

CITY OF VAUGHAN

EXTRACT FROM COUNCIL MEETING MINUTES OF DECEMBER 11, 2017

Item 1, Report No. 46, of the Committee of the Whole (Working Session), which was adopted without amendment by the Council of the City of Vaughan on December 11, 2017.

1 IMPLEMENTATION OF BACKFLOW PREVENTION BY-LAW

The Committee of the Whole (Working Session) recommends:

- 1) That the recommendation contained in the following report of the Deputy City Manager, Public Works, and the Director, Environmental Services, dated December 6, 2017, be approved; and**
- 2) That the presentation by the Director of Environmental Services and Communication C1, presentation material titled “Proposed Backflow Prevention By-law and Implementation Program”, dated December 6, 2017, be received.**

Recommendation

The Deputy City Manager, Public Works, and the Director, Environmental Services, in consultation with the Director, By-law & Compliance, Licensing & Permit Services and City Solicitor, recommend:

1. That Council adopt the proposed Backflow Prevention By-law, substantially in the form as set out in Attachment #1, to protect the water distribution system and public health.

Contribution to Sustainability

The proposed By-law will contribute to the following sustainability goals/actions, through Green Directions Vaughan:

Objective 1.4: To ensure efficient and appropriate use of potable water. The proposed By-law will regulate connections to the City of Vaughan’s water distribution system.

Economic Impact

There is no financial impact to the City as a result of the recommendations of this report beyond a ARR already identified and approved through the prior budget process to implement the program.

There will be a financial impact to existing property owners and developers as they will be required to secure backflow prevention devices and any associated permits or licenses. These exact costs will vary according to the type and number of devices required to be purchased and installed. The implementation of the backflow prevention program will be over a ten year period and properties will be prioritized based on a risk analysis as described in CSA B64 Standards and Guidelines.

Communications Plan

For the Backflow Prevention By-law and Implementation Program to be effective, public education and promotion to key stakeholders and Industrial, Commercial and Institutional (ICI), mixed-use and multi-residential property owners is of importance.

Environmental Services staff, along with Economic Development, Corporate Communications, and the Vaughan Chamber of Commerce, invited ICI representatives and other property owners to a public information and education awareness session on October 23, 2017. The proposed Backflow Prevention By-law and related Implementation Program were introduced, and positive feedback was received.

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Implementation Plan – Communication Strategies

The implementation plan includes communication strategies to inform industrial, commercial and institutional and mixed-use and multi-residential property owners of the proposed Backflow Prevention By-law and related Implementation Program

After Council approval of the proposed Backflow Prevention By-law, a range of communication strategies will be employed including information on the City's website; eCommunications outreach; mobile signs; and other methods. The messaging will be shared with our crucial stakeholders – including Access Vaughan, Councillor offices and the Chamber of Commerce.

Purpose

This report seeks Council's approval for the proposed Backflow Prevention By-law. The report also provides Council with an outline of the By-law and related implementation programs, which have been developed in line and to be compatible with those of the other municipalities in York Region and throughout the province.

Background - Analysis and Options

The proposed Backflow Prevention By-law regulates the installation and testing of backflow prevention devices

The most recent Ministry of the Environment and Climate Change (MOECC) Drinking Water Inspection Report supports the development of a program, policy or by-law related to backflow prevention as a measure to increase protection of the City's drinking water system.

The MOECC established a multi-stakeholder working group who were tasked with developing ideas/concepts for reducing the frequency and risk of cross-contamination/backflow incidents and the impacts they have on drinking water systems. The working group recognized that backflow prevention programs are needed and that the prevention of backflow is a critical component in ensuring the safety of the drinking water supply and public health.

The Backflow Prevention By-Law was also identified through the City of Vaughan's Internal Audit Department and included as a Management Action Item in the Audit report.

The proposed new Backflow Prevention By-law will regulate the installation and testing of backflow prevention devices to prohibit practices and other actions that may place the water distribution system at risk; and to establish a system of recourse and penalties for non-compliance for all new and existing ICI properties as well as mixed-use and multi-residential properties. As mentioned prior, these requirements are consistent with the City's Drinking Water Quality Management System (DWQMS) and Quality Management System (QMS) Policy.

The City's Water Distribution System is regulated by the Safe Drinking Water Act and adheres to the City's Drinking Water Quality Management System Policy

The policy states that:

As the owners and operators of the City of Vaughan's water distribution system we are committed to:

- providing safe drinking water to our residents and businesses
- complying with applicable legislation and regulations as related to the provision of safe drinking water
- implementing and continually improving the effectiveness of our Quality Management System.

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The City of Vaughan continues to provide safe drinking water to the residents and businesses in Vaughan. The Backflow Prevention By-law provides enhanced protection to the drinking water system and supports continuous improvement as outlined in the policy.

The installation of backflow prevention device is a continuous improvement initiative as it stops water from flowing from private property back into the water distribution system

Under normal conditions, water flows from the City's pressurized distribution system into the property owner's plumbing system and due to the water pressure cannot flow back into the water distribution system. Backflow is the reversal of direction of this flow and may occur due to either back siphonage or back pressure events.

- Back siphonage happens when the demand for water for a large firefighting event or a large watermain break pulls the water back from the private property plumbing.
- Back-pressure situation occurs when private water pressure is greater than the municipal water supply pressure in situations where private booster pumps, thermal expansion in boilers and elevated piping system exists.

Cross connection is any actual or potential connection between the potable drinking water system and any source of pollution or contamination. It includes any temporary or permanent connecting arrangement through which backflow may occur.

Back siphonage, back pressure and cross connections are all possible sources of backflow and the backflow prevention device is designed to prevent the reversal of water flow back into the City's water distribution system.

The City's Backflow Prevention By-law and Implementation Program aligns with the best practices of neighbouring municipalities

Currently, there are more than 50 municipalities in Ontario, including the City of Markham, Town of Richmond Hill, and Township of King who have implemented a Backflow Prevention By-law and successfully executed the program. The City's proposed Backflow Prevention By-law and associated implementation program mirror those of adjacent Regional municipalities such as York and Peel in terms of obligations of property owners and licensing requirements for device installations.

The City's Backflow Prevention By-law includes obligations, installation and testing requirement and penalties

The City's Backflow Prevention By-law is intended to establish guidelines and requirements for existing and new construction of ICI properties as well as mixed-use and multi-residential properties.

The highlights of the proposed Backflow Prevention By-law include:

1. Property Owner's Responsibility for the Prohibition of Cross Connections and Premise Isolation

The Owner is prohibited from making a cross connection. The by-law also states that the property owner is responsible for premise isolation, which is the separation of the private water system from the City's water supply. This is to ensure that the backflow prevention device is installed correctly downstream of the water meter on every structure or building where municipal drinking water is supplied.

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2. Persons Permitted to Perform Installation and Testing of a Backflow Prevention Device
This By-law provides guidelines to ensure the integrity of the installation and testing of the backflow prevention devices by stipulating that only testers who have the required qualifications can perform the installation and testing of backflow prevention devices.
3. Procedures for the Type, Installation, Testing, and Reporting Related to Backflow Prevention Devices

The by-law provides guidelines regarding the type, installation and field testing of backflow prevention devices all in accordance with current Canadian Standards Association (CSA) (B64) and American Water Works Association (AWWA) Standards.

The City of Vaughan's Design Criteria and Standards are developed in support of backflow prevention device requirement and installation on all new water service connection for industrial, commercial, institutional, mixed-use and multi-residential properties.

The By-law also refers to specific procedures for the post-installation reporting, which includes completion of documentation, of backflow prevention device.
4. Administration, Enforcement and Penalty Provisions
The By-law will be actively enforced and monitored for non-compliance of backflow prevention activities (i.e. survey, installation, testing, device upgrade completed within required time frames). The By-law also contains the procedures for City staff to pursue both convictions and financial damage recovery in events of non-compliance.

Vaughan's Backflow Prevention Implementation Program includes a phased approach to allow time for installation

The City of Vaughan's Backflow Prevention Implementation Program is designed to ensure that backflow prevention devices are installed on existing ICI as well as mixed-use and multi-residential properties within a ten (10) year period, in accordance with CSA (B64) and AWWA Standards. The program includes:

1. Phased Implementation of the Program
The program outlines the phases of the program implementation, providing detailed descriptions of each phase. The determination of phase order will be prioritized by assigning a risk factor of severe, moderate and minor based on CSA B64 Standards and Guidelines. A planning schedule for the entire program, from development to implementation, is provided to assist users to estimate time line for each of the phases.
2. Authority and Administrative Responsibility
A summary defining the authority and responsibilities of the City of Vaughan, the Property Owner, and the Certified Tester during each step of the process is included. Requirements for compliance and proposed enforcement for non-compliance are also provided.
3. Communication Plan
A communication plan will be created to inform businesses and ICI property owners about the new Backflow Prevention By-law. The plan will outline strategies for educating the public about backflow prevention, as well as those required to participate in the program such as building and facility owners and certified backflow prevention testers.
4. Backflow Incident Response Plan
The program contains a detailed response plan in the event that a backflow incident does occur. To address this, Standard Operating Procedures, an Incident Escalation & Response Plan and an Emergency Management Plan have been included.

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5. Quality Control, Monitoring, and Evaluation

This program will be monitored and reviewed each year for effectiveness and to ensure that any improvements, adjustments are implemented as required.

Relationship to Term of Council Service Excellence Strategy Map (2014-2018)

This report supports the following priorities set forth in the Term of Council Service Excellence Strategy Map (2014-2018):

- Invest, renew and manage infrastructure and assets
- Continue to cultivate an environmentally sustainable City
- Continue to ensure the safety and well-being of citizens

Regional Implications

There are no Regional implications as a result of the proposed Backflow Prevention By-law and corresponding Backflow Prevention Implementation Program.

Conclusion

The City of Vaughan currently does not have a Backflow Prevention By-law in place to regulate the introduction of backflow, to require backflow prevention devices, or to control cross connection, all of which support the quality and safety of our drinking water.

The proposed Backflow Prevention By-law and corresponding Backflow Prevention Implementation Program are intended to enforce our commitment to the protection of the City's drinking water, thereby reducing risks to public health and increase citizen confidence.

Attachments

Attachment #1: By-Law

Report prepared by:

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(A copy of the attachments referred to in the foregoing have been forwarded to each Member of Council and a copy thereof is also on file in the office of the City Clerk.)