



THE CORPORATION OF THE CITY OF WATERLOO

BY-LAW NO. 2018- 026

BY-LAW TO REGULATE THE SUPPLY OF WATER AND
TO PROHIBIT THE IMPAIRMENT OF PUBLIC HEALTH BY
ENSURING THAT THE PUBLIC WATER SUPPLY IS NOT
COMPROMISED DUE TO BACKFLOW RESULTING FROM
CROSS CONNECTIONS

WHEREAS Section 11(2)(6) of the *Municipal Act, 2001*, S.O. 2001, c.25, as amended, authorizes a municipality to pass By-laws respecting the health, safety and well-being of persons;

AND WHEREAS Section 11(3)(4) of the *Municipal Act, 2001*, S.O. 2001, c.25, as amended, authorizes a municipality to pass By-laws respecting public utilities;

AND WHEREAS Section 80(1) of the *Municipal Act, 2001*, S.O. 2001, c.25, as amended, authorizes a municipality, at reasonable times, to enter on 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 or to inspect, repair, replace or alter a public utility meter;

AND WHEREAS Section 80(2) of the *Municipal Act, 2001*, S.O. 2001, c.25, as amended, authorizes a municipality to, for the purposes of s. 80(1), shut off or reduce the supply of the public utility to the land;

AND WHEREAS Section 80(3) of the *Municipal Act, 2001*, S.O. 2001, c.25, as amended, authorizes the municipality to enter on the land to shut off the supply of the public utility; to remove any property of the municipality or to determine whether the public utility has been or is being unlawfully used, if a customer discontinues the use of a public utility on land or a municipality lawfully decides to cease supplying the public utility to land;

AND WHEREAS Section 82(1) of the *Municipal Act, 2001*, S.O. 2001, c.25, as amended, states that a municipality is not liable for damages caused by the interruption or reduction of the amount of a public utility supplied to a municipality or to the land of any person as a result of an emergency or a breakdown, repair or extension of its public utility if, in the circumstances, reasonable notice of its intention to interrupt or reduce the supply is given;

AND WHEREAS Section 391 of the *Municipal Act, 2001*, S.O. 2001, c.25, as amended, authorizes the municipality to impose fees or charges on persons for services or activities provided or done by or on behalf of it, for costs payable by it for services or activities provided or done by or on behalf of any other municipality or any local board and for use of its property including property under its control

AND WHEREAS Section 445 of the *Municipal Act, 2001*, S.O. 2001, c.25, as amended, states that if a municipality is satisfied that a contravention of a By-law of the municipality passed under this or any other Act has occurred, the municipality may make an order requiring the person who contravened the By-law or who caused or permitted the contravention or the owner or occupier of the land on which the contravention occurred to do work to correct the contravention.

AND WHEREAS Section 446 of the *Municipal Act, 2001*, S.O. 2001, c.25, as amended, states that if a municipality has the authority under this Act or under a By-law under this or any other Act to direct or require a person to do a matter or thing, the municipality may also provide that, in default of it being done by the person directed or required to do it, the matter or thing shall be done at the person's expense.

NOW THEREFORE THE MUNICIPAL COUNCIL OF THE CORPORATION OF THE CITY OF WATERLOO ENACTS AS FOLLOWS:

1.0 CITATION

This By-law shall be known as the "**Backflow Prevention By-law**" of The Corporation of the City of Waterloo

2.0 DEFINITION

For the purposes of this By-law:

- 2.1 "accredited organization" means a governing body that certifies individuals in the field of backflow prevention, including but not limited to, the Ontario Water Works Association (OWWA), and the American Society of Sanitary Engineering (ASSE);

- 2.2 “ASSE” means the American Society of Sanitary Engineering;
- 2.3 “area isolation” means protection provided for a section of a piping system with potable and non-potable connections (that may or may not be considered cross connections) downstream of a backflow prevention device;
- 2.4 “AWWA” means the American Water Works Associations;
- 2.5 “Authorized Functions List” means the list of functions and the persons authorized to carry out such functions as set out in the *CSA Standard*;
- 2.6 “authorized person” means a person who is authorized to carry out a function as set out in the Authorized Functions List of the *CSA Standard*;
- 2.7 “auxiliary water supply” means any water source or system other than the City’s direct water supply that may be available in a building or on any property, including any recycled water or cistern;
- 2.8 “backflow” means the flowing back of or reversal of the normal direction of flow of water;
- 2.9 “backflow prevention device” means a device that prevents backflow and includes a reduced pressure principle assembly, dual check valve, double check valve assembly and the like;
- 2.10 “building” shall have the same meaning as set out in the *Building Code Act*, and shall include a sprinkler system;
- 2.11 “*Building Code Act*” means *Building Code Act, 1992*, S.O. 1992, c.23, as amended;
- 2.12 “*Building Code*” means Ontario Regulation 350/06, as amended;
- 2.13 “Chief Building Official” means a chief building official of the City, or his or her designate, appointed or constituted under Sections 3 or Section 4 of the *Building Code Act*,
- 2.14 “City” means The Corporation of the City of Waterloo and it includes its employees, servants and agents;

- 2.15 “cross connection” means any actual or potential connection between a potable water supply or system and any source of pollution or contamination and includes any by-pass, jumper connection, removable section of pipe, swivel or changeover device and any other temporary or permanent connecting arrangement through which backflow may occur;
- 2.16 “Cross Connection Survey Form” means a report, in a form prescribed by the City from time to time, that includes existing backflow prevention devices, cross connections discovered, corrective measures, recommendations and date for which each device will be installed;
- 2.17 “CSA Standard” means the documents entitled the Selection, Installation, Maintenance and Field Testing of Backflow Preventers B64.10-17/B64. 10.1-17 published in 2017, and also Backflow Preventers and Vacuum Breakers B64.Series – 11 published in 2011 by the Canadian Standards Association, and includes any annexes/tables, within or any subsequent successor thereof;
- 2.18 “Director of Water Services” means the Director of Water Services of the City, or his or her designate
- 2.19 “Fees and Charges By-law” means *The Corporation of the City of Waterloo By-law Number 2017-077* or any successor thereof
- 2.20 “good repair” means
- (a) free from health hazard;
 - (b) free from fire hazard;
 - (c) in good working order
 - (d) not in poor condition by reason of deterioration, neglect, damage or defacement;
 - (e) able to perform its intended function; and,
 - (f) protected from freezing.
- 2.21 “individual protection” means protection provided at the connection of a fixture or appliance;
- 2.22 “Officer” means the Backflow Prevention Officer appointed for the purposes of administering and enforcing this By-law or his or her designate

- 2.23 “owner” means any person, firm or corporation having control over property to which this By-law applies and includes the owner registered on the title of the property and any occupant of any building located on such property;
- 2.24 “potable water” means water that is safe for human consumption;
- 2.25 “premise isolation” means isolation of the water supply that is provided at the entrance to a building or facility from the City’s water supply;
- 2.26 “qualified person” means a person who is certified by an accredited organization;
- 2.27 “survey” means a complete review of the potable water system or systems located within a building to determine the presence of any existing backflow prevention systems and/or any cross connections, corrective measures, recommendations and a date for which each device will be installed;
- 2.28 “testable” means the ability to conduct tests to determine if a device is functioning properly
- 2.29 “tester” means a person who is certified backflow prevention device tester who has successfully completed a cross connection course in backflow prevention device testing at an accredited school or school as defined in the CAN/CSA B.64 10, as amended, and a has current tester’s certificate;
- 2.30 “Test Report” means a report in the form as prescribed by the City from time to time;
- 2.31 “test tag” means a City issued tag indicated that the backflow prevention device is in working order as indicated through the test report;
- 2.32 “water meter” means the water meter installed within a premise to record the amount of water supplied to such premise(s) by the City;
- 2.33 “water purveyor” means any City owned and operated water supply and distribution; and;

- 2.34 “zone isolation” means the protection provided for sections of a piping system within a building or facility with no potable connections downstream of a backflow prevention device.

3.0 APPLICATION

- 3.1 This By-law applies to existing industrial, commercial, institutional and multi-residential buildings and structures, except buildings as described in Division A, Article 1.1.2.4 of Ontario Regulation 333/12 (the *Ontario Building Code*) or any successor thereof, unless they have access to an auxiliary water supply
- 3.2 Notwithstanding Section 3.1 this By-law applies where a condition exists in any building or structure that may be hazardous or detrimental to the potable water supply as determined by an Officer, Chief Building Official or the Director of Water Services; such examples may include but are not limited to irrigation systems, solar heating systems, fire sprinkler systems and swimming pools with a direct connection

4.0 GENERAL PROVISIONS

- 4.1 A backflow permit is required prior to installation of a backflow prevention device(s). A backflow permit can be obtained by the City application process through the Water Services Department.
- 4.2 Every owner of property upon which a backflow prevention device is installed shall ensure that such device is in good repair and working to the satisfaction of the City at all times.

5.0 CROSS CONNECTIONS PROHIBITED

- 5.1 No person shall connect, cause to be connected, or allow to remain connected to the water purveyor or any other potable water system any piping, fixture, fitting, container, appliance, vehicle, machine or the like in a manner which may under any circumstance allow water, waste water, any source of pollution or any other liquid, chemical or substance to enter such supply or system except in compliance with this By-law and the CSA Standard.

- 5.2 No person or owner shall make any connection to the water purveyor or any other potable water system in a building type set out in Section 3.1 without first installing a backflow prevention device in accordance with this By-law.
- 5.3 In all cases, premise isolation shall be required where an auxiliary water supply exists per the City protocols, as amended.
- 5.4 No connection shall be made between a potable water system supplied with water from a drinking water system any other potable water system without the consent of the water purveyor

6.0 PERSONS PERMITTED TO CARRY OUT WORK

- 6.1 No person shall carry out any backflow prevention functions except in accordance with the functions listed in the Authorized Functions List of the CSA Standard.
- 6.2 Any person permitted to carry out work, as outlined in the Authorized Functions List, shall produce, upon request of an Officer, a current tester's certificate, a certificate of qualification in an authorized trade, a copy of the backflow prevention assembly test equipment certification of calibration, and proof of public liability insurance.
- 6.3 Notwithstanding Section 6.1, an Officer certified as a tester may perform Items listed in the Authorized Functions List of the CSA Standard.
- 6.4 Every qualified person shall complete and pass a cross connection control course in backflow preventer testing, and shall have a certificate issued by an accredited organization.
- 6.5 Every qualified person must maintain active status with an accredited organization and provide proof of same to the City.

7.0 APPLICATION OF CSA STANDARD

- 7.1 Except as otherwise set out in this By-law, the selection, installation, maintenance and field testing of backflow prevention devices shall be in accordance with the CSA Standard and this By-law, and the building code.

- 7.2 Wherever the CSA Standard and the By-law are in conflict, the provisions of this By-law shall prevail where the CSA Standard is not incorporated as part of the *Building Code*.

8.0 SELECTION OF BACKFLOW PREVENTION DEVICES

- 8.1 Every owner of a building type set in Section 3.1 of the By-law shall ensure that backflow prevention device(s) are installed for premise isolation, individual isolation, zone and area isolation, in every building where a City water supply and/or other potable water exists, pursuant to the provisions of this By-law.
- 8.2 Backflow prevention devices for premise, individual, zone or area isolation shall be determined:
- 8.2.1 by using the CSA Standard and/or the *Building Code*; or, by using the Selection Guide of the CSA Standard; or,
 - 8.2.2 when the type of cross connection is not identified in the Selection Guide, by a professional engineer using the CSA Standard.
- 8.3 Notwithstanding Section 8.2, an Officer may require or permit particular backflow prevention device(s) or form of protection be used in respect of any cross connection, including, premise, zone, area and individual protection.
- 8.4 Notwithstanding Section 8.2, the City may permit an existing backflow prevention device if previously approved and the safety of the potable water system is maintained to the satisfaction of the City in its sole discretion.
- 8.5 Notwithstanding Section 8.2, where the manufacturer of equipment has installed a backflow prevention device, the cross connection is required to be reviewed to determine if the backflow prevention device meets the requirements of the CSA Standard. These cross connections are to be indicated in the Cross Connection Survey Form when a Survey is required.

9.0 REQUIRED SURVEYS

- 9.1 Upon inspection and/or notification of an Officer, or when otherwise ordered by the City, every owner of a building of a type set out in Section 3.1 shall cause to be carried out a survey, at the owner's expense, of each of his or her buildings and structures to determine the presence of any existing backflow prevention systems, and/or any cross connections, corrective measures, recommendations, and a date for which each device will be installed and;
- 9.1.1 shall ensure each survey is carried out by a person permitted to do so pursuant to the Authorized Functions List; and,
 - 9.1.2 shall ensure that the Cross Connection Survey Form is complete and includes the current tester's certificate number; and,
 - 9.1.3 shall ensure that the completed Cross Connection Survey Form is provided to an Officer within the specified time period.
- 9.2 A Cross Connection Survey Form shall be completed:
- 9.2.1 every five (5) years from the date of the first survey requested; and/or,
 - 9.2.2 upon inspection by an Officer or when otherwise ordered by the City;
 - 9.2.3 upon change of use, changing of machinery, fixtures, or alteration of the piping, and/or;
 - 9.2.4 construction of a new building type as set out in Section 3.1

10.0 INSTALLATION OF BACKFLOW PREVENTION DEVICES

- 10.1 Every person installing a backflow prevention device shall ensure that:
- 10.1.1 such device is installed in accordance with acceptable engineering practices, the requirements of the *Building Code*, manufacturer's specifications, this By-law and the CSA Standard, as amended;
 - 10.1.2 such device is located in such a manner so that, in the event of backflow, the device prevents contamination of the water purveyor and any other potable water system;
 - 10.1.3 where such device is installed in respect of premise isolation, such device is located within a maximum of 3.0 metres downstream of the water meter, except where circumstances require the device to be installed upstream of the water meter and such location is to the satisfaction of an Officer;
 - 10.1.4 where such device is installed in respect of premise isolation, all piping between the water meter and such device is clearly labeled "no connection permitted"; and,
 - 10.1.5 where such device is installed in respect of individual, area, or zone isolation, all piping between the point of contamination or potential contamination, and the point at which the device is located is labeled "non-potable water".
- 10.2 Connections to potable water systems shall be designed and installed so that non-potable water or substances that may render the water non-potable cannot enter the system.
- 10.3 Once an Officer has conducted an inspection and determined that a backflow prevention device(s) is required, the installation of a backflow prevention device(s) shall occur within the timeframes set by the Officer.

11.0 TESTING OF DEVICES

- 11.1 Every owner who has a testable backflow prevention device located on his or her property shall ensure that:
- 11.1.1 a qualified tester tests the device when it is first installed and annually thereafter, or when it is cleaned, repaired, overhauled or relocated, and/or as required by the CSA Standard, and/or when requested by an Officer;
 - 11.1.2 when the device is first installed and tested, that a Test Report, of such test be submitted to an Officer within fourteen (14) days of the test being conducted
 - 11.1.3 when the device is tested annually thereafter, that a Test Report, of such test be available on site for review as required by an Officer;
 - 11.1.4 when the device is tested as a requirement for maintenance or as required by the CSA Standard, that a Test Report, of such test be available on site for review as required by an Officer;
 - 11.1.5 when the device is tested as requested by an Officer, that a Test Report, of such test be conducted in a timely manner and results submitted to the Officer within fourteen (14) days of the test being conducted or may be subject to a late fee at the City's discretion;
 - 11.1.6 when a device is tested and a Test Report has been completed, said report is retained on site for a period of not less than seven (7) years; and,
 - 11.1.7 when a device is tested, the tester shall ensure that the City test tag is affixed to the device, at all times.
- 11.2 Every person who tests a backflow prevention device shall carry out such testing in accordance with this By-law and the CSA Standard. In addition to the testing methods set out by the CSA Standard, test

procedures established by the OWWA for testing backflow prevention devices may be applicable.

- 11.3 Every person who tests a backflow prevention device shall, upon finding that such device is malfunctioning or otherwise not in good repair, immediately make repairs or replace the device, and notify an Officer.
- 11.4 Where required by the *Building Code* and the CSA Standard, all equipment used to test backflow prevention devices shall be verified or calibrated for accuracy.

12.0 FIRE PROTECTION SYSTEMS

- 12.1 Potable water connections to fire protection systems (standpipe and sprinkler systems) shall be protected against backflow in accordance with the CSA Standard and the *Building Code*.

13.0 INSPECTIONS

- 13.1 An officer may at any reasonable time enter onto the property of any owner to inspect for compliance with the By-law and/or an order made pursuant to Section 14 of the By-law.
- 13.2 No person shall hinder or obstruct, or attempt to hinder or obstruct, an Officer in the exercise of a power or performance of a duty under this By-law.
- 13.3 For the purposes of conducting an inspection an Officer may:
 - 13.3.1 require the production for inspection of documents or things relevant to the inspection;
 - 13.3.2 inspect and remove documents or things relevant to the inspection for the purpose of making copies or extracts;
 - 13.3.3 require information from any person concerning a matter related to the inspection; and,
 - 13.3.4 alone, or in conjunction with a person possessing special or expert knowledge, make examinations and/or take tests,

samples, and/or photographs necessary for the purposes of the inspection.

14.0 CONTRAVENTIONS AND ORDERS

- 14.1 Where the City is satisfied that a contravention of this By-law has occurred, an Officer may make an Order, requiring that the person who contravened this By-law, or who causes or permitted the contravention, or the owner or occupier of the land on which the contravention occurred to do work to correct the contravention.
- 14.2 An Order under Section 14.1 shall set out:
- 14.2.1 Reasonable particulars of the contravention adequate to identify the contravention and the location of the land on which the contravention occurred; and,
- 14.2.2 Identify the work to be done and the date by which the work must be done.
- 14.3 An Order under Section 14.1 may require work to be completed on a particular thing that may have been present prior to the enactment of the By-law, however is currently in violation of the By-law and will need to be rectified.
- 14.4 Where an owner fails to comply with an Order within the prescribed period of time, an Officer may cause the required work to be done at the person's expense.
- 14.5 For the purposes of Section 14.4, any agent or worker of the City may enter upon the land at any reasonable time.
- 14.6 The City may recover the costs of doing a matter or thing under Section 14.4 from the person directed or required to do it, by action or by adding the costs to the tax roll and collecting them in the same manner as property taxes.
- 14.7 Where an owner of a building contravenes, or allows the contravention of, a provision of the By-law which could or would endanger the health or safety of any person, as determined by the Director of Water Services, the City may shut off the water supply to the building or property of that owner, or any portion thereof, until the real or potential danger to health or safety ceases to exist.

15.0 REMOVAL OF BACKFLOW PREVENTION DEVICES PROHIBITED

No person shall remove a backflow prevention device or part thereof after it has been installed, and no owner of a building in which a backflow prevention device is installed shall cause or permit the removal of such device, unless:

- 15.1.1 such removal is to facilitate the repair of the device and such device is replaced immediately after such repair is carried out; and/or,
- 15.1.2 such removal is to replace the device with another device that meets or exceeds the provisions of the By-law; and/or,
- 15.1.3 Prior authorization has been granted by an Officer through submission of appropriate application for permission to have the device removed.

16.0 OFFENCES

- 16.1 Every person who contravenes any of the provisions of this By-law or fails to comply with an Order, direction or other requirement of the By-law is guilty of an offence and, upon conviction, is liable to a fine pursuant to the *Provincial Offences Act*, R.S.O. 1990, c. P.33, as amended.
- 16.2 If this By-law is contravened and a conviction entered, in addition to any other remedy and to any penalty imposed by the By-law, the Court in which the conviction has been entered and any Court of competent jurisdiction thereafter, may make an Order prohibiting the continuation or repetition of the offence by the convicted.

17.0 FEES AND CHARGES

All fees and charges pursuant to this By-law may be set by Council from time to time and shall be outlined in the Fees and Charges By-law, as amended.

18.0 SEVERABILITY

If a Court of competent jurisdiction should declare any Section or part of a Section of the By-law to be invalid, such Section or part of a Section shall not be construed as having persuaded or influenced Council to pass the remainder of this By-law and it is hereby declared that the remainder of the By-law shall be valid and shall remain in full force and effect.

19.0 REPEAL

By-law 2010-040 is hereby repealed.

20.0 COMING INTO FORCE

This By-law shall come into force on the date of its passage by Council.

Enacted this 28 day of May, 2018.

Approval	Date	Print Name	Initials
IPPW	<u>June 4/18</u>	Cameron Rapp	<u>CR</u>
Legal	<u>JUNE 4/18</u>	<u>STEVE ROSS</u>	<u>SR</u>
Finance	<u>June 4/18</u>	N/A	<u>CR</u>

D. Jaworsky
D. Jaworsky, Mayor

O. Smith
O. Smith, City Clerk