



Report to: General Committee

Date Report Authored: December 21, 2011

SUBJECT: Backflow Prevention Program Status and Backflow
Prevention By-law Update
PREPARED BY: Rebecca Fei, Ext. 2687
Waterworks, Compliance Engineer,

RECOMMENDATION:

- 1) THAT the report entitled "Backflow Prevention Program Status and Backflow Prevention Bylaw Update" be received;
- 2) AND THAT Council enact the proposed Backflow Prevention By-law, as described in this report and in the form set out in Attachment 1;
- 3) AND THAT Council repeal the current Backflow Prevention By-law (By-law #2007-142);
- 4) AND THAT a Waterworks "Backflow Prevention Compliance Processing Fee" be approved in the amount of \$210/per Order to Comply, to encourage By-law compliance. And that "Backflow Prevention Compliance Fee" be included in the Fee By-Law (By-law # 2002-276);
- 5) AND FUTHER THAT Staff be authorized and directed to do all things necessary to give effect to this resolution.

PURPOSE:

The purpose of this report is to update Council on the status of Markham's Backflow Prevention Program and to seek Council's endorsement of the proposed Backflow Prevention By-law Update and approval of the Backflow Prevention Compliance Processing Fee.

BACKGROUND:

The Town of Markham enacted By-law #2007-142 for implementation of the Ministry of Environment's recommendations on the Town's Drinking Water Inspection Reports and instructed Staff to develop and administer a Town-wide Backflow Prevention Program.

There are approximately 36 municipalities in Ontario with various types of Cross Connection Control and Backflow Prevention Program in place, such as: "premise-isolation", "full program", etc. The Town of Markham is the only municipality in Region of York to have implemented the Backflow Prevention Program and Markham's program is a "full program". A "premise-isolation" program only requires applicable property owners to install backflow preventers at incoming water services to protect the municipal water system from potential contamination. A "full program" requires applicable property owners to install backflow preventers based on combining premise, zone, and source protection to ensure that both the public and private potable water supply systems

are protected from potential contamination caused by backflow incidents. In comparison with “premise-isolation” program, the “full program” requires intensive administration and systematic program management.

Environmental Services, Waterworks Division in conjunction with the Building Standards Department, the Clerk’s Department and Fire & Emergency Services Department has developed a comprehensive strategy of due diligence to minimize the risk of cross connections and backflow of non-potable water into Markham’s municipal drinking water system.

The Backflow Prevention By-law was enacted in 2007 and the greater details of the Backflow Prevention Program have just been well established to ensure effective delivery of the program. Staff recognized that there are some gaps between the Bylaw provisions and the Program requirements. In order to close those gaps and to accommodate **all** program requirements, the Bylaw update has been proposed and is in Attachment ‘A’ of this report for review and endorsement by Council.

OPTIONS/ DISCUSSION:

Town of Markham’s Backflow Prevention Program:

The Backflow Prevention Program is being delivered in phases over an 8 year period to approximately 2600 ICI (industrial, commercial and institutional) and multi-residential properties across the Town:

- *Phase I* (2009-2011) of the program (856 properties) includes approximately 560 properties ranked as a *Severe Hazard backflow risk*.
- *Phase II* (2012-2014) of the program (900 properties) is intended to be delivered to properties ranked as *unknown Hazard backflow risk*.
- *Phase III* (2015-2016) of the program (844 properties) is planned to be delivered to properties ranked as *moderate or minor Hazard backflow risk*.
- *Phase IV* (2017 onward) of the program (unknown amount) will be applied to single residential properties with connections to private fire protection, lawn sprinkler systems or with any auxiliary water supply.

Once the phased properties are brought into compliance with the By-law, ongoing administration of the program is required in order to implement re-surveying of cross connections of properties and annual testing requirements of existing backflow preventers.

The Town has developed a comprehensive strategy to implement the Program and enforce the By-law for safeguarding the Town’s drinking water system.

Program Compliance Rates:

The first phase of the Backflow Prevention Program has been rolled out to 33 % (856 properties) of the ICI & Multi-residential properties across the Town of Markham.

This includes 560 Phase I *high risk* properties, 58 Town owned facilities and 238 Voluntary properties;

To date, overall compliance rates of Phase I program:

- 88.2% (755 Properties) at full compliant stage;
- 11.6% (99 Properties) at partial compliant stage;
- 0.2% (2 properties) at non-compliant stage

Progressive enforcement is being undertaken to bring remaining property owners into full compliance with Backflow Prevention By-law. The Phase I program will be completed in early 2012 with continued maintenance required thereafter. The Phase II Program applying to 900 ICI & Multi-residential properties will commence in early 2012.

Correspondence & Customer Service:

- To attain compliance from the property owners, three notices are sent out to each property by registered mail with a specific timeframe. For partially responded customers, another notice is sent. The number of notices to each property depends on the response level from property owner and varies from 1 to 4. A total of 2400 notices were sent out to the Phase I property owners to date.
- A total of 780 customer service requests answered through phone calls or emails.
- A total of 2380 submissions (survey and testing reports) have been reviewed and entered into the database to date.

By-law Enforcement:

For properties that have no response and no submission within specific timeframe, the Waterworks Division forwards their files to the Clerk's Department for initiating legal proceedings. To date, 30 properties have been forwarded to the Clerk's department. Among them, 29 properties have become fully compliant with the Bylaw after their receipt of summons. The remaining property is currently working towards full compliance.

See Attachment 'B' of this report for full explanation of Markham's Backflow Prevention Program.

Backflow Prevention By-law Update:

The Backflow Prevention Program has been in place for 3 years and the details of the Program requirements have been established to ensure effective delivery of the program. Since the current Bylaw provisions were enacted in 2007, which is much earlier than the establishment of the Program requirements, staff recognized that there are some gaps between the Bylaw provisions and the Program requirements, such as: some Bylaw provisions do not clearly reflect the program requirements; several Program requirements are not strongly supported by the current Bylaw provisions; a few Program requirements have modified the related Bylaw provisions and require them to be updated accordingly. In order to close those gaps and accommodate all Program requirements and eliminate any confusion to our customers, the current Bylaw has to be updated.

The proposed Bylaw updates include: addition of new provisions for accommodation of the Program requirements and modification of existing provisions for consistency with the Program requirements, and improvement of existing provisions for reflecting the Program requirements. Through these updates, the Bylaw provisions have been clarified and improved. Meanwhile, all program requirements have been fully reviewed and supported by the Bylaw Department. The highlights of the Bylaw updates are below and the details of the Bylaw update are described in Attachment C of this report:

- 1) The **Survey Frequency** has been changed from “3-year Cycle” to “5-year cycle”. The “5-year cycle” frequency is practiced by the majority of municipalities. This change intends to mitigate financial impact on property owners with consistent business activity and building use functions as well as reduce administrative impact on the Town.
- 2) Persons permitted to carry out cross connection control work have been modified from “with required qualifications” to “with required qualifications plus registered with the Town”. This modification is to support the Town’s “**qualified person**” registration program for assisting property owners in hiring qualified persons to carry out cross connection control work.
- 3) “**Information Request Form Requirement**” Section and Definition of “Information Request Form” have been added. Based on requested information on the Form such as: property owner, primary contact, tenants and business activity, to allow the Town to rank the property’s hazard level and reach responsible contact if needed.
- 4) “**Corrective Actions on Cross Connection Control Deficiencies**” Section and Definition of “Device Upgrade Implementation Report” have been added. This addition is to ensure corrective actions taken by the property owner to address cross connection control deficiencies identified through “5 year cycle” survey or annual testing.
- 5) “**Fees**” Section has been added to support newly proposed “Backflow Prevention Compliance Processing Fee” resulting from non-compliance of property owners with the By-law and future administrative fees related to Backflow Prevention Program staff may propose to Council.
- 6) The collection of a Waterworks administrative fee (“**Backflow Prevention Compliance Processing Fee**”) in the amount of \$210 per “Order to Comply” is intended to deter customers from non-compliance. This Fee will apply to those property owners who do not comply with the Bylaw within a reasonable timeframe as indicated on the Notices received from the Town through registered mail and the Town has to issue an “Order to Comply” for compliance with the By-law.

FINANCIAL CONSIDERATIONS AND TEMPLATE:

The "Backflow Prevention Compliance Processing Fee of \$210 represents staff time and related administration costs to process each "Order to Comply" for non-compliant properties. The revenues generated by this new fee will be credited to the Waterworks Operating Budget and monitored during the year and will be addressed appropriately in the 2013 Operating Budget.

HUMAN RESOURCES CONSIDERATIONS

Not applicable

ALIGNMENT WITH STRATEGIC PRIORITIES:

Municipal Services / Public Safety – Markham's Backflow Prevention Program and Backflow Prevention By-law is intended to prevent the drinking water contamination through cross connections and potential backflow incidents. It complements other barriers of the multi-barrier approach to providing safe drinking water to the Town's residents.

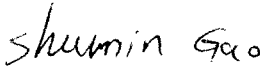
BUSINESS UNITS CONSULTED AND AFFECTED:

The following departments and business units were consulted during the preparation of the Backflow Prevention Bylaw update and this report:

- Building Standards
- Clerks
- Legal Services
- Fire and Emergency Services
- Finance

RECOMMENDED

BY:



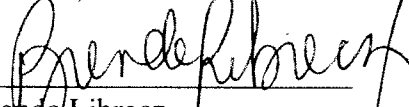
Shumin Gao

Acting Manager of System Engineering, Environmental Services



Peter Loukes

Director, Environmental Services



Brenda Librecz

Commissioner, Community and Fire Services

ATTACHMENTS:

Attachment "A" – Backflow Prevention Bylaw (2012-XXX) and Schedule "A – Authorized Functions List"

Attachment "B" –Markham's Backflow Prevention Program and Current Status

Attachment "C" –Summary of Markham's Backflow Prevention By-law Update