



Report to: General Committee

Date Report Authored: May 16, 2014

SUBJECT: Backflow Prevention Program Status Update
PREPARED BY: Rebecca Fei, Compliance Engineer – Ext 2687
Gord Miokovic, Manager, System Engineering – Ext 2519

RECOMMENDATION:

1. THAT the report entitled “Backflow Prevention Program Status Update” be received;
2. AND THAT Staff be authorized and directed to do all things necessary to give effect to this resolution.

PURPOSE:

This report is to update Council on the current status of Markham’s Backflow Prevention Program including initiatives to improve the efficiency and effectiveness of the program as delivered to our customers.

BACKGROUND:

Markham’s Backflow Prevention Program is a multiyear program intended to prevent drinking water contamination through cross connections and potential backflow incidents. The Program was authorized through By-law (No 2007-142) and updated by By-law No 2012-27. The Program is being delivered over eight years from January 2009 to December 2016 and applies to all Industrial, Commercial, Institutional (ICI) and multi-residential properties.

OPTIONS/ DISCUSSION:

Program is being delivered in 3 Phases

The Program is being delivered in three phases. The phases were delineated based on level of risk. Buildings with highest risk uses comprised Phase I.

To assist property owners, a “Qualified Persons” Registration Program was developed to support contracting backflow prevention work to qualified contractors. There are 154 companies currently registered in the program and 225 Qualified Persons.

All three phases have four requirements:

- 1) A Cross Connection Control Survey for each building/facility every 5 years;
- 2) Annual inspection and testing on each Backflow Device;
- 3) Periodic Cross Connection Control Survey which will determine any device upgrade requirements (new installations, repairs or replacements);
- 4) Only Qualified Persons can perform backflow prevention work

Phase I substantially complete

Phase I of the program has achieved a 93% compliance rate. Of the 872 high risk properties in Phase I, 66 locations have received at least two registered letters requiring device upgrades.

These locations are now at the stage of being issued “**order to comply notices**”. These orders will be mailed out in Q2 2014. The property owners will be given one month to address the issue prior to Markham taking any further by-law enforcement measures.

Phase II is 37% compliant

Phase II has 670 properties with 246 fully compliant. The non-compliant properties will be receiving a final notice requesting full compliance. These letters will be sent out in multiple batches over the next 3 months. They will be given a reasonable timeframe to comply. Order to comply notices to non-responsive properties will be issued in the December 2014 to March 2015 time frame.

Phase III will not be initiated until 2015.

Table # 1 below outlines the timing of the 8 year program implementation.

Table # 1: 8 Year Program

Program Phase	Number of buildings / facilities	Delivery Timeline (Year)	Compliance Status
Phase I	872	2009-2012	806 (93%) – Compliant 66 (7%) – Not Compliant
Phase II	670	2013-2014	246 (37%) - Compliant 524 (63%) Non-Compliant
Phase III	498	2015-2016	to start in 2015
City Facilities (Phase I)	157	2009-2010	100% Compliant
City Parks (Phase II)	95	2014-2015	to start in 2014
Total:	2292	8 years	1209 (53%) Compliant 490 (21%) Non-Compliant 593 (26%) yet to start

Backflow Prevention Program Optimization, Customer Service and Efficiency Initiatives

Markham’s program is one of the most comprehensive in Ontario. The program applies to every ICI and multi-residential property and has required a significant amount of effort to develop the various systems to support the program.

Information provided by property owners contained a significant amount of errors, omissions and incomplete submissions in Phase I and II with only a 53% compliance rate. As a result, these submissions required significant staff follow-up. In order to address this issue, an online

submission system was developed. The number of documents received from property owners since the start of the program is summarized in Table # 2 below.

Table #2: Reports Received and Processed to date

No. of Testable Backflow Devices installed on Phase I & II properties	2,730
No. of Backflow Device Inspection & Test Reports received	6,615
No. of Cross Connection Control Survey Reports received	1,415
No. of Device Upgrade Implementation Reports received	680

To provide excellent customer service and deliver the program in a reasonable timeframe, the following strategic priorities have been implemented:

- 1) A comprehensive website was developed in Q3 2012 to help educate impacted customers.
- 2) A Backflow Program brochure was developed and distribution started in Q3 2012.
- 3) As an education aid, ten videos were developed and posted on the City's website in Q2 2013.
- 4) A Backflow Portal was launched in Q2 2013 to enable test reports to be submitted online. The submissions were screened for content, completeness and validity prior to submission acceptance.
- 5) The Portal will be expanded in early Q3 2014 to allow all reports (Survey, Test, and Device Upgrade) to be submitted online. The Portal expansion will also provide property owners access to their property records so they can check on their compliance status.

To improve the efficiency of the program, the Portal design follows and mimics the manual work process. The Portal identifies the fields that have not been filled out correctly and helps customers with explanations. Incomplete forms are not accepted by the portal. This function has significantly helped the administrative workload. The 2014 enhancements currently being implemented should build on that success.

To improve program effectiveness, cross connection control guideline will be completed in early Q3 2014. Although Canada Standards Association (CSA) and Ontario Plumbing Code requirements are in place, a Survey Report can be subjective as to the degree of protection and the device that should be used. Survey Report findings may result in long term financial impact on property owners so the right device recommendation is critical. A technical guideline will standardize backflow prevention practices in Markham and assure that appropriate size backflow protection devices are used. A site visit/inspection process will begin in late 2014 to perform quality control on Survey Reports completed by private contractors.

Conclusion

Properties with backflow devices are required to have a routine maintenance program. These devices need to be tested annually with test reports submitted to the City. As the use of ICI facilities can change over time, every 5 years a new facility survey is required. These annual test and re-survey requests need to be prompted by Markham to ensure submission. To accurately record all information and track timelines for each property, specialized software is required. After completion of program rollout, more than 4,000 device test reports and 500 resurvey reports will need to be managed annually. For non-compliant locations, by-law enforcement measures may be required which could delay full program compliance into 2018.

With all the process improvements in place, the program rollout is still on target for full implementation by year end 2016. Staff will be providing a status update in 2016.

FINANCIAL CONSIDERATIONS AND TEMPLATE:

Not applicable.

HUMAN RESOURCES CONSIDERATIONS

At this time, there is no anticipated additional Backflow Program staffing implication.

ALIGNMENT WITH STRATEGIC PRIORITIES:

Municipal Services/Public Safety – Program is one of the components for assuring high quality safe drinking water is available for our residents.

BUSINESS UNITS CONSULTED AND AFFECTED:

The following departments are involved in those initiatives for Backflow Prevention Program:

- Building Standards
- Information Technology Services

RECOMMENDED**BY:**

for Peter Loukes, P.Eng.
Director, Environmental Services



Brenda Librecz
Commissioner, Community and Fire
Services

ATTACHMENTS: Presentation