.2 Where in the opinion of the City, a risk of possible contamination of the municipal drinking water system exists; the City shall be permitted immediate access to any property that are connected to the municipal drinking water system. In such instances, the City may require a routine cross connection inspection of the property to be performed by a qualified person as described in the Authorized Functions List (see Schedule "A"). Should an unsafe and/or undocumented cross connection be found during said inspection, the cost of the inspection shall become the responsibility of the owner.

13.0 ORDER TO CORRECT CROSS CONNECTION

13.1 Should a condition be found to exist which is contrary to any section of this By-law, or if the owner to whom the City has issued a notice fails to comply, the City, at its sole discretion may:

a) Give notice to the owner to correct the fault at their expense within a specified time period and if the notice is not complied with, the City may then discontinue the supply of municipal water to the plumbing system; and/or

b) Issue an unsafe order under ‘unsafe requirements’ in accordance with the Building Code Act if a condition exists that could be hazardous to the health or safety of persons in the normal use of the building, persons outside the building or persons whose access to the building has not been reasonably prevented; and/or

c) Without notice to the owner, discontinue the supply of municipal water to the plumbing system, where the City, at its discretion, has determined that an immediate severe hazard exists that could result in contamination of the municipal drinking water system that may endanger public health or safety.

14.0 PERMITTED QUALIFIED PERSONS AND AUTHORIZED FUNCTIONS

14.1 Only those Qualified Persons with the required qualifications described on the Authorized Functions List (see Schedule "A") shall carry out the corresponding functions set out in such list.

14.2 The City administers a registration program for Qualified Persons listed in the Authorized Functions List (see Schedule "A").

14.3 No Qualified Person listed on the Authorized Functions List (see Schedule "A") shall carry out any of the corresponding authorized functions unless the Qualified Person has registered with the City, provided all requested documentation to the City, paid the applicable fee and received a City registration number, all in accordance with the Table set out in Schedule B.

14.4 No Qualified Person shall submit any documentation to the City as part of the registration process that contains inaccurate or false information.

14.5 The registration with the City referred to in subsection 14.3 is an annual requirement.

14.6 The City may suspend or revoke a Qualified Person’s designation within the City’s Backflow Prevention Program, as described in the “Backflow Qualified Person Policy”; as amended from time to time.

15.0 MAINTENANCE OF FIRE SERVICE MAINS & TEMPORARY CONNECTIONS

15.1 No person shall connect, cause to be connected, or allow to remain connected, any piping, fixture, fitting, container or appliance to a City owned, or private fire hydrant in a manner which, under any circumstances may allow water, wastewater or any liquid or substance of any kind to enter the municipal drinking water system.

15.2 No connection for water supply, other than a fire protection system, shall be made to a fire protection piping system.

15.3 All private fire hydrants are the responsibility of the property owner and must be installed and maintained according to:

a) City of Barrie Water Transmission and Distribution Polices and Design Guidelines; as amended from time to time;

b) The Ontario Fire Code as amended;

c) The Building Code as amended; and

d) NFPA 24 - Installation of Private Fire Service Mains and Their Appurtenances as amended.
16.0 IMPLEMENTATION AND COMPLIANCE

16.1 Installation of Backflow Preventers shall occur within the timeframes below, for the degree of hazard:

<table>
<thead>
<tr>
<th>Degree of Hazard</th>
<th>Compliance Date</th>
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<tr>
<td>Severe</td>
<td>No later than 30 calendar days from the date of identification of the hazard as severe</td>
</tr>
<tr>
<td>Moderate and Minor</td>
<td>No later than 90 days from the date of notification of the hazard as moderate or minor</td>
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</table>

16.2 Cross Connection Surveys as required in Section 6 of this By-law shall be submitted to the City within 60 calendar days of request of survey.

17.0 ENFORCEMENT

17.1 The By-law shall be enforced by a building inspector employed by the City of Barrie; or any person appointed by the Chief Building Official; any Water Operations Staff or any person appointed by the Manager of Water Operations; or any Municipal By-law Enforcement Officer of the City of Barrie.

18.0 FEES

18.1 All user fees that may apply to this By-law are non-refundable and are indicated in the City of Barrie's Fees By-law 2016-011; as amended.

19.0 PENALTY

19.1 Every person who contravenes any of the provisions of any section of this By-law and every Director or Officer of a Corporation who knowingly concurs in the contravention of a By-law by the Corporation is guilty of an offence under the provisions of the Municipal Act 2001, s 425 (1).

19.2 For the purpose of continuous offences, every person who contravenes any provision of this By-law and every Director or Officer of a Corporation who knowingly concurs in the contravention of a By-law by the Corporation is guilty of an offence and liable on conviction to a penalty not exceeding $10,000, exclusive of costs under the provisions of the Municipal Act 2001, s. 429 (1) (3) as amended. Despite paragraph 1, the total of all daily fines for the offence is not limited to $100,000.

19.3 For the purpose of multiple offences, every person who contravenes any provision of the by-law and every Director or Officer of a Corporation who knowingly concurs in the contravention of a By-law by the Corporation is guilty of an offence and liable on conviction to a penalty not exceeding $10,000, exclusive of costs under the provisions of the Municipal Act 2001, s. 429 (1) (3) as amended. Despite paragraph 1, the total of all daily fines for the offence is not limited to $100,000.

20.0 ENACTMENT

20.1 THAT By-Law 2010-102 governing Backflow Prevention and Cross Connection Control be repealed.

20.2 THAT this By-law shall come into force and effect on the date of passage.

READ a first and second time this 6th day of November, 2017.

READ a third time and finally passed this 6th day of November, 2017.

THE CORPORATION OF THE CITY OF BARRIE

“ORIGINAL SIGNED”

MAYOR – J.R. LEHMAN

“ORIGINAL SIGNED”

ACTING CITY CLERK – WENDY COOKE
## AUTHORIZED FUNCTIONS LIST

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<tbody>
<tr>
<td>1.</td>
<td>Carry out a Cross Connection Survey required under this By-law</td>
<td><strong>YES</strong></td>
<td><strong>YES</strong></td>
<td><strong>YES</strong></td>
<td>NO</td>
<td>Regarding a Fire Protection Process System Only</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td>2.</td>
<td>Test/Repair a Backflow Preventer required under this By-Law</td>
<td><strong>YES</strong></td>
<td><strong>YES</strong></td>
<td><strong>YES</strong></td>
<td><strong>YES</strong></td>
<td>Within a Fire Protection Process System Only</td>
<td><strong>YES</strong></td>
<td>Within a Municipal Drinking Water System Only</td>
<td><strong>YES</strong></td>
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**Footnotes:**

1. Required to be under the direction of a Professional Engineer  
2. Required to be employed by a Plumbing Contractor  
3. Required to be employed by a Plumbing Contractor and under the direct supervision of a Journeyman Plumber (in-house)  
4. Required to be employed by a Sprinkler and Fire Protection Contractor  
5. Required to be employed by a Sprinkler and Fire Protection Contractor and under the direct supervision of a Journeyman Sprinkler and Fire Protection Installer (in-house)  
6. Required to be employed by City of Barrie Water Operations Branch  

For the purposes of Schedule A, “CCCS Certificate” mean a Cross Connection Control Specialist Certificate.