

The Corporation of the City of Kawartha Lakes
Council Report

Report Number WWW2018-001

Date: January 30, 2018
Time: 2:00 p.m.
Place: Council Chambers

Ward Community Identifier: All

Subject: Water System Cross-Connection Control Program Policy

Author Name and Title: Rob MacPherson, Water and Wastewater Technician

Recommendation(s):

That Report WWW2018-001, Water System Cross-Connection Control Program Policy be received; and

That the policy entitled Water System Cross-Connection Control Policy appended to Report WWW2018-001 be adopted, numbered and inserted in the Corporate Policy and Procedures Manual; and

That the Water System Cross-Connection Control Management Directive be received.

Department Head: _____

Financial/Legal/HR/Other: _____

Chief Administrative Officer: _____

Background:

Backflow is a term in plumbing for an unwanted flow of water in the reverse direction. It can be a serious health risk for the contamination of potable water supplies. Backflow incidents created by cross-connections have caused contamination of drinking water distribution systems around the world, resulting in a loss of confidence by the public as to the safety of public drinking water, as well as numerous health-related issues. A cross-connection is a physical connection between a potable water plumbing system and any domestic, industrial or institutional piping system containing used or non-potable water. A backflow incident refers to any unwanted flow from the non-potable system back into the potable water system due to a pressure differential. Cross-connections are not protected against backflow and are a potentially dangerous hazard for human and environmental health.

Justice O'Connor stated within his report on the Walkerton Inquiry that "In addition, as part of their comprehensive distribution program, water providers should have active programs, working together with building inspectors and public health agencies, to detect and deter cross-contamination" and "Distribution systems should have regularly tested backflow prevention valves that can prevent or at least isolate incursions."

At the Council Meeting of December 13, 2011, Council adopted By-Law 2011-260 that governs the water and wastewater services the City provides through the following resolution:

Moved by Councillor Dunn, seconded by Councillor Macklem,

RESOLVED THAT a by-law to govern water and wastewater services in the City of Kawartha Lakes be read a first, second and third time, passed, numbered, signed and the corporate seal attached.

CARRIED CR2011-1418

Within By-law 2011-260 "*A By-law to Govern Water and Wastewater Services in the City of Kawartha Lakes*", section 17 speaks to cross-connections and backflow prevention. The adoption of this policy will allow staff to fully implement a program that will help support the by-law and current enforcement by the Building Division to ensure that no industrial, commercial, or institutional (ICI) properties connected to the City's water systems are unlawfully causing any backflow through cross-connections as they typically have the highest risk of contaminating the public's potable water supply. Since 2000, the Building Division has been enforcing backflow prevention for any ICI structure that obtains a building permit, however there has been no formal program for the Water & Wastewater Division to monitor and ensure properties maintain and continue to test their devices. Under the program, property owners will be required to retain

the services of a registered tester to perform a survey of their internal private plumbing system in order to identify existing Backflow Prevention Devices (BPD) and to identify actual or potential cross-connections between potable water and non-potable sources.

There are currently 52 municipalities across Ontario that all have active Cross-Connection Control Programs approved by the Ontario Water Works Association. This number is growing every year as more municipalities realize the economic and health related importance of preventing backflow contamination in their drinking water systems. If Council approves of the Water System Cross-Connection Control Program, it is the goal of the Water & Wastewater Division to have a complete listing of all ICI properties within Kawartha Lakes by the end of the second quarter of 2018 with the objective of implementing the Program by the end of 2018.

Rationale:

Adoption of a Cross-Connection Control Policy will help ensure the measures emplaced to mitigate the risk of contaminating the City's municipal drinking water systems due to backflow are enhanced. The Policy clearly identifies the responsibilities of the City and ICI property owners who are connected or wish to connect to the City's municipal drinking water systems. The Policy and corresponding Management Directive will ensure the following:

- Section 17 "Cross-Connections and Backflow Prevention" of By-law 2011-260 is appropriately enforceable by City staff and information is adequately tracked to ensure property owners are in compliance with SA-B64 Standards;
- The cost and scheduling of the survey, installation of any required Backflow Prevention Devices (BPD), testing of the device, and any plumbing system repairs or modifications required for compliance will be the responsibility of the property owner;
- That potential contamination through cross-connections are identified and managed through the installation of required premise isolating BPD;
- A list of Qualified BPD testers is maintained;
- Promotion of the Cross-Connection Control Program and the fostering of awareness of the program by educating owners about the risks and hazards associated with backflow contamination.

Other Alternatives Considered:

The policy was created using the Ministry of the Environment and Climate Changes “A Guide for Drinking Water System Owners Seeking to Undertake a Backflow Prevention Program” and standards through the Ontario Water Works Association (OWWA).

Council may choose not to adopt this policy and no formal program would be implemented to ensure that backflow and cross connections are managed for the City’s twenty-one (21) municipal drinking water systems. This option is not recommended as it is contrary to the intent of the By-Law and the legislation surrounding Ontario’s Safe Drinking Water Act, 2002.

Financial/Operation Impacts:

Staff hours required for implementation and management of this program is accounted for in general Water and Wastewater Division operations. There are no additional City resources required to implement this Policy.

After consulting with local plumbing services, the average cost for ICI property Owners to have the initial Cross Connection survey completed will cost approximately \$100. The annual cost for the Owner to have the BPDs inspected and tested will range \$150-\$200 per device.

Relationship of Recommendation(s) to The 2016-2019 Strategic Plan:

This Report contributes to the Council Adopted Strategic Plan in the following ways:

This report directly addresses “*Goal 3 – A Healthy Environment; Objective 3.1: A healthier environment; Action 3.1.6: Protect & enhance water quality*” of the Strategic Plan. Water distribution systems are exposed to several sources of contamination risks through back-siphonage and back-pressure. Backflow prevention devices are a clear and sensible way of significantly reducing many of these risks.

This Report relates to two Objectives of “*Enabler 4: Efficient Infrastructure and Asset Management*” of the Strategic Plan:

1. Objective 1 - Best technology and best use of technology.
2. Objective 3 - Environmentally efficient municipal infrastructure.

The usage of a Backflow Prevention Device is one of the best technologies available to prevent and mitigate potential cross-connection contamination to the municipal drinking water systems. Reducing the risk of contaminating the

drinking water distribution system will prevent human health related issues, environmental damages, and will create a more effective and efficient distribution system.

This Report is in line with the City of Kawartha Lakes values, specifically continuous improvement and excellence as this proposed program will improve the municipal drinking water distribution system quality as well as provide excellent, efficient, and safe services for the public of Kawartha Lakes.

Consultations:

City of Kawartha Lakes, Corporate Services – Utility Billing
City of Kawartha Lakes, Building Division
City of Kawartha Lakes, Clerks Department

Attachments:

Appendix 1 – Water System Cross-Connection Control Policy



Appendix 1 - Water
System Cross-Connect

Appendix 2 – Water System Cross-Connection Control Management Directive



Appendix 2 - Water
System Cross-Connect

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Department Head: Bryan Robinson, Director of Public Works