

Water Protection: A Multiple Barrier Approach

From the source to the tap, Halifax Water ensures top quality water is delivered to our customers. To protect its water supplies, including Lake Major, Halifax Water uses a multi-barrier approach that involves a system of checks and balances from the source to the tap, as well as a step process that achieves the goals set out in the [Drinking Water Strategy for Nova Scotia Action Plan](http://www.gov.ns.ca/nse/water/docs/NSWaterStrategy.pdf) <http://www.gov.ns.ca/nse/water/docs/NSWaterStrategy.pdf>. These systems and processes are illustrated and described in more detail in previous issues of the Lake Major Newsletter found at <http://www.halifax.ca/hrwc/Publications.Php#LMNews>.

The last issue of this newsletter explained the third step in the multi-barrier approach – **Distribution System Management**.

This issue will focus on additional aspects of distribution system management: **Cross-Connection Control and Backflow Prevention**.

Arnold D. Johnson Sr. Award for Water Resources

Attention

African Nova Scotian Students!

Halifax Water, through the
Nova Scotia Community College,
is offering
a \$7200 award

to an African Nova Scotian Student
enrolled or enrolling full-time in the

*NSCC Waterfront Campus
Environmental Engineering
Technology Program!*

The application deadline is
October 20, 2014

For more information please visit

[http://www.nsc.ca/admissions/scholarships_a
nd_bursaries/Detail.aspx?l=6](http://www.nsc.ca/admissions/scholarships_a
nd_bursaries/Detail.aspx?l=6)

The Lake Major Watershed Newsletter is a Halifax
Water publication.

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What is a Cross-Connection?

A cross-connection is a direct link between a household water line and a contamination source. Most household cross-connections have been traced back to garden hoses that are connected to homes. When certain conditions occur, the water flow in household water lines can reverse, which can then pull (siphon) contaminants up through a hose and into the household water supply.

Another example of a cross-connection is a wastewater outflow pipe (lateral) connected into a storm sewer pipe, which then discharges into a freshwater or marine body. Such discharge of wastewater into a stormwater system poses a direct risk to public health and to the environment.

Halifax Water continues to find cross-connections in which wastewater laterals from homes and buildings are incorrectly connected to the stormwater system. In the past three years, 23 such cross-connections have been identified and corrected. Many of these conditions have existed for many years, but some are new.

What is Backflow?

Backflow is a flowing back or reversal of the normal direction of flow in a piping system. Backflow occurs when there are different pressures between two different points within a continuous fluid system, causing a fluid of higher pressure to flow to a fluid of lower pressure. Backflow may occur due to either backsiphonage or backpressure.

When there is a risk of a backflow situation, a Backflow Prevention (BFP) device can help. A BFP device is an apparatus that prevents the backflow of water from entering the potable water supply (see an example of a BFP device in Figure 1. on back page). Installation of BFP devices are required on all water service lines connected to industrial, commercial, institutional properties and multi-unit residential buildings (greater than four units). These BFP devices are installed to reduce the risk of potential contaminants entering the public water distribution system through backflow from the customer's premises, which may occur due to either backsiphonage or backpressure as explained above.

**24 hr Emergency Phone:
(902) 490-6940**

Protecting Drinking Water Against Cross-Connections at Home

You can protect your drinking water and reduce the risks of cross-connection by following these **dos** and **don'ts**:

Do...

- ✓ Leave at least a one-inch air gap (see image in Figure 2 on back page) between the end of a hose and a source of potential contamination.
- ✓ Attach a hose connection vacuum breaker – available at most hardware and plumbing supply stores – to indoor and outdoor threaded taps and tell your neighbours to do the same.

Note: Hose connection vacuum breakers are installed between threaded taps and hoses to control cross-connections. These vacuum breakers screw onto taps and allow water to flow out, but not back in.

- ✓ Prior to winter, avoid damage due to freezing by manually draining outdoor vacuum breakers and by turning off indoor valves that service outdoor taps.

Don't...

- ✗ Ever leave the end of a hose where contaminants can be siphoned into your drinking water – this includes swimming pools, laundry tubs, and service sinks.

Lake Major's Water Tastes Best!

At the June 2013 [American Water Works Association](http://www.awwa.org/) (http://www.awwa.org/) conference, a water taste test competition was held, in which Halifax Water made 10 water submissions. A panel of media people from throughout North America judged the water and determined that **Lake Major's water was the best-tasting water of all that was entered!**

People in the Lake Major watershed community can take pride in knowing that by helping to keep the watershed clean, they contributed to the greatest tasting water in eastern North America!

Methods and Types of Backflow Prevention

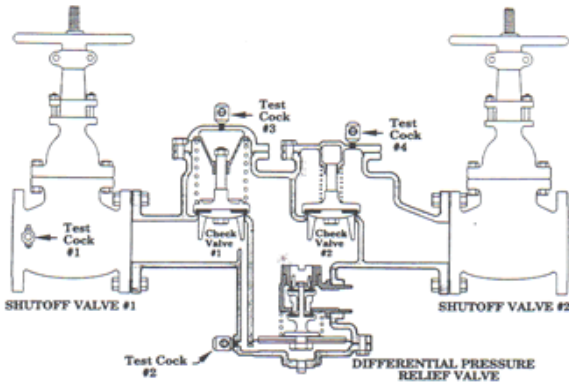


Figure 1. Reduced Pressure Principle Assembly

For more details on the methods and types of Backflow prevention please visit our website: <http://www.halifax.ca/hrwc/MethodsandTypesofBackflowPrevention.php>

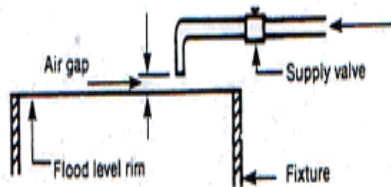


Figure 2. Air Gap

Community Clean-up and BBQ Event and Yard Sale

The Lakeloon/Cherrybrook Development Association (LLCBDA) and Halifax Water are hosting a **community cleanup and yard sale and BBQ event on August 23, 2014**. The event will start at 9:00 am at Graham Creighton School followed by a BBQ between 11 and 12 noon. At the same time, a **community yard sale** will be held to raise funds for the LLCBDA at the school.

The Association is welcoming donations of items to sell. All proceeds will go toward the community development fund. **Donations can be made by calling Brenton Sparks** (LLCBDA President) at 229-7733.



One of the efforts the LLCBDA is working toward is acquiring the abandoned community centre. This is a historical landmark in the community which began as a school, later becoming a community centre. Although abandoned for years, it still stands as a testament to the fond memories of weddings, education, dances, and a place for community congregations. The goal is to restore the building as a community centre and historical monument/museum pending the outcome of an assessment of the structural integrity of the centre.

Cross-Connection Control and Backflow Prevention

Even though your drinking water is thoroughly treated and tested regularly, contaminants can enter your home's water supply through a cross-connection. Although BFP devices can provide a solution to problems associated with existing or potential cross-connections, these devices need to be tested and evaluated to make sure they work properly.

Halifax Water has authority, through regulations approved by the Nova Scotia Utility And Review Board (NSUARB), to require property owners to have BFP devices between a potable water system and any source of pollution or contamination, tested by a licensed tester upon installation and annually thereafter.

Specifically, the regulations for water, stormwater and wastewater connections require that:

- no person shall connect, cause to be connected, or allow to remain connected to a water system, or a plumbing installation, without the prior written approval of Halifax Water;
- where there may be a risk of contamination to the potable water system, Halifax Water may require the customer, at their own expense, to install on the customer's water service connection, one or more backflow prevention (BFP) devices of a type that is approved by Halifax Water (see example in Figure 1.);
- a BFP must be maintained in good working order, inspected and tested by a certified tester, approved by Halifax Water at the expense of the customer and carried out annually or as required by Halifax Water; and
- the customer must submit a written report to Halifax Water for data entry and record keeping, in a form approved by Halifax Water, on all tests performed on a BFP device.

Between April 1, 2012 and March 31, 2013 there were 201 BFP devices installed at 107 sites, bringing the total number of BFP devices to 5520, installed at 2882 sites, as of March 31, 2013.

Halifax Water is responsible for ensuring that a program for the issuance, renewal and cancellation of Cross Connection Control Tester's Licenses is maintained. The Cross Connection Control Program (see <http://www.halifax.ca/hrwc/crosscontrolFAQs.php>) is a key component of Halifax Water's "Multiple Barrier Approach" to public health.

Lake Major Watershed Advisory Board Member Profile:



Andrew Faulkner

Andrew Faulkner is a Development Officer with Halifax Regional Municipality, and the HRM Development Approvals member of the Lake Major Watershed Advisory Board.

Andrew has a Community Planning education and almost 30 years' experience in municipal planning and development. He has been with HRM for the past 15 years administering the *Halifax Regional Municipality Charter*, Land Use By-laws, Regional Subdivision By-law, and other municipal by-laws related to construction and subdivision approvals since 2005.

Prior to joining HRM he spent 10 years as By-law Administrator in the Lower Mainland, BC. Living less than 100km from Vancouver, he observed the intense development pressure on the banks of the Fraser River and gained an appreciation for the complex relationship between protection of development and protection of water quality. That experience has been valuable in administering riparian protection (water-course buffers) legislation in HRM.

Since becoming a member of the Lake Major Watershed Advisory Board in 2011, Andrew believes, "the Watershed Advisory Board is critical to the success of water quality protection efforts in Lake Major. The broad representation, coupled with the education and experience of the members allows the Board to provide comprehensive and meaningful input on activities within the watershed. It is a pleasure working with a group dedicated to source water supply management and protection."