

Cross-Connection Control

Effective Date: November 2, 2010

Reaffirmed Date: June 19, 2012

Reaffirmed Date: July 21, 2015

Policy Statement:

A Cross-Connection Control Program addresses the backflow threat as a result of cross-connections by establishing operating policies and backflow prevention unit selection, installation, testing and maintenance practices and procedures. The Program tracks all installed testable backflow preventers that are connected to a water service provided by the City of Pitt Meadows to ensure that all remain in proper working order.

I. Purpose

The City of Pitt Meadows has developed a Cross-Connection Control Program following the best practises contained in the Federation of Canadian Municipalities InfraGuide “Methodologies for Implementing A Cross -Connection Control Program” and the BC Waste Water Association “Best Management Practices for Cross-Connection Control”. The purpose of this program is to protect public health by ensuring that the safe, clean water conveyed in the City of Pitt Meadows’s water distribution system is not contaminated by backflow occurrences.

The Program also maintains a list of certified backflow preventer testers to ensure that backflow preventers are tested by qualified persons.

I a) Mission

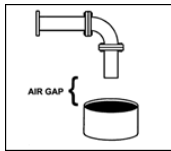
To protect public health, in accordance with the Drinking Water Protection Act, by ensuring that the City’s high quality, safe, public water supply is not compromised due to back-flow resulting from cross-connections.

I b) Goals and Objectives

Develop and implement a cross-connection control program. Maintain and assess the program in an ongoing and objective manner, ensuring that clean, safe water is delivered to people of the City of Pitt Meadows.

2. Definitions

Air gap - the unobstructed vertical distance through air between the lowest point of a water supply outlet and the flood level rim of the fixture (e.g. a bathtub faucet) or vessel into which the outlet discharges. The separation shall be at least twice the diameter of the water supply outlet and never less than one inch (1"). In theory, a well-designed and properly maintained air gap is considered the best means available for protection against backflow. However, it is not always practical and is vulnerable to easy bypass.



Back pressure - a pressure higher than the supply pressure.

Back siphonage - backflow caused by pressure below atmospheric in the supply system.

Backflow - the flowing back or reversal of the normal direction of water flow in either the City of Pitt Meadows water distribution system or the consumer's water system.

Backflow preventer or prevention device - a unit that prevents backflow, as further defined in Bulletin I

Backflow prevention assembly tester - means a person who is certified by the British Columbia Water and Wastewater Association to test assemblies. The City of Pitt Meadows Cross-Connection Control Program retains the right to accept or reject submitted backflow preventer test reports based on errors, discrepancies and/or omissions.

Consumer - means any person or persons whose property is connected to City waterworks, or any lessee or occupant of such property or any person who obtains water from any City-owned hydrant.



Cross-Connection - any actual or potential connection between the potable water supply or system and any source of pollution or contamination. This includes swivel or changeover units, removable sections, jumper connections and bypass arrangements.

Cross-connection control program (CCCP) - a program initiated by the City of Pitt Meadows to administer and regulate the selection, installation, testing, and maintenance of backflow preventers.

Director - the Director of Operations and Development Services for the City of Pitt Meadows and or their designate.

Double check valve assembly (DCVA) - a backflow preventer consisting of two force-loaded, independently acting check valves, including tightly closing resilient-seated shut-off valves located at each end of the assembly and fitted with properly located resilient-seated test cocks. This device is designed for use under continuous pressure.

Double Check Detector Assembly (DCDA) - a backflow preventer consisting of two double check valve assemblies arranged in parallel. It is intended for installations which require metering for system leaks or unauthorized water usage. The DCDA includes a by-pass line which includes an approved water meter and an approved backflow preventer.

Fire Service connection - a piping connection that conveys water from public water

3. **Authority**

The City of Pitt Meadows Cross-Connection Control Program receives its authority from Water Works Bylaw 2343, 2007 and the British Columbia Building Code, Part 7, which require the potable water systems be protected from contamination.

4. **Responsibilities**

A. Responsibilities of the Water Purveyor - City of Pitt Meadows

i. Provide a Cross-Connection Control Program

The City of Pitt Meadows attempts to prevent the contamination of the water distribution system by inspecting facilities and water service connections, then identifying, inventorying and controlling cross-connections. It provides guidance for new and existing backflow preventer installations and maintains records on these units. The City of



Pitt Meadows will also respond to customer inquiries in an effort to meet the goals and objectives of the Cross-Connection Control Program.

a. Program Implementation

The Cross-Connection Control Program will be implemented in a manner that will address the high and severe hazard water use properties first. Industrial, Commercial, Institutional and Agricultural (ICIA) water consumers will be assessed and inspected first. Following the inspection, a letter will be sent to the water consumer or property owner explaining the result of the inspection and the City's requirements, if any, for cross-connection control. If the City's requirements are not met, a second letter will be sent explaining the importance of compliance. Ultimately, if no compliance is obtained in the allotted time frame, a final letter will be sent as a termination of water service notice, in accordance with Bylaw No. 2343.

The program will then address the moderate hazard users.

Public education programs will be delivered to inform residential water consumers of the dangers of backflow.

b. Program Maintenance

Records of all backflow prevention assemblies will be kept by the City of Pitt Meadows Building Department as the assemblies are inventoried or installed.

The City of Pitt Meadows Cross-Connection Control Program may provide guidance for zone and fixture isolation to meet the requirements of Canadian Standards Association (CSA). This guidance will be in the interest of protecting the public health of the water users on premises.

c. Emergency Response

A Water Response Plan will be enacted in accordance with the Safe Drinking Water Health Act - Section 7, to address any incident arising from a backflow occurrence.



B. Responsibilities of the Water Consumer

i. Control Cross-Connections

It is incumbent upon the water consumer to insure that onsite water use practices or processes do not affect the City of Pitt Meadows water distribution system in a negative manner. This requirement is a condition of water service from the City of Pitt Meadows. The water consumer shall be responsible for controlling cross-connections through the installation, testing and maintenance of approved backflow prevention measures on any temporary or permanent connection to the water distribution system downstream of the water meter serving the property. These connections include fire hydrant connections as described in section 10 of Bylaw No. 2343, 2007.

The type of backflow prevention measure required shall depend upon the degree of hazard that exists, the probability of a backflow incident occurring, and the type of circumstance causing potential or actual backflow to occur (back siphonage or back pressure).

ii. Access to Premises

The water consumer shall be responsible for providing the necessary information, scheduling, and access for inspection to allow a determination of backflow potential and the appropriate cross-connection control measures.

iii. Backflow Prevention Testing

The water consumer is responsible for all costs associated with the installation, inspection, testing, repair, replacement and maintenance of backflow preventers servicing their water system.

All testable assemblies require annual, or more frequent, testing by a certified tester in accordance with the most recent version of CSA B64.10. In the event an assembly fails a test, the consumer must have the unit repaired or replaced within 48 hours. The unit must then be tested again to ensure that it is in proper working order. Bypass arrangements are not permitted under any circumstances. The test result must be submitted, within thirty days of the test date, to the Building Inspection office at Pitt Meadows City Hall. After review and acceptance of the test report, the assembly is considered in proper working order.



All testing shall be conducted by a BC Waste Water Association certified tester.

The City of Pitt Meadows retains the right to reject submitted backflow preventer test reports based on errors, discrepancies or omissions. If consecutive errors or omissions are noted on test forms submitted by a certified tester, the City of Pitt Meadows may refuse to accept test reports from the tester.

A test tag must be attached to every assembly, once it has passed inspection.

Annual test reports are due 12 months from the date of installation and every 12 months thereafter. If test reports are not received 12 months from the date of installation, a first reminder letter requesting test results within 30 days will be sent. If test reports are not received within 30 days following this notification a second reminder letter will be sent advising that non-compliance may result in termination of water service. Ultimately, if no response is received in the allotted time frame, a final letter will be sent as a termination of water service notice, in accordance with Bylaw No. 2343.

All bylaw requirements must be met, and all applicable service charges must be paid prior to the terminated service being restored.

iv. Permits

All new backflow prevention device installations require a Building permit. Please contact Building Inspection for more information at 604-465-5454.

v. Incident reporting

All incidents of backflow must be reported to the City Public Works Department at 604-465-2434.

5. Program Structure

The City of Pitt Meadows Cross-Connection Control Program allows for updates in policy approved by the Director of Operations and Development Services by means of bulletins that will be posted to apprise the general public and contractors of the requirements for cross-connection control that are not specifically addressed in the accepted Canadian Standards Association (CSA) standard. These bulletins may also specify requirements of the Cross-Connection Control Program that vary from the accepted CSA standard. In the case of a discrepancy between the accepted CSA

standard and a bulletin of the Cross-Connection Control Program, the bulletin will prevail.

6. Standards

A. British Columbia Building Code

All new construction and renovations undertaken in the City of Pitt Meadows are subject to the requirements of B.C. Building Code. Section 7.6 of the B.C. Building Code, “Protection from Contamination”, refers to backflow prevention. Section 7.6.2.12 states that “Backflow preventers shall be selected, installed, maintained and field tested in conformance with CSA B64.10”.

B. Accepted Standard - CSA B64.10-01

The selection, installation, maintenance and field testing of backflow preventers in the City shall be in accordance with CSA B64.10-01 or the latest version of this standard. In the case of a discrepancy between the CSA standard and a bulletin of the Cross-Connection Control Program, the bulletin will prevail.

C. Accepted Standard - CSA B64 Series 01

All backflow preventers installed in the City shall be approved in accordance with CSA standard B64 Series-01. The backflow preventers must be approved for the application in which they are being used.

7. Bulletins

Bulletin 1 Backflow Preventers

Bulletin 2 Multiple Services to a Property

Bulletin 3 Locating Premise Isolation

Bulletin 4 Water Service Turn On

Bulletin 5 Water Entry Room Bypass



City of Pitt Meadows Cross-Connection Control Program Bulletin

Date: August 2010

Number: 1

Subject: Backflow Preventers
From: Building Inspection Department
Purpose: To inform contractors and public of updates relevant to Cross-Connection Control Program Policy.

Background: The City of Pitt Meadows Cross-Connection Control Program is providing additional information relating to the Cross-Connection Control requirements as applied to Backflow Preventers.

The following Backflow Preventers are approved for use in the City of Pitt Meadows.

FEBCO Series 731 Hose Connection Vacuum Breakers (HCV)

Series 731 hose connection vacuum breakers are specially made to permit the attachment of portable hoses to house thread faucets. These devices require no plumbing changes and screw directly into a sill cock and can be used on a wide variety of installations, such as service sinks, swimming pools, laundry tubs, and general outdoor gardening use.





FEBCO Series 850 Double Check Valve Assemblies (DCVA)

Series 850 Double Check Valve Assemblies are designed for moderate hazard applications.



FEBCO Series 860 Reduced Pressure Zone Assemblies (RPZA)

Series 860 Reduced Pressure Zone Assemblies are designed for high hazard applications including all agricultural applications.





City of Pitt Meadows Cross-Connection Control Program Bulletin

Date: August 2010

Number: 2

Subject: Multiple Services to any Property
From: Building Inspection Department
Purpose: To inform contractors and public of updates relevant to Cross-Connection Control Program Policy.

Background: The City of Pitt Meadows Cross-Connection Control Program is providing additional information relating to the Cross-Connection Control requirements as applied to any premises serviced by more than one water service.

In the case of more than one service to any premise, where the services are or could be connected via the internal plumbing, premises isolation with a Double Check Valve Assembly, at minimum, shall be required on all services. Upon the assessment of a severe hazard at a premises utilizing more than one water service, a Reduced Pressure Principle Assembly shall be required on all services.

Note: Standard water service installations consist of one service per premise. Multiple service installations or continuances are allowed only with approval of the Director.



City of Pitt Meadows Cross-Connection Control Program Bulletin

Date: August 2010

Number: 3

Subject: Locating Premise Isolation
From: Building Inspection Department
Purpose: To inform contractors and public of updates relevant to Cross-Connection Control Program Policy.

Background: The City of Pitt Meadows Cross-Connection Control Program is providing additional information relating to the Cross-Connection Control requirements as applied to premise isolation.

Unless otherwise, approved by the Director, all premise isolation backflow prevention assemblies shall be located at a consumer's property line abutting the City Street.



City of Pitt Meadows Cross-Connection Control Program Bulletin

Date: August 2010

Number: 4

Subject: Water Service Turn On
From: Building Inspection Department
Purpose: To inform contractors and public of updates relevant to Cross-Connection Control Program Policy.

Background: The City of Pitt Meadows Cross-Connection Control Program is providing additional information relating to the Cross-Connection Control requirements as applied to turning on of a water service.

The water service pipe shall not be turned on at the curb stop (property line) for occupancy use until the private plumbing system has been approved by the City Building Inspector or has been inspected for cross connections by the Building Inspector.



City of Pitt Meadows Cross-Connection Control Program Bulletin

Date: August 2010

Number: 5

Subject: Water Entry Room Bypass
From: Building Inspection Department
Purpose: To inform contractors and public of updates relevant to Cross-Connection Control Program Policy.

Background: The City of Pitt Meadows Cross-Connection Control Program is providing additional information relating to the Cross-Connection Control requirements as applied to the water supply bypass piping system in the water entry rooms of multi-family, mixed use, commercial, industrial or institutional buildings.

Any valve located on a water supply bypass piping system must be wired closed and tagged by city staff. Tampering with any bypass valve once tagged is an offence. Contact the city first before opening any water supply bypass valve.