



# INFLOWMATION

*Westford Water Department Newsletter*



Water Commissioners:

- Elizabeth Denly, Chairperson
- Leslie A. Thomas, Secretary
- Hugh C. Maguire, Member
- Alternate Member Vacant



Department Contacts:

- Robert Worthley, Superintendent
- Stephen Cronin, Water Treatment Manager
- Larry Panaro, Business Manager
- Mark Warren, Environmental Compliance Manager



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## Cross-Connection Prevention and Backflow Prevention Devices

### What is a Cross-Connection?

A cross connection is defined as any direct connection between the public water supply and a non-potable water source or contaminant (potable water is fit for consumption, regulated, and regularly tested for safety whereas non-potable water is not). For example, take the seemingly innocent garden hose. When the hose is attached to a chemical sprayer or submerged in a swimming pool a physical connection is then established between the public water supply and a potentially hazardous source – in this case lawn or pool chemicals.

### What makes the cross-connection a potential hazard?

The answer is hydraulics. A cross-connection can introduce contaminants from a non-potable source (such as the chemical sprayer or swimming pool mentioned above) into the public water supply by either back siphonage or backflow. Back siphonage occurs when there is a sudden surge in water use - usually due to hydrant flow, main break, etc. resulting in a reversal of normal flow downstream due to negative pressure (think of how a straw works to sip a drink). Backpressure – and resulting reversal of flow - can occur when downstream pressure exceeds the supply pressure. Regardless of the means, reversal of water flow can introduce contaminants into the public water supply if there is a physical connection to a non-potable source.

### Does this really happen?

There have been instances (not in Westford thankfully!) where contaminants such as pesticides, caustics, boiler chemicals, and even blood have been introduced into a public water supply due to a lack of proper cross connection protection. Just this year, hydroseeding chemicals were introduced into the Somerset public water supply after a company illegally connected to a fire hydrant. The pressure in the hydroseeding truck tank exceeded that of the public supply (backpressure) causing the material to flow into the main. Fortunately, no one became sick.

### What does the Westford Water Department (Department) do about cross-connections?

The Westford Water Department maintains a robust cross-connection control program as required by the MassDEP. This program consists of surveying all non-residential facilities serviced by the Department for cross-connections, regular inspection of all installed backflow prevention devices, and educational outreach to customers regarding the importance of cross-connection elimination and protection. Additionally, the Department requires that all facilities served by town water are equipped with the appropriate backflow prevention device where any cross-connections exist.

**Cross-Connections (cont.)** There are different types of devices to be used based on the degree of hazard present. Some devices are testable – whereas others are not (several devices illustrated on right).

**Type of Testable Backflow Prevention Devices:**

Reduced Pressure Zone Backflow Device (RPZ). This type of device utilizes two check valves and a relief valve, and is designed for high-hazard uses.

Double Check Valve (DC): This type of device utilizes two check valves, but no relief valve, and is designed for low hazard uses such as for a fire sprinkler line.

Pressure Vacuum Breaker: This type of device utilizes one check valve, and is typically used in irrigation systems.

Air Gap. This is not a device, but a physical separation (of twice the diameter of the supply pipe and never less than 1 inch) between the potable water supply and the non-potable supply. Although not strictly a device, it is measurable. The air gap is extremely effective but limited to uses where downstream system pressure is not required.

**Type of Non-Testable Backflow Prevention Devices:**

Hose Bibb Vacuum Breaker: This is a small, inexpensive device available at most hardware stores that can be easily attached to your outside tap before the garden hose. It's used to prevent back siphonage, and is a simple way to protect garden hose cross-connections.

Residential Dual-Check: This device is installed after the meter, and offers reliable protection against back siphonage and backpressure. As the name implies, it is used for residential applications.

**What can Customers do?**

Provide Water Department personnel access to your facility during regular business hours (when requested) to perform required cross-connection surveys and backflow prevention device inspections (normally, surveys and inspections of residences are only needed if there is a fire sprinkler system installed).

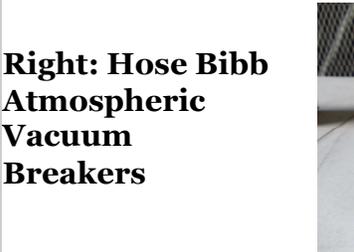
Comply with Massachusetts Plumbing Codes to ensure all cross-connections are protected with the appropriate device (a licensed plumber should be able to provide assistance). However, if you have any questions do not hesitate to contact the Water Department at 978-692-5529.

A simple and inexpensive way for residential customers to protect against back siphonage from their garden hose is to install the hose bibb vacuum breaker described above. The peace of mind in protecting your drinking water is worth a few bucks.

*InFLOWmation is published twice a year for all residents and businesses of Westford. Our goal is to keep you informed of events, our challenges and our accomplishments. We also strive to educate and encourage good stewardship of our water resources.  
Thanks for reading.*



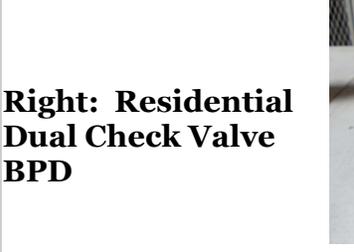
**Left: Reduced Pressure Zone (RPZ) Backflow Prevention Device (BPD)**



**Right: Hose Bibb Atmospheric Vacuum Breakers**



**Left: Double-Check Valve (DC) BPD**



**Right: Residential Dual Check Valve BPD**



**Quick Water-Saving Tips**

- Turn off the water while brushing your teeth or shaving
- Limit your shower to five minutes (or shorten by a minute)
- Fix leaks!
- Wash only full loads in the dishwasher or laundry
- Install a faucet aerator on your sink
- Don't use the toilet as a wastebasket

## May 2011 Open House



The Water Department held an open house at the 60 Forge Village Road treatment facility on May 4, and attendance was high despite the rainy weather. Several local experts were on hand providing



informative and practical displays on water-related topics such as conservation, irrigation, organic lawncare, recycling, water testing, private wells, stormwater protection, backflow protection, local aquatic organisms, and health. Information on recent Water Department projects and the new Nutting Road perchlorate treatment plant were also displayed. Kimball Farms generously donated delicious refreshments for many happy people. A high point of the evening was announcement of the Grade 4 Water Department Poster Contest winners. The theme of the posters was water conservation and pollution prevention. The kids did a great job with the posters, and we had a hard time deciding the winners – visit the Water Department website ([www.westfordma.gov/water](http://www.westfordma.gov/water)) to see the winning posters. All posters submitted to the contest were displayed during the event. Department staff answered questions and led tours of the Forge Village treatment facility. Many thanks to all who helped and generously donated their time for this event!

## Did You Know...?

- Over 70% of the earth's surface is water, but only 1% is available for human consumption! Roughly 97% is salt water, another 2% is frozen in glaciers, leaving 1% available for our use.
- Turning off the water while you brush your teeth can save about 4 gallons of water a minute. That's over 200 gallons a week for a family of four!
- An average of 8% of all home water use is wasted through leaks.
- A leaky faucet that drips at a rate of one drip per second can waste more than 3,000 gallons of water each year!
- Approximately 85% of U.S. residents receive their water from public water suppliers, and the remaining 15% supply their own water from private sources (such as wells). In Westford, approximately 75% of the residents receive town water and the remaining are on private groundwater wells.

## Board of Water Commissioners Alternate Member Opening

The Town Manager is currently seeking applications for one alternate member for the Board of Water Commissioners. One Westford resident will be appointed to serve a three-year term on the Board which is responsible for policy-making. The Board consists of three full-time members and one alternate member. The Board typically meets on the first and third Wednesdays of each month at 5:00 p.m. at 60 Forge Village Road (but sometimes meets on other days). The Alternate Member is required to attend meetings and participate in votes in the absence of one or more regular member(s). Experience with public utilities and/or municipal law desirable. Interested residents should complete a Citizen Activity Application form available online at: <http://data.westfordma.gov/bc> or at the Town Clerk's office at 55 Main Street. For more information, contact Tina Landry in the Town Manager's office at 978-692-5501.

**Westford Water Department**  
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**Hours of Operation:**

7am to 4pm Monday-Friday  
(except Holidays)

**How to Reach Us**

- Main Phone Line (978) 692-5529
- Superintendent (978) 399-2454
- Water Treatment Manager (978) 399-2455
- Business Manager (978) 399-2453
- Environmental Compliance Manager (978) 399-2457
- Billing and Property Transfers (978) 692-5529
- Accounts Payable (978) 692-5529

**After Hours**

In the event of a water emergency outside of the work day, call the Police Department at 978-692-2161. The police dispatcher will contact our on-call personnel for quick response.



**Water Department Partners with Schools**

Each year the WWD partners with the Westford elementary schools to provide educational programs involving water conservation, pollution prevention, and ecosystems. In the fall the WWD teaches about erosion and pollution prevention as part of the 5th grade living lab program. Using the Enviroscape model, the kids get hands-on experience solving a run-off pollution scenario.



Over the winter a groundwater presentation is provided to the fourth graders using a groundwater simulator. This informative presentation teaches the kids about the science of water, how Westford's water is

treated, importance of conservation, and how pollution can impact our groundwater drinking supply.

In the spring the WWD participates in the Pond Study portion of the East Boston Camps program. This year the kids made several interesting finds including bullfrogs, frog eggs, a catfish, and different types of water insects.

