

Who can install and test backflow preventers?

Installation—approved backflow prevention assemblies shall be installed by licensed plumbers and contractors. Local and state plumbing codes, city regulations and ordinances shall be administered during the time of installation.

Testing and Inspection—only a person who is a certified tester registered with IDEM can inspect and/or test backflow prevention assemblies. ([Title 327 IAC 8 Rule 10](#) Cross Connections; Control; Operation)

What do backflow preventers look like?

There are many manufacturers, types, sizes and configurations of backflow devices each suited for different applications.



REDUCED PRESSURE ZONE (RP)

May be used on direct connections which may be subject to backpressure or backsiphonage, and where there is the possibility of low or high hazard contamination.



DOUBLE CHECK VALVE ASSEMBLY (DCVA)

May be used as protection against all direct connections where there is possibility of low hazard contamination only. These are typically used on fire suppression systems.



PRESSURE VACUUM BREAKER (PVB) or SPILL RESISTANT VACUUM BREAKER (SVB)

May be used on direct connections where there is the possibility of high and low hazard contamination. These devices are designed to protect against backsiphonage only. These devices are also limited on where they can be installed.

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ATMOSPHERIC VACUUM BREAKER (AVB)

May be used on direct connections where there is the possibility of high and low hazard contamination. These devices are designed to protect against backsiphonage only. These devices are also limited on where they can be installed.

We realize and understand that there is expense and inconvenience involved with complying with these requirements.

Protecting our water supply is everyone's responsibility and we take our part very seriously.



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BACKFLOW

What is it all about?

Cross- Connection Program

Hazards

Protecting Our Water

Prevention

Irrigation Systems

Compliance



Cross-Connection Program

The City of Carmel Municipal Water Utility works hard to protect your drinking water from all forms of contamination.

This effort begins with the protection of the rivers that our water is pumped from and continues through the entire treatment and distribution process right up to where the water service enters your home or business.

What about after that point? Who protects the water from there to your glass? What is backflow? What is a cross-connection? What are hazards? What can we all do to help protect the water that is supplied and that we all use?

What is a Cross-Connection?

A “cross-connection” is any actual or potential connection between the public water supply and a source of contamination or pollution. Common examples of this would be the garden hose attached to a faucet and the other end submerged in a tub of detergent; or the hose being used to apply lawn insecticide or fertilizer; or tapping a secondary water source such as a well or pond while having a city water supply present. That is a cross-connection.

What is Backflow?

Backflow is the reversal in the direction of the normal flow of water in a piping system. This can be caused by backsiphonage or backpressure. A negative or reduced pressure in the supply piping causes backsiphonage much the same way as drinking through a straw. Potential for backpressure backflow exist wherever there is a heating system, elevated tank, or other pressure producing equipment. When the pressure is reduced, the flow in the supply piping is reversed.

Does water really flow backwards?

Yes. It does happen. When the water distribution system is in normal operation, water flows directly from the city's main to your property. However, in certain situations a backflow can occur causing water to flow back into the distribution system. The most likely time for this to happen is during periods of high water usage such as when fighting a fire, flushing a hydrant, water main breaks or repairs in the water distribution system.

Many cases of illness and injury occur every year from cross-connections and backflow. Recognizing this hazard the Indiana legislature passed rules November 1977 to the Indiana State's administrative codes (170 IAC 6-1-20) requiring water purveyors such as the City of Carmel municipal water utility to protect the public water system against cross-connections and backflow. The American Backflow Prevention Association (ABPA) has a website that lists many recent reported backflow incidents and articles from throughout the country. To learn more visit <http://www.abpa.org/incidents.htm>.

What hazard could that cause?

Backflow due to cross-connections are serious plumbing problems. Water within your property is exposed to many different types of fixtures, including lawn irrigation systems, fire sprinklers, washing machines, garden hoses, kitchen sinks, tubs, showers, and toilets. For industrial users, the exposure includes possible exposure to boilers, photo processing equipment, chemical mixing tanks, chillers, water reclaimers, pressure pumps, healthcare and laboratory equipment, etc. An actual or potential connection between any of these fixtures and the potable water system is a cross-connection, and a potential source of pollution or contamination.

What is a Cross-Connection Program?

The City's Cross-Connection Control Program begins with the identification of all businesses, industries, and residences that are on the city's water distribution system that are required by Indiana Law to install, inspect, test periodically and repair backflow prevention devices.

Instituting a program of “Backflow Prevention By Containment”, means a program or system designed to avoid backflow of contaminated water into the public distribution system. Backflow Preventers are installed at the meter in order to stop the spread of contaminants beyond the consumer who created the problem. Such responsibility begins at the point of origin, the public water supply and includes all of the distribution system and terminates at the service connection of the consumer's water system. With a containment assembly installed between the meter and the first branch line off of the plumbing system and annual inspection and testing of each assembly by a certified tester, the city's can be confident that backflow occurrences have been prevented, at least as encompassed by state of the art protocol at the Point of Delivery.

What is Low and High Hazard?

A Low Hazard cross-connection is one that may cause an impairment of the quality of potable water to a degree that does adversely affect the aesthetic qualities of the potable water. High Hazard cross-connection may cause an impairment of the quality of the potable water by creating an actual hazard to the public health, through poisoning, the spread of disease, industrial fluids or waste.

How to Help protect the Water Supply?

Have you ever put the end of the garden hose into the bucket of soapy water while washing? Have you ever sprayed insecticide or fertilizer with a garden hose sprayer? Have you attached a hand spray attachment to the faucet to wash your hair or dog?

These actions seem harmless but they create cross-connections that could endanger the health and safety of you, your family, your neighbors and potentially to others. If the water supply pressure drops creating a backsiphonage while the hose is submerged, that contaminate could be sucked back into your pipes and the water supply. Fortunately keeping your water safe from these contaminants is easy.

A Hose Bibb Vacuum Breaker is an inexpensive temporary backflow preventer that would help prevent this.



Do you have a Lawn Irrigation System?

You must have an approved backflow preventer device on your lawn irrigation system. Your landscape has all kinds of nasty things in it that will make you sick if you drink them. For this reason irrigation systems are considered High Hazards. A certified tester registered with IDEM must test and inspect the backflow device annually by Indiana Law. This risk assessment is based on the hazard posed by bacterial and chemical contaminants found on lawns and on the possibility of changes made to the irrigation system by the customer. All irrigation piping should be considered as a non-potable water system due to an actual or potential hazard. In these situations the city's recommends an approved RP should be required as a minimum level of protection, or an approved PVB.