

Environment and Sustainable Infrastructure Division

City of Hamilton's
Backflow Prevention By-Law #10-103

Overview

→ Community
→ People
→ Processes
→ Finance

- What is backflow?
- History and Legislation
- Premise Isolation
- Compliance
- Communication and Outreach
- Existing condition
- Uniquely Hamilton
- Unexpected benefits

Backflow - What is it?

What is Backflow?

Backflow is the flowing back of water or reversal of the normal direction of flow. When the reversal of the normal direction of flow occurs in a water distribution system a condition is created whereby potable (drinking) water may become contaminated. There are two types of backflow: Back Pressure and Back Siphonage

What is Back Pressure?

Back Pressure is a form of backflow caused by pressure that is greater than the water supply system pressure.

What is Back Siphonage?

Back Siphonage is a form of backflow caused by a negative or sub-atmospheric pressure in a water system.

What causes Backflow?

There are many reasons why backflow occurs. A common example is when a watermain break occurs, the pressure in the water distribution system drops to a point causing the reversal of flow of water back into the system. This is a known as back siphonage and if cross connections exist, contaminants can be drawn back into the potable water system.

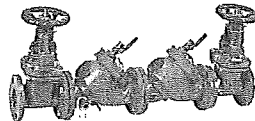
What is a Cross Connection?

A cross connection is any actual or potential connection between a potable water system and any source of pollution or contamination. A common example of a cross connection is a garden hose connected to a hose bib at one end and the other end of the hose lying in a pool, puddle or any other source of non-potable water.

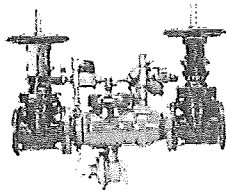
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Double Check Valve Assembly - Large



Reduced Pressure Principle - Large



Double Check Valve Assembly Large



Reduced Pressure Principle - Small

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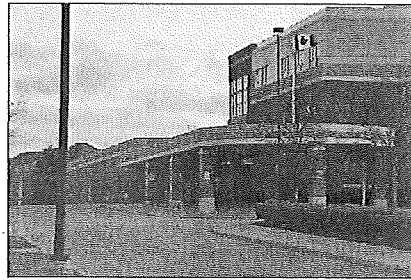
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Why do we need Backflow Prevention Programs?

Water contamination closes Oakville high school

04/21/2011 Sharon McKeown, CityNews.ca



Iroquois Ridge High School in Oakville. CITYNEWS.

Map

A water contamination problem means Iroquois Ridge High School in Oakville will be closed Thursday and Friday.

Chemicals contaminated the drinking water at the school on Gt. Britain Drive during regular maintenance Wednesday evening, according to a notice on the school's website.

"It is unclear whether students may have been exposed to contaminated water during the day," the school's notice said.

A daycare in the same building will be open Thursday.

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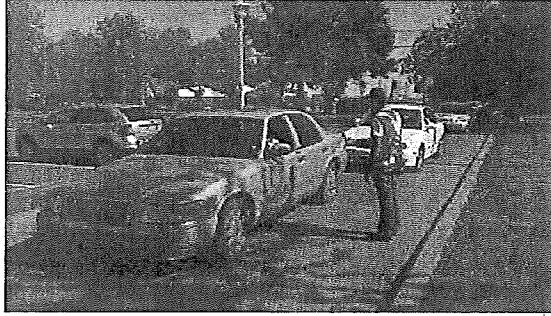
- Halton Region was advised by the Halton District School Board that **as a result of internal maintenance on the heating system** at Iroquois Ridge High School, which was carried out on Wednesday, chemicals used in the cleaning process entered the potable water system of the school. As a result the School Board closed the school for Thursday, April 21 2011. The school's potable water system is being flushed and tested.
- Halton Region has a Backflow Prevention Program in place that helps to prevent potential contaminants inside a building from entering the water distribution system," said Kiyoshi Oka, Halton Region's Director of Water Services. "In this case, the appropriate device was in place to protect the Region's water supply; however, staff are conducting localized water sampling as a precaution."

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Hundreds line up for water after Dorval advisory

Possible contamination prompts water alert

CBC News Posted Jun 3, 2011 2:23 PM ET | Last Updated Jun 3, 2011 7:06 PM ET



Cars line up for free water from the city of Dorval Friday evening. (CBC)

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- Processes
- Finance



- Hundreds lined up for free water from the City of Dorval after the municipality issued an alert warning residents not to use tap water until further notice.
- The city said because of an incident at an Air Canada facility at around noon on Friday, the municipality's water distribution network could be contaminated.
- Residents of Dorval, which is in Montreal's West Island, are advised to use bottled water for consumption, for cleaning food or for brushing their teeth.
- The mayor of Dorval said some stagnant water was accidentally fed into the drinking water supply by a contractor working on pipes at the Air Canada base.

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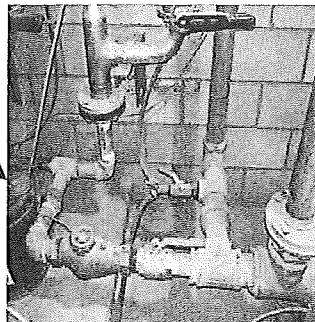
MILTON JANUARY 23 2011...

- Chemical injector pump had malfunctioned injecting about 11 gallons of corrosion control additive into the internal plumbing system
- Two RP backflow prevention devices at water meter contained the contaminant from entering the public water supply.

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Failed injector pump



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History and Legislation

Safe Drinking Water Act - Prohibition (Section 20)

20. (1) No person shall cause or permit any thing to enter a drinking water system if it could result in,

- (a) a drinking water health hazard;
 - (b) a contravention of a prescribed standard; or
 - (c) interference with the normal operation of the system.
- 2002, c.32, s.20(1).

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MOE Recommendations



Ministry of the Environment
Drinking Water System Inspection Report

SUMMARY OF BEST PRACTICE ISSUES AND RECOMMENDATIONS

This section provides a summary of all best practice issues identified during the inspection period. Details pertaining to these items can be found in the body of the inspection report. Best Management Practices are recommendations and not mandatory requirements, but may lead to safe drinking water for the consumer.

In the interest of continuous improvement in the interim, it is recommended that owners and operators develop an awareness of the following practices and consider measures to implement them so that all drinking water systems continuously improve their processes.

1. Backflow preventers were not installed at each service connection to Industrial/Commercial/Institutional and agricultural process that were considered high hazard facilities.

The City of Hamilton is in the final stages of developing their backflow prevention and cross-connection control programs. Staff and information management system components are in place and the City has implemented a public information program related to backflow prevention and cross-connections. They are completing the drafting of a by-law with the intent of presenting it to City Council by the end of 2009.

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The Walkerton Inquiry Report

Justice O'Connor's Recommendations

Part 2, Section 7 says in part:

"Distribution systems should have regularly tested backflow prevention valves that can prevent or at least isolate incursions."

"Infrastructure is also vulnerable to amateur cross-connections and their attendant risks of contamination."

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- Finance



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OWWA Ontario Pipeline Magazine

Volume 7, No 3, Fall 2011

- Every service connection should have premise isolation if the purveyor intends for the public system to be protected
- This is why most, if not all, bylaws require premise isolation as the **minimum requirement** for cross connection control.
- Cross connections could be made to the unprotected part of a system without anyone's knowledge.

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- Finance



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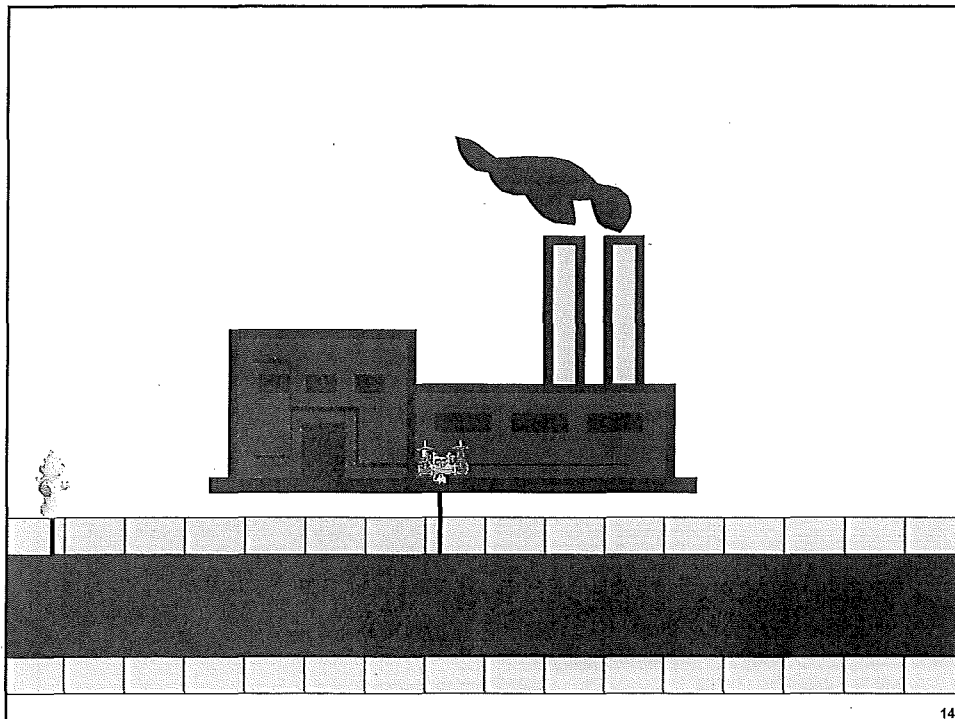
Four Types of Backflow Protection

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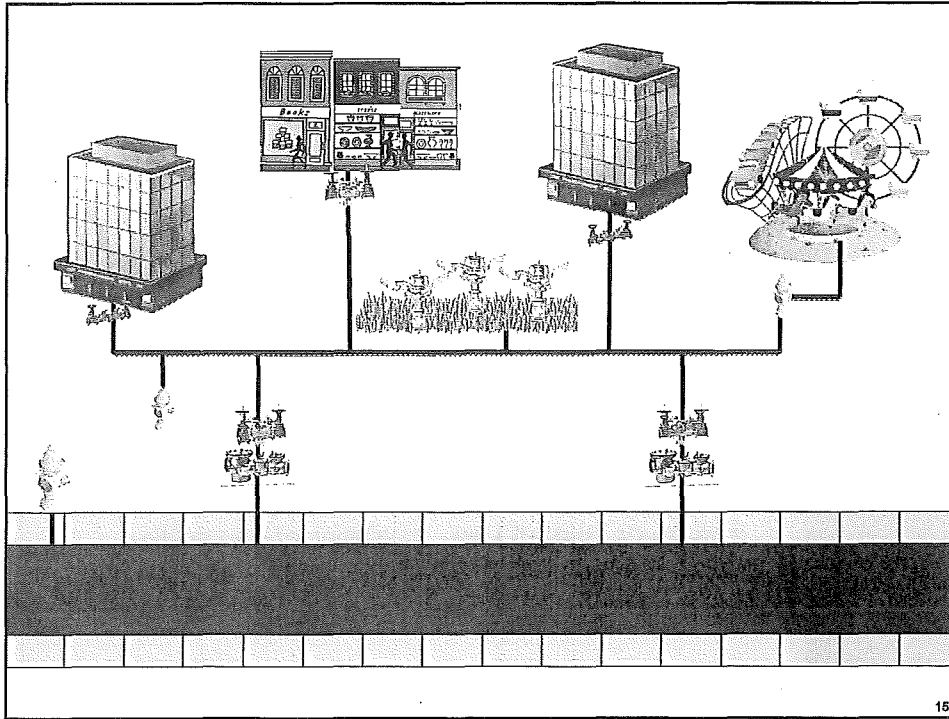


- **Premise Isolation** - installation of the backflow device at the point where the water service enters the building or property.
- **Area Protection** - all water downstream or after the backflow device may be potable and non potable water.
- **Zone Protection** - all water down stream or after the device is non potable water.
- **Fixture or Point of Use** - installation of the backflow device on an individual fixture or a piece of equipment.

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City	Population Served (1)	Service Connections	Impacted properties - businesses	Severe Hazard	Moderate Hazard	Administration of Program	Implementation Date of By-law	Program Type/Prop. Affected
Hamilton	606,000	157,000	6,674	As of Jan 1/04 - \$21	As of Jan 1/04 - 4,341	C.S.C.O.E.S.I.	May 12 2010	Premises ICI Multi Res
Brantford	90,100	31,472	1,295		235	Env. Serv./Build Dept.	May 7 2007	Premises ICI Multi Res
Barrie	69,424	11,600	2,795		450	Water Operations	Aug 18 2009	Premises/Source/Zone ICI Multi Res
Georgina/Town of	42,314	n/a	n/a		n/a	Public Works	Jan 1 2009	Premises ICI Multi Res
Cambridge	602,377	38,819	2,200		654	Water Works/Build Dept.	July 18 2003	Premises/Source/Zone ICI Multi Res
Gimelby	21,937	n/a	n/a		n/a	Public Works/Env. Serv.	Sept 21 2009	Premises/Source/Zone ICI Multi Res
Guelph	14,943	34,000	2,200		230	Building Services	March 12 2009	Premises/Source/Zone ICI Multi Res
Halton Region	490,000	67,500	7,000		n/a	Public Works/ Water Serv.	Nov 18 2005	Premises ICI Multi Res
Kingsville	20,500	7,173	000		18	Build Dept.	March 5 2001	Premises/Source ICI Multi Res
Kingston	117,297	n/a	n/a		n/a	Environment/Build	June 20 2006	Premises/Source/Zone ICI Multi Res
Kitchener	204,669	53,826	4,000		200	Build Dept.	July 2 2002	Premises/Source/Zone ICI Multi Res
Municip.	31,115	n/a	n/a		n/a	Water Dept.	Sept 10 2001	Full Program f all properties
Niagara	217,222	n/a	n/a		n/a	Build Dept.	Nov 1 2005	Premises ICI Multi Res
London	352,255	152,000	1,850		1,650	Build Dept.	Jan 24 2005	Premises as requested and Prop.
Markham	242,109	70,551	2,000		600	Water Works	June 28 2007	Premises/Source ICI Multi Res
Midland	8,700	8,700	240		100	Build Dept./Water Dept.	Nov 28 2005	Full Program f all properties
Milton	8,164	n/a	n/a		n/a	Public Services	Nov 6 2009	Premises/Zone/Area as requested
Orillia	30,290	8,513	787		117	Public Works/Env. Serv.	Oct 2 2006	Premises ICI and large Water users
Ottawa	655,000	200,000	3,278		n/a	Public Works	Pending Approval	Premises/Zone ICI Multi Res
Peel/Co.	716,000	n/a	n/a		n/a	Build Dept.	April 2 2007	Premises/Source/Zone ICI Multi Res
Penetanguishene	8,354	n/a	n/a		n/a	Public Works	Dec 3 2009	Full Program f all properties
Peterborough	74,831	28,311	1,095		380	Peterborough Utilities	May 17 2007	Premises/Source/Zone ICI Multi Res
Prescott	4,820	n/a	n/a		n/a	Public Works	Feb 6 2006	Premises as requested
St. Catharines	101,363	40,000	1,230		450	Operational/Build Dev.	July 18 2005	Premises/Source as requested
(Dundas)	7,817	820	14		7	Env. Serv. Div.	Dec 20 2005	Premises/Source/Zone ICI Multi Res
Stratford	30,451	11,000	887		153	Build Dept./Water Dept.	March 22 2004	Premises/Source/Zone ICI Multi Res
St. Thomas	35,100	45,000	850		120	Env. Serv. Div.	April 2 2000	Premises ICI on any Property
Thunder Bay	103,160	35,000	n/a		n/a	Water Works	May 28 2009	Premises ICI Multi Res
Toronto	2,509,291	470,200	25,000		8,200	Water Dept.	Jan 1 2009	Premises ICI Multi Res
Town of Lakeshore	32,215	n/a	n/a		n/a	Public Works	Feb 15 2001	Premises ICI
Township of Centre Wellington	26,019	8,432	265		n/a	Build Dept./Water Serv.	May 20 2007	Premises/Source/Zone ICI Multi Res
Township of Dumfries	9,427	1,671	n/a		n/a	Build Dept.	Oct 15 2007	Premises/Source/Zone ICI Multi Res
Waterloo	97,476	30,000	1,800		n/a	Build Dept./Water Dept.	March 28 2010	Premises/Source/Zone ICI Multi Res
West Gwillimbury	8,000	n/a	n/a		n/a	Public Works	June 20 2005	Premises ICI
Windsor	128,473	72,450	8,560		n/a	Water Utilities/Teleserv	Dec 8 2008	Premises/Source/Zone ICI Multi Res
Peel Region	183,405	n/a	n/a		n/a	n/a	Peel Region is currently in the process of creating a By-law	

Population of properties protected with a By-law Implemented and pending	Population of Ontario	Number of towns and Municipalities in Lower Upper Tier and Single	Number of towns and Municipalities in Ontario that have passed by-laws or have pending by-laws	With only 35 by-laws implemented or pending this is the percentage of the population protected
6,242,414	13,159,000	444	25	52.65%

This % does not include the Region of Peel

Compliance Requirements

- Community
- People
- Processes
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- Nov. 12, 2010 - compliance date for all self assessments and full surveys to be submitted to the City
- Nov 12, 2011 - compliance date for high hazard properties to install/test devices
- May 12, 2012 - compliance date for all affected properties to install/test devices
- Unique feature of by-law is the self assessment component for properties with 38 mm service or smaller

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Compliance to date...

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Property Type	Survey Completed (Nov 12, 2010)	Device Required (HH Nov. 2011)	Device Installed
Full Survey (2271 Properties)	74%	26% (HH) 74% (MH)	18% May-12
Self Assessed (4364 properties)	72%	7%	

Note: Compliance numbers based on service connections not properties as of January 2012

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Community Outreach

2008

November Two Public Consultation Sessions held

2010

May 12 Backflow Prevention By-law #10-103 was passed

May 25 Backflow Prevention By-law #10-103 letters sent to all ICI property owners

June 9 Two Public Information Sessions held

August 6 Backflow Prevention Program Letters sent to Property Owners informing them of the by-law and its requirements

October 12 Backflow Prevention Program reminder letter sent to all properties who had not submitted their Surveys (both Self-Assessed and Cross-Connection)

November 12 Due Date for submission of Self-Assessed and Cross-Connection Surveys

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Hamilton
Public Works

Community Outreach

2011

February 7 Sent the 1st non-compliance letter to properties that had not submitted there Cross-Connection surveys.

February 16 Sent out invitations to all the companies on our Approved Contractors List inviting them to attend an information session detailing their roles and responsibilities with this program

Members of the Building Department were in attendance to answer contractor's questions

August 15 First non-compliance letter to properties who have not completed the "Self-Assessed" Surveys

Second non-compliance letter for properties who have not completed the "Cross Connection Control" surveys

The first back flow prevention device installation reminder letter for high hazard properties

October 21 Final Notice letter sent to all properties who have not submitted their surveys

November 12, 2011 - Deadline

November 17 Post deadline notice letters for both cross connection control and self assessed surveys

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Hamilton
Public Works

Community Outreach

Further effort was made to reach out to larger companies/institutions with a presentation that explained our by-law and how it impacts them.

These included:

- Hamilton Port Authority
- Hamilton District School Board
- Hamilton Separate School Board
- Arcelor Mittal
- National Steel Car
- Effort Trust
- St Joseph Group of Hospitals
- Hamilton Health Science
- Nelson Steel
- Hamilton Specialty Bar
- McMaster University

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Examples of Current Conditions...



The following picture was taken from a property in Hamilton that was discovered through the self assessed survey for small diameter services.

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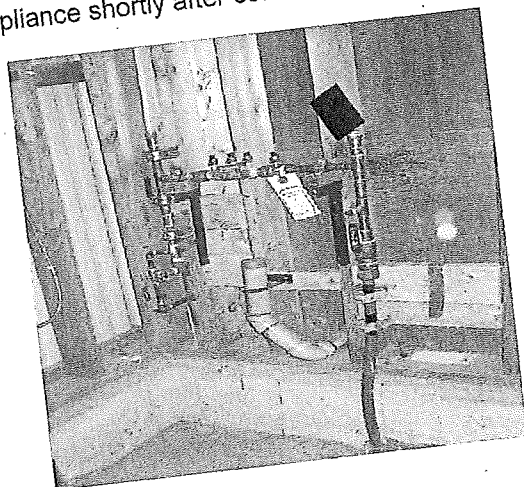


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Examples of Current Conditions...

New construction that unknowingly went out of compliance shortly after construction was completed...

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- Processes
- Finance



- Community
- People
- Processes
- Finance



AREA PROTECTION

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- Processes
- Finance

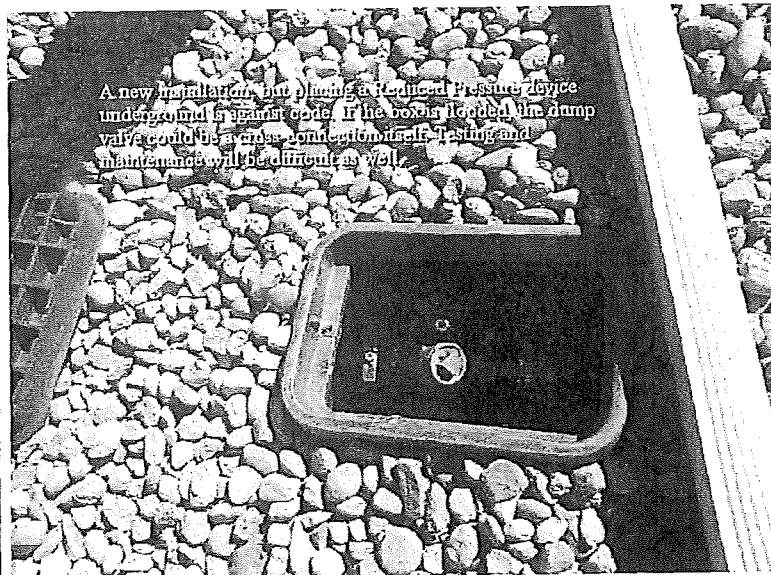


Backflow preventer has been altered (see sprigot attached to #2 test port), looks to be modified, and shows no sign of recent maintenance or testing.

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ZONE PROTECTION

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- People
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A new installation, but placing a reduced pressure device underground is against code. If the box is flooded the dump valve could be a clear condition itself. Testing and maintenance will be difficult as well.

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Hamilton's program

- Community
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- Processes
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Hamilton
Public Works

- Hamilton's program is unique in the Province in that some property owners can assess their own property and save costs
- Communication and Outreach

- Environment & Sustainable Infrastructure
- Parks
- The Mill Valley Project
- Catchment
- Corporate Facilities Management
- Office of Energy Initiatives
- Real Infrastructure and Operations
- Traffic Engineering and Operations
- Trails Management
- Water & Wastewater
 - Sewer
 - Contact Us
 - Hamilton Children's Water Festival
 - Reports & Plans
 - Conservation & Education
 - Drinking Water
 - Programs
 - Backflow Prevention Program
 - Sewer Lateral Management
 - Four Water Programs
 - Waste Water Abatement
 - Leak Free Program
 - Hydrographic Conveyance
 - Water Meter Program
 - Water Meter Use
 - Fees
 - Facilities Parking Program (FPP)
- Right-of-Way Management
- Public Works Department
- Events and Promotions
- Transit
- Together, we're caring for our environment
- Culture and Recreation
- Public Health Services & Social Services
- Projects & Initiatives
- News and Publications
- Your Elected Officials
- Hot Topics
- Business & Industry
- Tourism & Visitor Info

Popular Links
Hamilton Public Library

Backflow Prevention Program

City of Hamilton Backflow Prevention Program Update:

The City of Hamilton delivers safe and clean drinking water to all homes and businesses. To further ensure that the system is protected on May 12, 2010 Hamilton City Council passed a new By-law referred to as the Backflow Prevention By-law #10-103.

The Backflow Prevention By-law will affect all industrial, commercial, institutional properties and multi-residential properties 4 stories or higher.

All property owners will be required to submit a Cross Connection Survey or Self Assessment Survey to determine the hazard level associated with their property. All surveys are required to be completed and submitted to the City of Hamilton, 330 Wentworth Street North, no later than November 12, 2010.

Compliance dates for the installations of the backflow prevention devices will be based on the hazard level of your property, the hazard level is determined from the outcome of your survey. If the hazard level of your property is high or severe your compliance date for the installation of your backflow prevention device will be no later than November 12, 2011.

For all other hazard levels your compliance date is May 12, 2012. All backflow prevention devices will require an initial test upon installation and annually thereafter. The test results must be received by the City of Hamilton no later than 14 days after the test has been completed.

With the exception of the Self Assessment Survey all surveys, installation and testing to be done under the program must be carried out by a contractor that has been approved and is registered with the City under the program. Please refer to the Approved Contractors List.

The City will be mailing out letters to all property owners affected by this By-law to invite them to attend public meetings.

Program:

The program focuses on the isolation of private water systems from the City's water distribution system by means of "PREMIERE ISOLATION" which refers to the prevention of backflow or the reverse flow of water into the City's water distribution system from an owner's building, structure or property by the installation of a suitable Backflow Prevention Device located on the property owner's water service line at the entrance of such building, structure or property. Not sure what steps are required to get into compliance? Check out the [Step-by-Step Process](#) page.

The [Backflow Prevention Process](#) page will give you an idea what type of protection your property may require in regards to the device selection for premise isolation, whitetail building point of use protection.

Still have questions? Visit our [FAQ](#) page to find out more about backflow prevention or contact:

Water and Wastewater Customer Services:
(800) 849-4423
or



[Backflow Prevention](#)
[By-Law](#)

[Backflow Prevention Self Assessment and Cross Connection Survey](#)

[Backflow Prevention Program Approved Contractors List](#)

[Backflow Prevention Program Self Assessment](#)

[YouTube](#)
[Self Assessment Survey Video](#)

[Backflow Prevention FAQ](#)

[What are the steps to a Self Assessment?](#)

[Contract Requirements for Backflow Prevention](#)

[Approved Contractors List](#)



SELF ASSESSED CROSS CONNECTION SURVEY
TO BE COMPLETED BY PROPERTY OWNERS

City of Hamilton
Backflow Prevention Program
330 Westworth Street North
Hamilton, Ontario L8L 5W2

PW-WW-CS-F-013-004 - Rev #4

Date of Survey: (mm/dd/yyyy) _____

It is an offence under the Backflow Prevention By-law to submit a Self Assessed Cross Connection Survey form that contains inaccurate or false information. Please complete the information below as requested in accordance with the Backflow Prevention By-law #10-103.

If your property or building has more than one business located on it, this survey must be completed for each business located on your property.

1	Facility or Business Name:				
2	Facility or Business Address:	Street No:	Street:	Postal Code:	
		City:		Phone No:	
3	Property Owner's Name:	Name:			
		Address and Phone No:	Street No:	Street:	Postal Code:
			City:		Phone No:
4	Contact Person if Different than Owner:	Phone No. _____			

PROPERTY OWNER'S SIGNATURE: _____ DATE: _____

5 If you fall under any of the listed types of properties or facilities below, please check the box beside that type of property or facility.

<input type="checkbox"/> Animal feed lot or animal stock yard:	<input type="checkbox"/> Fish farm or fish hatcheries	<input type="checkbox"/> Plating shop
<input type="checkbox"/> Aquaculture farm:	<input type="checkbox"/> Food processing plant	<input type="checkbox"/> Power generating facility
<input type="checkbox"/> Aquarium (public)	<input type="checkbox"/> Garbage transfer facility	<input type="checkbox"/> Printing plant
<input type="checkbox"/> Asphalt plant	<input type="checkbox"/> Hospital	<input type="checkbox"/> Pulp and/or paper plant
<input type="checkbox"/> Beverage processing plant	<input type="checkbox"/> Laboratory	<input type="checkbox"/> Recycling facility
<input type="checkbox"/> (includes distillery and brewery)	<input type="checkbox"/> Laundry facility	<input type="checkbox"/> Refinery, petroleum processing
<input type="checkbox"/> Blood clinic	<input type="checkbox"/> (commercial only not coin operated)	<input type="checkbox"/> Research facility
<input type="checkbox"/> Campsite with RV hook-ups or dump-stations	<input type="checkbox"/> Marina (pleasure boat)	<input type="checkbox"/> Sewage dump station
<input type="checkbox"/> Carwash	<input type="checkbox"/> Meat packing plant	<input type="checkbox"/> Sewage treatment plant
<input type="checkbox"/> Chemical plant	<input type="checkbox"/> Medical clinic (surgical)	<input type="checkbox"/> Steel manufacturing plant
<input type="checkbox"/> Concrete plant	<input type="checkbox"/> Milk processing plant	<input type="checkbox"/> Veterinary clinic
<input type="checkbox"/> Dental surgery facility	<input type="checkbox"/> Mining facility	<input type="checkbox"/> Waste disposal plant
<input type="checkbox"/> Dock and marine facility	<input type="checkbox"/> Mortuary or morgue	<input type="checkbox"/> Wastewater facility
<input type="checkbox"/> Dry cleaning plant	<input type="checkbox"/> Oil refinery	<input type="checkbox"/> Wastewater pump station
<input type="checkbox"/> Dye plant	<input type="checkbox"/> Paint manufacturing plant	<input type="checkbox"/> Wastewater treatment plant
<input type="checkbox"/> Exhibition grounds	<input type="checkbox"/> Petroleum processing or storage facility	<input type="checkbox"/> Water filling station
<input type="checkbox"/> Film or photo processing facility	<input type="checkbox"/> Pharmaceutical manufacturing facility	<input type="checkbox"/> Water treatment plant
<input type="checkbox"/> (that uses chemicals)	<input type="checkbox"/> Plastic manufacturing plant	<input type="checkbox"/> Water treatment pump station
		<input type="checkbox"/> Zoo

If you have NOT checked off any of the above, please continue to fill out the remaining pages and submit all 3 pages to the above address.
If you HAVE checked off any of the above properties or facility types, then you are not required to complete any more information on page 2 or 3 but are required to fully comply with the Backflow Prevention By-law. Please submit page 1 to the above address. page 1

PW-WW-CS-F-013-004 - Rev #4

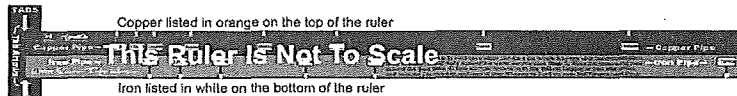
6	Indicate the serial number of your water meter as listed on your Horizon utility bill under "Meter Number" beside "Water." It will be a 8 digit number.		
7	Indicate the size of your City water meter located at your water service line entering your building or property as listed on your Horizon utility bill under "Meter Type" beside "Water."		
8	Describe the size and type of your water service line entering your building or property using the measuring tape provided by the City of Hamilton (accessed with this form)		
9	Describe the type of business activity below (please be specific, i.e. dry cleaner, shoe store, dental office, pet store, real estate office, variety store, hair dresser, etc)		
10	Does your building or property have a separate water service line for a Fire Suppression System (sprinkler heads for fire) <input type="checkbox"/> Yes <input type="checkbox"/> No	If your property or building has a fire suppression system, does it contain any chemicals or additives other than water <input type="checkbox"/> Yes <input type="checkbox"/> No	
11	If your building or property has a separate water service line for a Fire Suppression System indicate the size in mm using the measuring tape provided: _____ mm		
12	Please list any other equipment or process connected to your water service line that uses City water that has not been indicated on page # 3 (Water use information) of this form:		

For Office use Only: TRN #	Degree of Hazard:	Backflow Device Required	Date C.C.C.S. Form Received:
Comments: Is this building or property required to comply at this time.	Moderate <input type="checkbox"/> High <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/> RP <input type="checkbox"/> DCVA <input type="checkbox"/>	_____

Step 6 & 7
Example from
Horizon Bill

Your Usage For This Period			
Meter Number	Meter Type	Reading In Amt. (at Start)	Reading At End Of Period
1123456	Copper	1234	1234
789012	Iron	5678	5678

Step 8
Water Service
Tape Measure



- Directions for using the Water Service Tape Measure
- 1: Find your water service pipe where it enters your building/property
 - 2: Hold "TABS" tight against the water service pipe
 - 3: Wrap the measuring tape around the pipe
 - 4: Line up "Tab Arrows" with the closest Copper or Iron MM arrow
 - 5: Indicate this MM number and type of pipe above in Step 8

Water Use Information		YES	NO	If answered yes to any of these questions and a Backflow Device is present enter the device type from selection below
Does the building or property use City water in any manufacturing, industrial or process applications? If yes, please specify how it is used:		<input type="radio"/>	<input type="radio"/>	
Does the property use any hazardous or toxic materials or chemicals that has a connection to the City water supply?		<input type="radio"/>	<input type="radio"/>	
Do any hot water boilers, steam boilers, heat exchangers exist on the property?		<input type="radio"/>	<input type="radio"/>	
If yes does any of this equipment use chemical additives?		<input type="radio"/>	<input type="radio"/>	
Does your property have a lawn irrigation system that uses any type of chemical injection?		<input type="radio"/>	<input type="radio"/>	
Does your property have any type of water supply other than the water supplied by the City?		<input type="radio"/>	<input type="radio"/>	
Does your property have any cooling towers or chillers?		<input type="radio"/>	<input type="radio"/>	
Are there any solar heating systems on the property?		<input type="radio"/>	<input type="radio"/>	
Is there any autopsy or mortuary equipment of any kind located on your property?		<input type="radio"/>	<input type="radio"/>	
Is there a kitchen food (dish) washer with a direct City water supply connected to the washer located on your property?		<input type="radio"/>	<input type="radio"/>	
Do you have any type of automatic chlorinating/de-chlorinating equipment on your property?		<input type="radio"/>	<input type="radio"/>	
Do you have any water cooled equipment on your property with a solenoid valve after the compressor (walk in cooler, ice units)?		<input type="radio"/>	<input type="radio"/>	
Are there any industrial washing machines located on your property (anything other than a coin operated laundromat)?		<input type="radio"/>	<input type="radio"/>	
Is there any type of dental or surgical equipment with a connection to your internal water piping located in your building?		<input type="radio"/>	<input type="radio"/>	
Do you have any type of food processing equipment on your property that is directly connected to your City water supply? If yes, please specify how it is used:		<input type="radio"/>	<input type="radio"/>	
Do you supply any type of foodservice facilities (water supply to any type of pressure craft)?		<input type="radio"/>	<input type="radio"/>	
Is there any type of photo processing equipment located on your property that is connected to your City water supply?		<input type="radio"/>	<input type="radio"/>	
Do you have any type of water re-circulating system on your property?		<input type="radio"/>	<input type="radio"/>	
Do you use any type of degreasing equipment that is connected to the City water supply on your property?		<input type="radio"/>	<input type="radio"/>	
Is there a power washer with chemical additives on your property?		<input type="radio"/>	<input type="radio"/>	
Do you use any type of automatic chemical dispensers?		<input type="radio"/>	<input type="radio"/>	
Do you have any type of carbide washing equipment/carbonate disposal equipment that has a City water supply connected to it?		<input type="radio"/>	<input type="radio"/>	
Is there any commercial ice making equipment located on the property?		<input type="radio"/>	<input type="radio"/>	
Do you have any livestock equipment with a connection to your City water supply?		<input type="radio"/>	<input type="radio"/>	
Do you use any type of radiator flushing equipment?		<input type="radio"/>	<input type="radio"/>	
Is your property equipped with any type of sewage cume that is connected to your City water supply?		<input type="radio"/>	<input type="radio"/>	
Do you have any type of wash tanks on your property that is connected to your City water supply?		<input type="radio"/>	<input type="radio"/>	
Do you use City water to supply any type of water hauling equipment?		<input type="radio"/>	<input type="radio"/>	
Does your property have any x-ray equipment?		<input type="radio"/>	<input type="radio"/>	
Device Selection for Property/Building Cross Connections found:				
DCAP- Dual check valve type with atmosphere port	DUC- Dual check valve type	RPDA- Reduced pressure detector assembly		
LFBV- Laboratory faucet type vacuum breaker	LACV- Listed stem check valve	DCDA- Double check detector assembly		
HCVB- Hose connector type vacuum breaker	AG- Air gap			
AVB- Atmospheric type vacuum breaker	DCVA- Double check valve assembly			
RCV- Resistant seated check valve	PVB- Pressure type vacuum breaker			
RP- Reduced pressure principal type	N- None			

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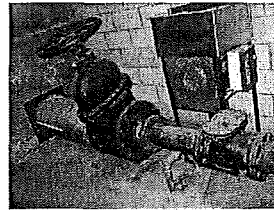
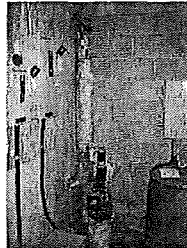
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 The City of Hamilton's Backflow Prevention Program. how to complete the Self Assessed Survey.

Unexpected Benefits

- To date it is estimated that the City has recovered approx \$140,000 in unaccounted for consumption
- Property owner became aware of potential water quality concern from a 12" emergency supply line and as a result is abandoning it

→ Community
→ People
→ Processes
→ Finance



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Questions



→ Community
→ People
→ Processes
→ Finance



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