

BY-LAW 8-04
CROSS-CONNECTION and BACKFLOW PREVENTION BY-LAW

The Council of Rothesay, under authority vested in it by the *Municipalities Act*, R.S.N.B. (1973), Chapter M-22, and amendments thereto, hereby enacts as follows:

TITLE

1. This By-law may be cited as the “Cross-Connection By-law”.

DEFINITIONS

2. In this By-law, unless otherwise stated:
 - a) “Approved” means accepted by the Engineer as meeting an applicable specification stated or cited in this By-law, or as suitable for the proposed use;
 - b) “Auxiliary Water Supply” means any water supply on, or available to, the premises other than the purveyor’s approved public potable water supply;
 - c) “Backflow” means the flow of water or other liquids, mixtures or substances, under positive or reduced pressure in the distribution pipes of a potable water supply from any source other than its intended source;
 - d) “Backflow Preventer” means a device or means designed to prevent backflow or back-siphonage most commonly categorized as air gap, reduced pressure principle device, double check valve assembly, pressure vacuum breaker, atmospheric vacuum breaker, hose bibb vacuum breaker, residential dual check, double check with intermediate atmospheric vent, and barometric loop; more specifically:
 - i. “Air Gap” means a physical separation sufficient to prevent backflow between the free-flowing discharge end of the potable water system and any other system. Physically defined as a distance equal to twice the diameter of the supply side pipe diameter but never less than one (1) inch;
 - ii. “Atmospheric Vacuum Breaker” means a device which prevents back-siphonage by creating an atmospheric vent when there is either a negative pressure or sub-atmospheric pressure in a water system;
 - iii. “Barometric Loop” means a fabricated piping arrangement rising at least thirty five (35) feet at its topmost point above the highest fixture it supplies and is utilized in water supply systems to protect against back-siphonage;
 - iv. “Double Check Valve Assembly” means an assembly of two (2) independently operating spring loaded check valves with tightly closing shut off valves on each side of the check valves, plus properly located test cocks for the testing of each check valve;

- v. “Double Check Valve with Intermediate Atmospheric Vent” means a device having two (2) spring loaded check valves separated by an atmospheric vent chamber;
- vi. “Hose Bibb Vacuum Breaker” means a device which is permanently attached to a hose bibb and which acts as an atmospheric vacuum breaker;
- vii. “Pressure Vacuum Breaker” means a device containing one or two independently operated spring loaded check valves and an independently operated spring loaded air inlet valve located on the discharge side of the check or checks. This device includes tightly closing shut-off valves on each side of the check valves and properly located test cocks for the testing of the check valve(s);
- viii. “Reduced Pressure Principle Backflow Preventer” means an assembly consisting of two (2) independently operating approved check valves with an automatically operating differential relief valve located between the two (2) check valves, tightly closing shut-off valves on each side of the check valves plus properly located test cocks for the testing of the check valves and the relief valve;
- ix. “Residential Dual Check” means an assembly of two (2) spring-loaded, independently operating check valves without tightly closing shut-off valves and test cocks generally employed immediately downstream of the water meter to act as a containment device;
- e) “Backpressure” means a condition in which the Owner’s system pressure is greater than the supplier’s system pressure;
- f) “Back-siphonage” means the flow of water or other liquids, mixtures or substances into the distribution pipes of a potable water supply system from any source other than its intended source caused by the sudden reduction of pressure in the potable water supply system;
- g) “Committee” means the Water and Sewerage Committee of Rothesay, as appointed by the Mayor;
- h) “Containment” means a method of backflow prevention which requires a backflow prevention preventer at the water service entrance;
- i) “Contaminant” means a substance that would impair the quality of the water to a degree that it creates a serious health hazard to the public leading to poisoning or the spread of disease;
- j) “Cross-Connection” means any actual or potential connection between the public water supply and a source of contamination or pollution;

- k) “Department” means Rothesay Water and Wastewater Operations;
- l) “Engineer” means the Town Engineer or his designate; who is invested with responsibility for the implementation of a cross-connection control program and the authority for the enforcement of the provisions of this By-law.
- m) “Fixture Isolation” means a method of backflow prevention in which a backflow preventer is located to correct a cross-connection at an in-plant location rather than at a water service entrance;
- n) “May” is construed as permissive;
- o) “Owner” means the person in whose name the property is assessed under the *Assessment Act*, Chapter A-14, R.S.N.B. (1073) and amendments thereto, and includes the executors, administrators and assigns of such person;
- p) “Person” means any individual, partnership, company, public or private corporation, or agency of the Province of New Brunswick, agency or any other legal entity;
- q) “Permit” means a document issued by the Town which allows the use of a backflow preventer;
- r) “Pollutant” means a foreign substance, that if permitted to get into the public water system, will degrade its quality so as to constitute a moderate hazard, or impair the usefulness or quality of the water to a degree which does not create an actual hazard to the public health but which does adversely and unreasonably affect such water for domestic use;
- s) “Shall” is construed as being mandatory;
- t) “Town” means the town of Rothesay or the area contained within its municipal boundaries as the context requires;
- u) “Water Service Entrance means” that point in the Owner’s water system beyond the sanitary control of the Department; generally considered to be the outlet end of the water meter and always before any unprotected branch;
- v) “Water System” means and includes the water system for that area within the municipal boundary having its source of water supply from the City of Saint John; the water system for that area within the municipal boundary having its source of water supply from the Carpenters’ Pond Watershed; and such other sources as may be developed from time to time.

2.1 In this By-law where the context requires, the singular shall be taken to also mean the plural and references to the male or female gender shall be taken to include the other.

3. **CROSS CONNECTION AND BACKFLOW PREVENTION**

- 3.1 The Town shall operate a cross-connection control program, to include the keeping of necessary records, which fulfills the requirements of the Province of New Brunswick Cross-Connection Regulations and is approved by Council.
- 3.2 If the Town requires that the public supply be protected by containment, the Owner shall be responsible for water quality beyond the outlet end of the containment device and shall utilize fixture outlet protection for that purpose. The Owner may request public health officials or personnel from the Town to assist him in the survey of his facilities, in the selection of proper fixture outlet devices and the proper installation of these devices.
- 3.3 The Engineer shall have right of access to all parts of an Owner's property or premises at all reasonable hours for the purpose of inspecting any water pipes, fittings or appliances. The Town shall have the right to suspend water service to any Owner who refuses such access or does not respond to requests by the Engineer for such access.
- 3.4 The Engineer, or his designate, shall be responsible for the protection of the public potable water distribution system from contamination or pollution due to the backflow or back-siphonage of contaminants or pollutants through the water service connection.
- 3.5 If, in the opinion of the Engineer, an approved backflow device is required at the Town's water service connection to any Owner's premises, the Engineer, or his designate, shall give notice in writing to said Owner to install an approved backflow prevention device at each service connection to his premises. The Owner shall, within 90 days install such approved device or devices, at his own expense, and failure or refusal, or inability on the part of the Owner to install said device or devices within ninety (90) days, shall constitute a ground for discontinuing water service to the premises until such device or devices have been properly installed.

4. **REQUIREMENTS**

- 4.1 On all new installations, the Town shall provide onsite evaluation and/or inspection of plans in order to determine the type of backflow preventer, if any, that will be required and will issue the permit and perform the inspection. The Town will require all devices be field tested in conformance with CSA B64.10, "Backflow Prevention Devices – Selection, Installation, Maintenance and Field Testing" by a certified tester and a copy of the test results be filed with the Town by the Owner

prior to the Town activating water service. In any case, a minimum of a dual check valve will be required in any new construction.

- 4.2 All new residential buildings shall be required to install a residential dual check device immediately downstream of the water meter. Installation of this residential dual check device on a retrofit basis on existing service lines shall be instituted at a time and at a cost to the homeowner as deemed necessary by the Town. The Owner shall be aware that the installation of a residential dual check valve may result in a potential closed plumbing system within the residence. As such, provisions shall be made by the Owner to provide for thermal expansion within the closed loop system by the installation of thermal expansion devices and/or pressure relief valves.
- 4.3 The Town shall require that all new retrofit installations of reduced pressure principle devices and double check valve backflow preventers include the installation of strainers located immediately upstream of the backflow device. The installation of strainers will preclude the fouling of backflow devices due to both foreseen and unforeseen circumstances occurring to the water supply system such as water main repairs, water main breaks, fires, periodic cleaning and flushing of mains, etc. These occurrences may “stir up” debris within the water main that will cause fouling of backflow devices installed without the benefit of strainers.
- 4.4 For premises existing prior to the enactment of this By-law, the Town shall perform evaluations and inspections of plans and/or premises and inform the Owner by letter of any corrective action deemed necessary; the method of achieving the correction and the time allowed for the correction to be made. Ordinarily, ninety (90) days shall be allowed. However, this time period may be shortened depending upon the degree of hazard involved and the history of the device(s) in question.
- 4.5 The Town will not permit or allow any cross-connection to remain unless it is protected by an approved backflow preventer for which a permit has been issued and which device will be regularly tested to insure satisfactory operation.
- 4.6 The Town shall inform the Owner by letter of any failure to comply, by the time of the first re-inspection. The Town shall allow an additional fifteen (15) days for the correction. In the event the Owner fails to comply with the necessary correction by the time of the second re-inspection, the Town shall inform the Owner by letter that the water service to the Owner’s premises will be terminated within a period not to exceed five (5) days. In the event that the Owner informs the Town of extenuating circumstances as to why the correction has not been made, a time

extension may be granted by Council but in no case shall exceed an additional thirty (30) days.

- 4.7 If the Town determines at any time that a serious threat to the public health exists, the water service will be terminated immediately without written notice.
- 4.8 The Owner shall be responsible for the elimination or protection of all cross-connections on his premises.
- 4.9 The Owner, after having been informed by a letter from the Town, shall at his expense, install, maintain, and test, or have tested, any and all backflow preventers on his premises.
- 4.10 The Owner shall correct any malfunction of the backflow preventer which is revealed by periodic testing and shall file with the Town a copy of the testing result.
- 4.11 The Owner shall inform the Town of any proposed or modified cross-connections and also any existing cross-connections of which the Owner is aware.
- 4.12 The Owner shall not install a bypass around any backflow preventer unless there is a backflow preventer of the same type on the bypass. Owners who cannot shut down operation for testing of the device(s) must supply additional devices necessary to allow testing to take place.
- 4.13 The Owner shall install backflow preventers in a manner approved by the Town and which will conform with the requirements of National Plumbing Code of Canada, 1995, and subsequent revisions thereof, and further; which shall be selected, installed, maintained and field tested in conformance with CSA B64.10 "Backflow Prevention Devices – Selection, Installation, Maintenance, and Field Testing".
- 4.14 The Owner shall install only backflow preventers approved by the Town.
- 4.15 Any Owner having a private well or other private water source, shall have a permit if the well or source is cross-connected to the Town's water system. Permission to cross-connect may be denied by the Town, and further, the Owner may be required to install a backflow preventer at the service entrance if a private water source is maintained, even if it is not cross-connected to the Town's water system.

- 4.16 In the event the Owner installs plumbing to provide potable water for domestic purposes which is on the Town side of the backflow preventer, such plumbing shall have its own backflow preventer installed.
- 4.17 The Owner shall be responsible for the payment of all fees for permits, annual or semi-annual device field testing, retesting in the case that the device fails to operate correctly and second reinspections for non-compliance with Town requirements.
- 5. CROSS CONNECTION AND BACKFLOW PREVENTION PERMITS**
- 5.1 Cross-connection permits that are required for each backflow prevention device shall be obtained from the Town. A fee of twenty (\$20) dollars will be charged for the initial permit, which fee shall include the costs of initial install and testing.
- 5.2 Permits shall be renewed every five (5) years and are non-transferable. A fee of twenty (\$20) dollars shall be charged for the renewal of each permit, which includes a re-testing fee. Permits are subject to revocation and become immediately revoked if the Owner changes the type of cross-connection or degree of hazard associated with the service.
- 5.3 A permit is not required when fixture isolation is achieved with the utilization of a non-testable backflow preventer.
- 6. EXISTING IN-USE BACKFLOW PREVENTION DEVICES**
- 6.1 Any existing backflow preventer shall be allowed by the Town to continue in service unless the degree of hazard is such as to supercede the effectiveness of the present backflow preventer or result in an unreasonable risk to the public health. Where the degree of hazard has increased, as in the case of a residential installation converting to a business or commercial establishment, any existing backflow preventer must be upgraded to a reduced pressure principle device, or a reduced pressure principle device shall be installed in the event that no backflow device was present.
- 7. PERIODIC TESTING**
- 7.1 Reduced pressure principle backflow devices shall be field tested and inspected at least semi-annually.
- 7.2 Periodic testing shall be performed by a certified field tester or his delegated representative and a copy of the testing results shall be filed with the Town. All field testing and retesting shall be conducted at the Owner's expense.

- 7.3 The testing shall be conducted during the Town’s regular business hours. Exceptions to this, when at the request of the Owner, may require additional charges to cover the increased costs to the Town.
- 7.4 Any backflow preventer which fails during a periodic test shall be repaired or replaced. When repairs are necessary, upon completion of the repair the device will be re-tested at Owner’s expense to insure correct operation. High hazard situations shall not be allowed to continue unprotected if the backflow preventer fails the test and cannot be repaired immediately. In other situations, a compliance date of not more than thirty (30) days after the test date shall be established. The Owner is responsible for spare parts, repair tools, or a replacement device. Parallel installation of two (2) devices is an effective means of the Owner insuring uninterrupted water service during testing or repair of devices, should Owner desire such continuity.
- 7.5 Backflow prevention devices shall be tested more frequently than specified in section 7; in cases where there is a history of test failures and the Town determines that, due to the degree of hazard involved, additional testing is warranted. Cost of the additional tests shall borne by the Owner.

8. SEVERABILITY

If any part of this By-law shall be held invalid, such part shall be deemed severable and the invalidity thereof shall not affect the remaining parts of this By-law.

9. EFFECTIVE DATE

This By-law comes into effect on the **1st day of January 2005**.

FIRST READING BY TITLE	:	10 January 2005
SECOND READING BY TITLE	:	10 January 2005
READ BY SECTION NUMBER	:	14 February 2005
(Advertised as to content on the Rothesay website in accordance with <i>Municipalities Act</i> R.S.N.B. (1973) Chapter M-22)		
THIRD READING BY TITLE AND ENACTED	:	14 February 2005

MAYOR

CLERK