

Duty of Care

Our municipality has a “Duty of Care” that must be exercised with respect to the drinking water supply. A water purveyor has an obligation under the Safe Drinking Water Act to protect its drinking water supply from contamination, and to supply potable water to its customers. Section 11 of the Safe Drinking Water Act requires every owner of a municipal drinking water system ensure the following:

“That all water provided by the system to the point where the system is connected to a user’s plumbing system meets the requirements of the prescribed drinking water quality standards”

While contamination events are admittedly rare, experiences with backflow incidents in Stratford and Walkerton show that once the municipal system is contaminated, it can take weeks to completely remove the contaminants from the drinking water system and restore the potable water supply to a safe condition. The public health consequences of such an event can be very significant.

Background

On December 7th, 2015 the Operations Committee directed staff to develop an appropriate by-law (Drinking Water Backflow Prevention By-law) to regulate and protect safe and clean drinking water delivery to the citizens of Greater Sudbury. Staff is currently working on such a By-law including an implementation plan, communication plan, and financial impacts on customers, for further consideration at Operations Committee.

The proposed By-law addresses all properties within the city of Greater Sudbury as well as any properties located outside the city boundaries who are directly connected to our City drinking water systems through a Council approved agreement. Industrial Commercial, Institutional (ICI) and multi-residential properties that pose a higher risk for backflow contamination are required to strictly adhere to this By-law. Residential properties are generally exempt from this By-law, except for those properties that operate an irrigation system, or other features that elevate their backflow risk profile.

The By-law will require property owners identified as posing a “risk” to the municipal drinking water systems to install backflow prevention devices and perform annual testing and maintenance on their backflow prevention devices. It is the responsibility of the property owner to install, test and maintain backflow prevention devices. Provisions of the By-law also require property owners to conduct and submit a plumbing survey (called a Cross Connection Survey) of their property once every five (5) years to identify any changes or additions made that could impact their backflow risk profile. Should any

changes be recognized as a contamination threat the property owner will be required to correct the issue and install a backflow prevention device immediately.

The By-law aligns with the current Ontario Building Code requirements for backflow prevention. The By-law does not supersede the Building Code or impose any higher standards than are required for construction of a new building and plumbing systems. The By-law is also consistent with the By-laws adopted by many other municipalities in Ontario.

Key Elements

- The By-law addresses all properties who are directly connected to our City drinking water system through Council approved agreement;
- The By-law supports the Ontario Building Code (OBC) requirements for backflow prevention without superseding the OBC or imposing any higher standards;
- The By-law requires a “full” Drinking water Backflow Prevention program for Industrial/Commercial/Institutional (ICI) and multi-residential property owners;
- The By-law aligns with the current building code standard for all properties by addressing retroactive backflow prevention device installations as well as existing backflow prevention devices;
- The By-law requires property owners to conduct plumbing surveys (Cross Connection Survey) once every five (5) years;

Implementation Plan

Drawing from the Canadian Standards Association published list of types of ICI activity, the Water/Wastewater Compliance department will prioritize properties in the City of Greater Sudbury by level of backflow hazard risk they present.

The Water/Wastewater Compliance department will utilize existing staff who are already involved with ICI customers under the Source Control programs and are trained to educate, investigate, administer and enforce the provisions of the by-law. Initially the Water/Wastewater Environmental Compliance Officers will visit each potential “severe Risk” property and educate the owner/manager of the new Drinking Water backflow Prevention by-law and explain their responsibilities under the By-law. Officers will also provide the “Cross Connection Survey” form to the property owner to initiate a risk assessment.

The “Cross Connection Survey” will identify specific risk information for benefit of both the CGS and the property owner and will assess any unaddressed backflow prevention situations. The Environmental Compliance Officers will work with the property owner throughout the process to help resolve the backflow risks within a specified time frame.

Implementation of the Drinking Water Backflow prevention By-law will be handled through the Water/Wastewater Compliance department with existing staffing. The format of the program and the database of current ICI customers, which was developed through our Source Control program inspections over the past five (5) years, will facilitate the planned program implementation.

The implementation program will be delivered in three phases over a ten year time frame. Initially properties recognized as “Severe Risk” will be address in Phase one, while “Moderate and Minor Risk” properties will be approached during Phase Two and Three.

Departmental Alignment & Cooperation

The Ontario Building Code and the CSA Standards provide the framework for the Drinking Water Backflow Prevention By-law program. The Ontario Building code (OBC) was amended in 2014 to require backflow prevention device installations on all new ICI buildings and certain classes of multi-residential properties. Since this amendment, the City Building Services have required necessary backflow prevention devices on all permit applications. The proposed Drinking Water Backflow Prevention By-law will ensure the OBC maintenance requirements of these installed backflow prevention devices will be completed annually. The OBC does not address any retroactive requirements to any properties constructed prior to 2014 so the proposed Backflow Prevention by-law will require any properties posing backflow risks to install and maintain backflow prevention devices in accordance to the OBC specifications.

Communication Plan

Property owners throughout the City of Greater Sudbury will be educated about the new Drinking Water Backflow Prevention By-law through a communication plan. Brochures and flyers have been developed in conjunction with the CGS Communications department. A series of Public Information sessions will be organized to speak to the general public, ICI and multi-residential property owners, and the Development Liaison Advisory Committee (DLAC). The City’s website and social media will also play an important role in educating the public of the new By-law. Staff has already met with the local MOECC and Sudbury and District Health Unit staff members to discuss the proposed Backflow Prevention Program and both parties support the initiative.

Program Elements

Staff conducted a survey throughout Ontario and collected best practices from various municipalities who presently administer a backflow prevention program. Staff has recommended a program that will achieve the following outcomes:

Premise Isolation

Premise Isolation is defined as the prevention of backflow into the drinking water system from a private property building or structure by the installation of a backflow prevention device located at the lot line or the first building/structure on the private property. This type of installation aims to protect the water quality in the municipal drinking water system only. The property owner is only responsible to install one backflow prevention device per water service line in most circumstances.

Zone Isolation

Zone Isolation is a more comprehensive program not only designed to protect the municipal drinking water system, but also to provide backflow prevention devices within each privately owned building where required. This type of installation will require the private property owner to not only install a backflow prevention device per water service prevention devices throughout the private facilities to protect the residents / workers on that private property from a backflow risk.

Next Steps

The next steps of the Drinking Water Backflow Prevention By-law program are as follows:

- Complete the Drinking Water Backflow Prevention By-law for Council approval
- Proceed with the Communication plan; education and outreach to the Public
- Proceed with the three phase implementation plan; Phase One (Severe Risk); Phase Two (Moderator Risk); Phase Three (Minor Risk)
- Proceed with administration and enforcement strategies to ensure compliance with the By-law
- Monitor compliance and effectiveness of the By-law

Conclusion

A comprehensive Backflow Prevention By-law with the key elements and implementation strategies as described in this report will satisfy our municipal duty of care as intended in the Safe Drinking Water Act, and satisfy our corporate strategic priority to strengthen the high quality of life we already know and love.