# Backflow Prevention Program

The City of Fountain's Utilities Department is dedicated to the protection of its water supply, water distribution process and water infrastructure system. As a water provider, the City's Utilities Department is responsible for overseeing that all safety devices are in place to protect the water flowing through the City's water infrastructure system (pipelines). The City's Utilities Department has established a Backflow Prevention Program to test all backflow device assemblies used by all businesses (commercial and industrial) having connections or cross-connections to the City's water infrastructure system.

Federal and State laws also mandate that all water providers adhere to specific rules and regulations to protect potable water (drinking) and water provider's water infrastructure systems (ground and underground pipelines). This protection system or Backflow Prevention Program is a means to provide awareness, education and protection against the potential contamination or pollution hazards that can come from other water supply sources that are connected or cross-connected to the City's water infrastructure system. Below are various questions and answers related to the City's Backflow Prevention Program, which will explain how this program operates and will help answer questions on what devices need to be completed and what forms need to be submitted to the City of Fountain's Utilities Department to remain in compliance with Federal and State laws related to the Safe Drinking Water Act 1974 (including subsequent Amendments thereof) and the Water Supply (Water Fittings) Regulations of 1999.

## Backflow Prevention Program FAQs

1) What is Backflow Prevention, and why is it important?

   In water supply systems, water is normally maintained at a significant pressure to enable water to flow from the tap, shower, etc. When pressure drops or is reduced which may happen if a water main bursts, pipes freeze or there is unexpected high demand on the water system, the pressure in the pipe may be reduced and may allow contaminated water from the ground, from storage or from other sources to be drawn into the main water supply infrastructure system.

   Back pressure is another way that an undesirable contaminant may enter a potable water piping system. Sources of back pressure may be pumps in the water distribution system, boilers or heat exchanging equipment and even power washing equipment. In these cases you may have an almost constant risk of overcoming the static water pressure in the piping and when chemicals are used, as they are for commercial or industrial descaling (boilers) or residentially as in deck or siding cleaning such as bleaches (power washing), backflow preventers

help keep those contaminants from entering back into the City's main water supply system.

**The Environmental Protection Agency** (EPA) holds local water suppliers responsible for maintaining a certain amount of purity in potable water systems. Many states and/or local municipalities require annual testing of backflow prevention assemblies. A check valve is a common form of backflow prevention. In most cases, the law requires a double check (DC), a Reduced Pressure Principle Device (RP) device or an air gap when backflow prevention is mandated. To prevent such an occurrence, many regulatory regimes (i.e., EPA) require there to be a mechanical backflow prevention assembly between the delivery point of mains and commercial or industrial businesses who are connected to main water infrastructure systems. In this way the backflow prevention assembly protects the potable water system from contamination hazards.

2) What are the types of backflow?

Backflow is the reverse flow of water or other substances through a cross connection pipe which flows into a treated drinking water distribution system. There are two types of backflow: Backpressure and Back-Siphonage:

a) Backpressure happens when the pressure of the contaminant source exceeds the positive pressure in the water distribution main pipeline. An example would be when a drinking water supply main has a connection to a hot water boiler system that is not protected by an approved and functioning backflow preventer. If pressure in the boiler system increases to where it exceeds the pressure in the water distribution system, backflow from the boiler to the drinking water supply system may occur and cause contamination.

b) Back-Siphonage is caused by a negative pressure (vacuum or partial vacuum) in the water distribution system. This situation is similar in effect to the sipping of water through a straw. Negative pressure in the drinking water system can happen because of a water main break or when a hydrant is used for firefighting.

3) When is backflow prevention an issue?

Drinking water that meets water quality standards leaving the water treatment facility can become contaminated in the distribution (pipeline) systems by backflow when the following conditions exist:

a) A drinking water distribution main is unprotected because of the lack of a properly installed and functioning backflow prevention device assemblies on the service connection at the customer's supply;

b) A physical cross connection is made between the drinking water distribution main and a contaminant source; or

c) Backflow conditions occur.

4) As a Commercial or Industrial Customer in the City of Fountain's service territory, what am I required to do?
State regulations require all commercial and industrial customers served by a public water system to protect the public water system from potential contamination. If you are a commercial and industrial customer, you are required to install, maintain, and test the appropriate State-Approved Backflow Prevention Assembly. Your backflow should be tested by a registered backflow tester and all results should be noted on the City's Backflow Prevention Form.

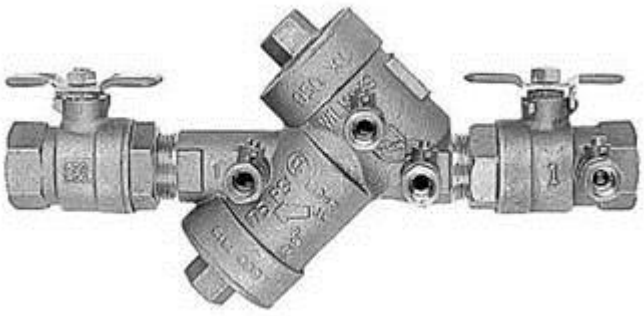
5) What is an Approved Backflow Prevention Assembly?
All Backflow Prevention Assemblies must be both State approved and provide the appropriate protection for the degree of hazard present. A State Approved Backflow Prevention Assembly is defined as one that has been accepted and listed as approved by the University of Southern California Foundation for Cross Connection Research. All Backflow Prevention Assemblies must be able to be tested for operational purposes and monitoring.

6) What type of backflow assembly do I need?
The type of backflow device necessary depends on the degree of hazard present at your location; taking into account how water is used at your location and any conditions that might allow contaminants to enter the main water infrastructure system. Please contact Fountain's Utilities Department at 719-322-2072 to talk to one of the Water Operators working with Backflow for determining what type of assembly your facility will need to have in place.
All Backflow Assemblies must be testable to meet criteria for installation on water lines. The three (3) main types of testable Backflow Prevention Assemblies are:

a) Reduced Pressure (RP) Device


b) Positive Type Vacuum Breaker

c) Double Check Valve (for Fire Lines Only)



7) Who should install and test a backflow assembly?
   The City of Fountain's Utilities Department recommends that you have someone who is qualified for installation and certified for testing backflow devices.

8) Where is the backflow assembly required to be installed?
   The backflow assembly must be installed on the customer's service line after the meter set and before any branching of the line to accommodate any additional taps, faucets or hose connections. There also must be a 12" clearance area around the entire device.

9) Will my water service be interrupted during the test?

Yes, the water supply to the backflow preventer must be turned off during the testing procedure. The type and location of the device will determine how long the test will take. Typically 10-30 minutes are needed to complete testing. Additional time may be needed to make additional repairs or adjustments.

10) How much does a backflow device cost?

The cost of a backflow device varies based on the size, type and location. The City's Utilitied Department recommends that you obtain several quotes before purchasing a backflow device due to varied costs.

11) Who is responsible for paying for the device and testing?

It is the customer's responsibility to ensure that any contaminants or pollutants do not enter the water distribution system from their location. All costs related to the installation, maintenance and testing of backflow prevention assemblies are the customer's responsibility.

12) What happens if I do not comply?

Non-compliance with the City of Fountain's Backflow Prevention Program will result in discontinued water service and connection to the City's water infrastructure system.

13) Once my device is tested, who submits my completed test form each year?

**The Certified Backflow Technician must complete the form and submit it to the City of Fountain Utilities Department at www.fountaincolorado.org/backflow.**

Any additional questions related to our Backflow Prevention Program, please contact our Utilities Department at 719-322-2072 or email backflow@fountaincolorado.org.