Pilot Private Plumbing Protection Program for Flood Risk Reduction

General Committee – March 26, 2018

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Outline

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2. Background
3. Pilot Private Plumbing Protection Program
4. Financial Impact
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1. Purpose

To recommend a **Pilot Private Plumbing Protection Program** (5P) to complement existing Flood Control Program and wastewater system initiatives that reduce flood risks.

To fulfill September 26, 2017 Council resolution (Item 6):

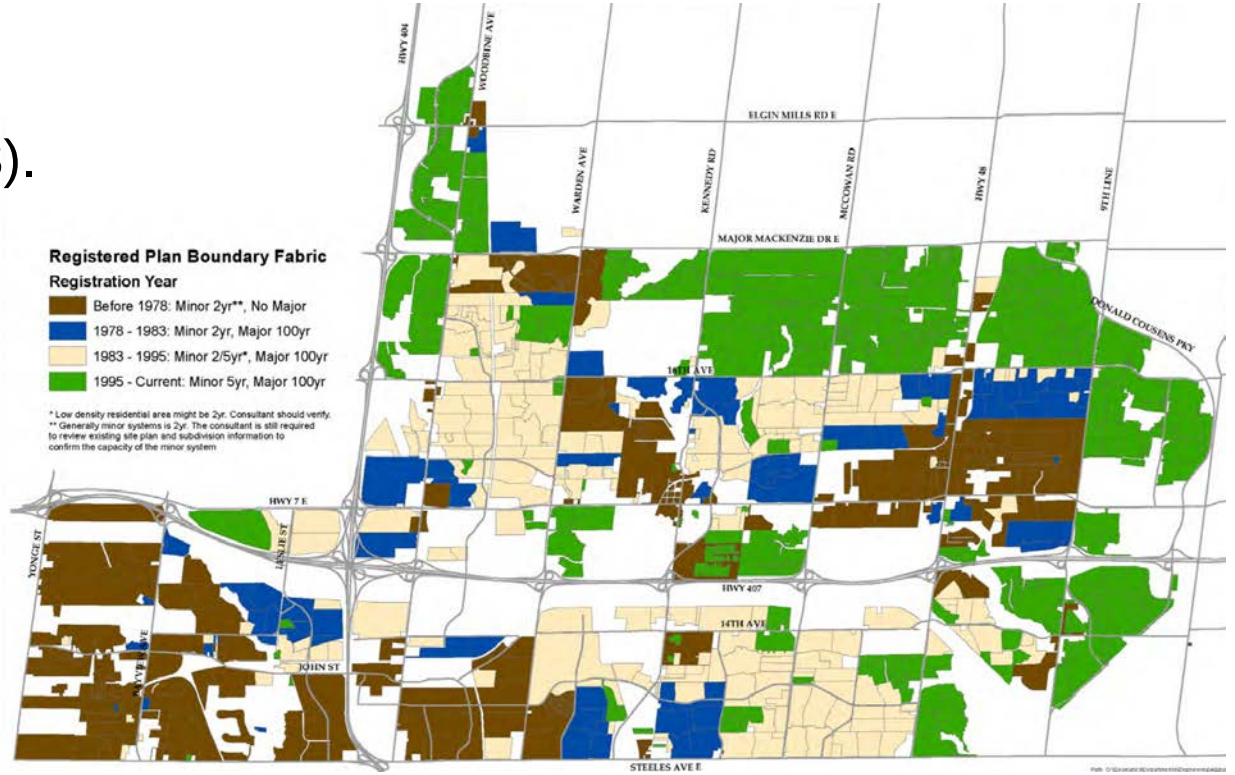
"That Staff report back on a proposed interim Private Property Plumbing Protection Program including backwater valve and sump pump subsidy program for high risk areas, which will include program criteria, budget requirements, funding source, communication plan and any potential rebate program with consideration to retroactive payment to 2017"

1. Purpose

The Flood Control Program and wastewater initiatives focus on areas with old design standards (pre-1983).

5P is cost-effective compared to major sewer upgrades when reported flooding is isolated.

5P can be targeted to the older, higher risk areas (brown and blue areas)



2.Background

What is Private Plumbing Protection?

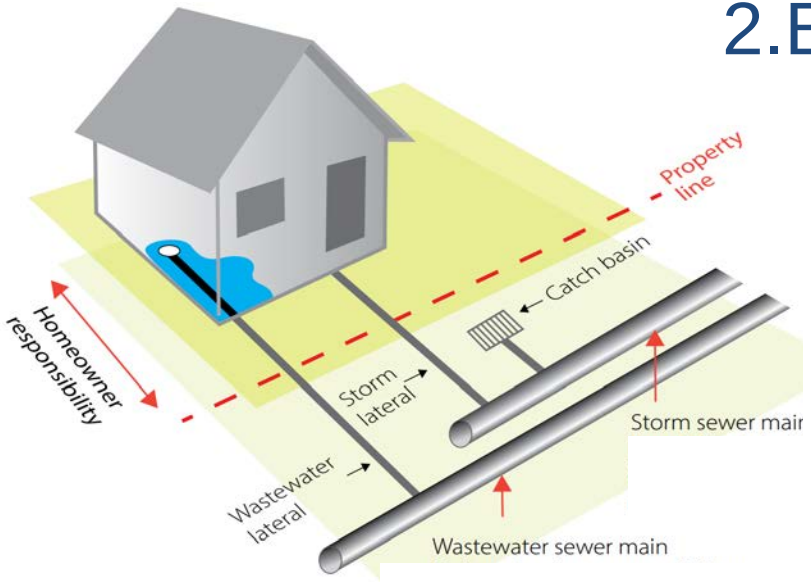
- It is a series of private-side plumbing and drainage system modification that helps isolate private properties from the municipal sanitary and storm collection systems.
- Markham's existing flood risk reduction activities focus on long-term municipal side upgrades (larger sewers) and some private-side activities (sanitary downspout disconnection).
- Private Plumbing Protection increases private-side risk reduction, targets specific-flood prone areas, and can be implemented in the short-term thus complementing other long-term capital programs.

2.Background

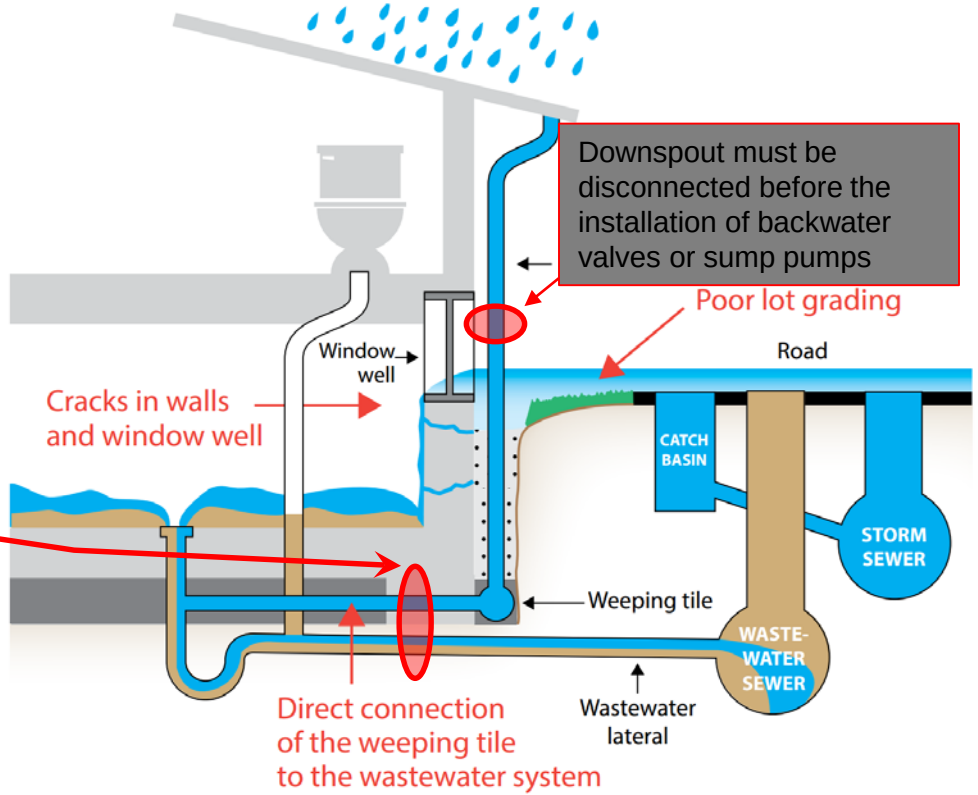
What is Private Plumbing Protection? (continued)

- Protection devices may include sump pumps and storm and sanitary backwater valves that help prevent basement flooding due to back-up of municipal storm or sanitary sewers
- Insurance companies are now promoting the installation of protection devices as a best practice that may increase policy eligibility for back-up coverage or increase coverage limits.

2.Background



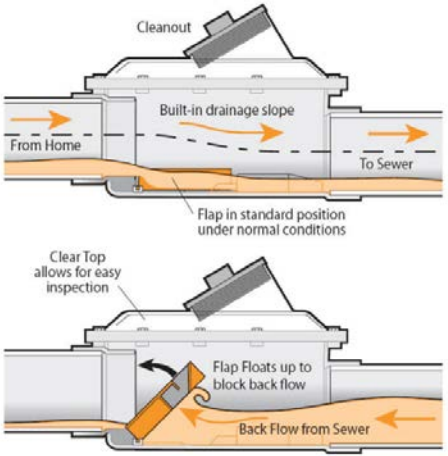
Backwater valves prevent reverse flow from public side sewers and sump pumps isolate foundation drains (weeping tiles) .



2.Background

What is a backwater valve ?

A device installed on sanitary or storm lateral allows water and sewage to flow out of the house and stops stormwater or sewage from flowing back into the house should the municipality sewer lines become overloaded during larger storm events. (building permits required)



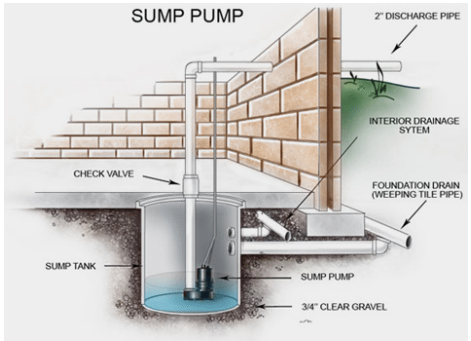
Backwater flow valve with plastic viewing cover.

Floor plate cover for backwater valve.

2.Background

Weeping tile disconnection and sump pump installation

Weeping tiles collect groundwater or infiltrated rainwater and directly connect to municipal sewer systems. Disconnecting weeping tiles from municipal sewers and installing a sump pump can help prevent infiltration flooding through foundation walls or floor when municipal sewers are surcharged during large storm events.(building permits and ESA certificate required)



2.Background

What are other municipalities promoting with rebates ?

Municipality	Program Name	Recommended Measures	Total Rebate Amount
Halton Region	Enhanced Basement Flooding Prevention Subsidy Program	Downspout disconnection, sump pump, backwater valves, lateral lining and repair	$8,175
Ottawa	Residential Protective Plumbing Program	building permit, CCTV of laterals; backwater valve; sump pump	$3,980
Branford	Basement Flooding Grant Program	sump pump, backwater valve, disconnection of downspouts	$3,000
Durham Region	Basement Flooding Loan Program Resulting From a Sanitary Sewer Backup	backwater valve and sump pump	$3,000
Hamilton	Protective Plumbing Program (3P)	backwater valve	$1,350
Kingston	Preventive Plumbing Program	backwater valve, sump pump, disconnection of weeping tile from sanitary sewer, rerouting of exiting sump pump	$3,000
London	Basement Flooding Grant Program	backwater valve, sump pump, storm private drain construction, sump pump for reverse slope driveway catch basin, backwater valve alarm	$9,840
Vaughan	Back Water Valve Installation Subsidy Program	backwater valve	$750
Toronto	Basement Flooding Protection Subsidy Program	backwater valve, new sump pump, alarm	$3,400
Windsor	Basement Flooding Protection Subsidy Program	backwater valve, sump pump, disconnection of foundation drain from sanitary system	$2,800
Thunder Bay	Flood Prevention Measures	sump pump, backwater valve, disconnection of weeping tiles from sanitary sewer	$3,750
Niagara Falls	Weeping tile Removal Assistance Program	sump pump installation, backwater valve	$3,900

Range of other Municipal rebate amounts

Maximum	**$9,840**
Minimum	**$750**
Average	**$3,912**
Median	**$3,200**

3. Pilot Private Plumbing Protection Program

- Proposed 5P Program will promote measures to complement existing city program and may offset other more expensive capital works in areas where flood risks are relatively low.
- Two year pilot program including two processes:
  - Retroactive installations (back to May 1, 2017)
  - New installations
- Rebate amounts will be offered on accepted flood risk reduction measures:
  1) Backwater valve on sanitary & Storm laterals
  2) Weeping Tile Disconnection and Sump Pump Installation
  3) Lateral relining/repair
- Rebate amounts are comparable to amounts offered by other municipalities (see table next slide).
- Restoration costs associated with implementation of measures are excluded (ineligible).

3. Pilot Private Plumbing Protection Program

Estimated Cost of Works and Proposed Rebates

Protection Measures	Market Cost	Proposed Markham Rebate Amount	Comparison City Rebate Amount
Backwater Valve - Indoor Sanitary	$1500 - $2300	$1,750	$1750 – Thunder Bay
- Indoor Storm	$1500 - $2300	$1,750	$1750 – Thunder Bay
- Outdoor Storm	~ $3000	$2,000	$1750 - City of Ottawa
Weeping Tile Disconnection - Redirect to Storm	$2500 - $5000	$3,000	N/A
- Sump Pump	$2600 - $8000	$5,000	$5000 – Halton Region
Lateral Relining - Storm	$3500 - $5000	$2,500	$2000 – Halton Region
- Sanitary	$3500 - $5000	$2,500	$2000 – Halton Region

- Total program cost varies depending on uptake rate, installation conditions and combination of protection measures considered by applicants
- A total program cost is estimated at $1.37M over the two year pilot period
- Pilot program will be re-evaluated at the end of 2nd year
- A by-law has been developed defining the eligibility requirements and eligible rebate amounts. The By–law will be reviewed and updated in two years

3. Pilot Private Plumbing Protection Program

Retroactive Installation Rebate Application Process

- Step 1: Property owners confirm eligible rebate amount for completed work
- Step 2: Property owners submit rebate application
- Step 3: City's consultant inspects completed works and recommends any additional measures
- Step 4: City issues rebate to Property owners
- Step 5: Property owners follow process for new installation for additional measures

3. Pilot Private Plumbing Protection Program

New Installation Rebate Application Process

- Step 1: Property owners determine required work in consultation with qualified contractor and confirm eligible rebate amount
- Step 2: Property owners submit building permit application
- Step 3: Building Department issues the permit
- Step 4: Property owners hire qualified contractor to complete the installation
- Step 5: Building Department inspects completed works
- Step 6: Property owners submit rebate application form including invoices to Environmental Services
- Step 7: City issues rebate cheque to Property owners

3. Pilot Private Plumbing Protection Program

Proposed 5P Program will be promoted by several means including:

At program initiation:

- Markham Portal (Markham.ca banner and news release), Social Media
- Markham.ca Web Page with program overview, how to apply for rebate, application form, contact info, and background resources
- Markham Life article
- Program brochure outlines who to contact, how to apply for rebate and what are eligible measures

On-going education / promotion:

- Direct mail-out to affected areas based on reported incidents (letter and brochure)
- Information Kiosks / Civic Centre Counter (program info brochure)
- Councillor Newsletters (including links to portal and brochure)
- City events – promotion along with WOW trailer (Unionville Festival, Markham Fair).

3. Pilot Private Plumbing Protection Program

Staff recommends the proposed 5P Program be supported by external consultants, R.V. Anderson, for the following reasons:

Technical Expertise & Proven Track record

- Has successfully completed projects of similar size and scope, both for the City of Markham (since 2012) and other municipalities. R.V. Anderson is proficient in public consultations and engagement, which are critical success factors for this type of projects.
- Is currently engaged on the West Thornhill Flood Control Project, has been involved in the Water and Wastewater Servicing Model Update for the City and Water and Wastewater Plan Update for York Region, is familiar with the City's sanitary collection system, standards, processes and procedures, York Region's wastewater system, and the local utility companies and approval agencies.

Cost savings, Efficiency & Interchangeability

Cost savings and efficiencies are expected through knowledge transfer and coordination with the ongoing West Thornhill Flood Control Projects and Markham Village and Unionville Flood Remediation Study. Any duplication of efforts/costs that would be associated with engaging another consultant is minimized.

Qualification of key personnel

Proposed project manager & team have strong background and experience in related work, including the West Thornhill Flood Control Project (and can apply previous experience and knowledge gained from that project to the proposed program).

Market Competitiveness

Project budget and billing rates are reasonable and competitive compared to recent public tenders for related work, and the recommended contract award complies with the CETA and CFTA trade agreements.

Scope of work includes:

- Verify completion of eligible work for retroactive applications
- Identify any additional protection work to reduce flooding risk
- Provide input to promotional literature
- Provide information to homeowners on maintenance requirements
- Site review and documentation

4.Financial impact

- Financial impact / program cost depends on estimated “uptake rate”.
- Based on 350 flood calls received from 3 large events in 2017, a maximum of 500 homes (estimated another 150 flooded homes that did not call the City) could potentially participate the program in the first two years.
- Two year pilot program cost estimates (approximately 250 homes):
  - Retroactive installation rebates: $515k
  - New installation rebates: $840k
  - Program education cost: $15K
  - Total cost: $1.37M

5. Recommended Resolutions

1) THAT the presentation "Pilot Private Plumbing Protection Program (5P) for Flood Risk Reduction", dated March 26, 2018, be received;

2) AND THAT Staff implement the 5P for Flood Risk Reduction starting May 1, 2018 with retroactive eligibility for rebates beginning on May 1, 2017;

3) AND THAT the tendering process for the Consulting Engineering Services to support the 5P for Flood Risk Reduction be waived in accordance with Purchasing By-Law 2017-8, Part II, Section 11.1 (h); which states that "where it is necessary or in the best interests of the City to acquire non-standard items or Consulting and Professional Services from a preferred supplier or from a supplier who has a proven track record with the City in terms of pricing, quality and service";

4) AND THAT the Consulting Engineering Services to support the 5P program be awarded to R.V. Anderson Associates Limited to an upset fee limit of $117,219 inclusive of disbursement, contingency and HST impact;

5. Recommended Resolutions (Continued)

5) AND THAT the 5P program cost of $1.37M be funded through the Stormwater Fee Reserve;
6) And THAT a new capital project in the amount of 1.37M be established for the “5P for Flood Risk Reduction”;
7) AND THAT the tendering process for the Consulting Engineering Services be waived in accordance with Purchasing By-Law 2017-8, Part II, Section 11.1 (h), and the Consulting Engineering Services contract be awarded to R.V. Anderson Associates Limited in the amount of $117,219 (to be funded from the new capital account);
8) AND THAT the remaining funds of $1,252,781 be retained and be used for the rebate and education for 5P program;
9) AND THAT the “Plumbing Protection Rebates By-law” substantially in the form appended to the presentation as Attachment “A”, be approved/adopted by Council;
10) AND THAT Staff report back in 2020 following the initial 2 year pilot and evaluate effectiveness of the program;
11) AND THAT Staff be authorized and directed to do all things necessary to give effect to this resolution.