

## NORTH TABLE MOUNTAIN REPORT - September 2018

### Cross-Connections and Backflow

#### Overview

The Colorado Department of Public Health and Environment have updated their regulations regarding backflow prevention. As part of meeting these regulations, North Table Mountain Water and Sanitation will be conducting property surveys to assure proper backflow prevention. We want our customers to understand how backflow can occur so together we can protect public health.

#### What is a cross-connection and how does backflow occur?

A cross-connection is any point in a water distribution system where unwanted contaminants may enter the potable water system. When contaminants are drawn or pushed back into the potable water system it is called backflow.

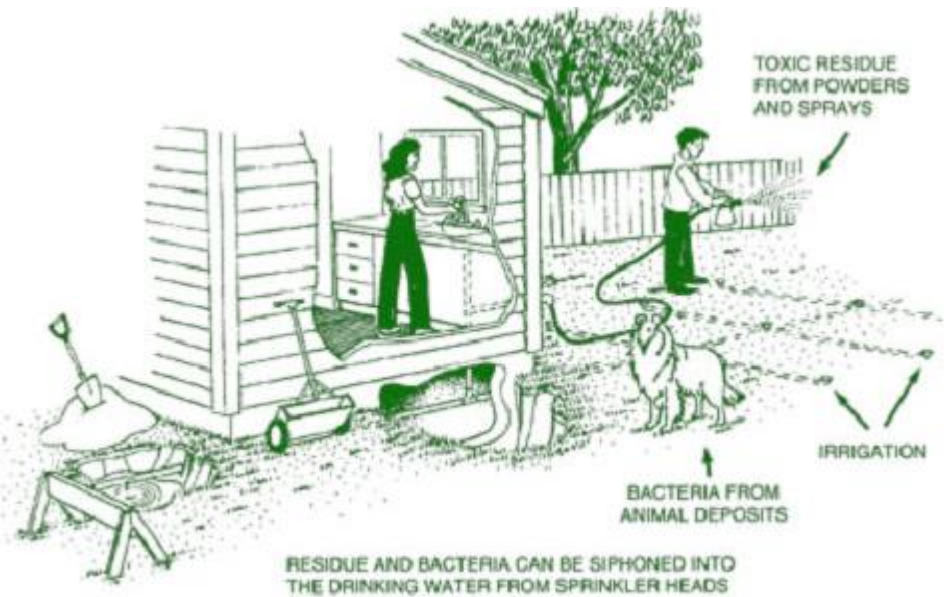
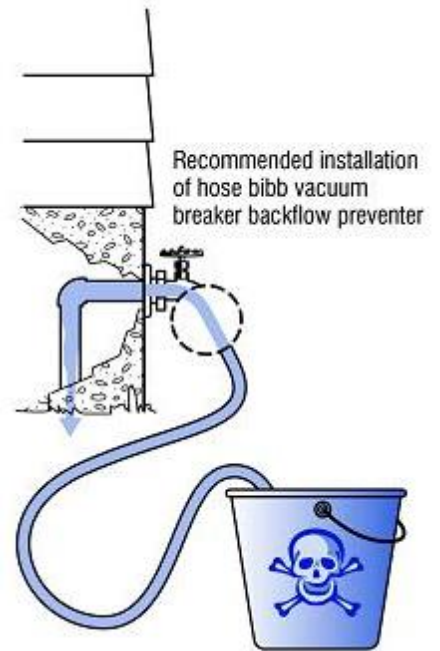
Many things can cause a reduction in pressure in the water distribution system and trigger backflow, including but not limited to Fire Flows and Main Breaks. When large amounts of water are flowing out of a hydrant or main break, it causes lower pressures in the surrounding area.

#### What happens?

The water main pressure in the street is lower than the piping inside the surrounding homes. Water from homes including sprinkler systems, garden hoses, swamp coolers, pool filling lines, etc. can be pushed or drawn back through the home's plumbing system and into the main. This potentially brings contaminants with it, compromising the public water system.

#### Where can backflow occur around the home or business?

**Yard Hydrants and unprotected Hose Bibs-** These rely on an air gap between the outlet and the potentially contaminated water. Once connected to a hose these connections create direct cross-connections to the water system. Many contamination events occur when a hose gets left in an unsanitary bucket, animal water troughs, swimming pools, or other similar connections. New hose bibs with built in protection are the best solution, after market pressure vacuum breakers can be added to existing yard hydrants and hose bibs to create a protected connection.

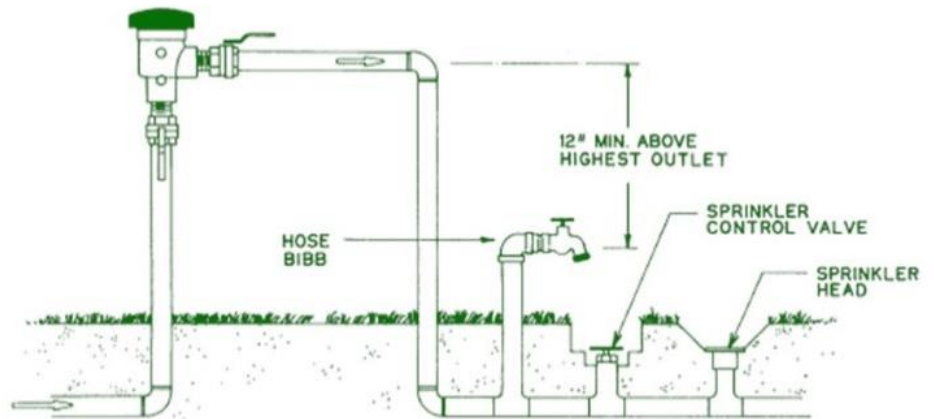


**Boilers-** Boilers create pressures that can overcome the water main pressure. Water sits for long periods of time in boiler systems taking on metals and rust from the pipes. Additionally, many boilers use chemicals, or antifreeze additives which pose a serious health risk. All boilers require approved backflow prevention valves that are **tested annually**.

**Pressure Washers-** These can also easily overcome main line pressures, and are often used with chemicals unfit for human consumption. When connected to an un-protected hose bib they create a direct cross connection.

**Aspirators (weed killer and fertilizer application)-** Aspirators are spray bottle applicators that screw onto the end of a garden hose and as water is sprayed through them they draw the fertilizer or weed killer out of the bottle and mix it with the flow of water. There are many issues that can arise with these devices that can allow the chemicals to flow back into the house and ultimately into the public system.

**Irrigation Systems-** These systems are open to the air and ground and as a result have bacteria and contaminants that pose a risk to human health within them. During a backflow event the water in the lines can be aspirated into the public system and any ground water the system is in contact with as well. All irrigation systems require protection with an approved backflow prevention valve.



**Mop Sinks-** The spigots on these sinks in the past were equipped with a threaded nozzle so that a hose could be attached; as a result they frequently become cross-connections.

If the sink has a hose attached during a low-pressure event, the unsanitary water in the hose, mop bucket, or sink can be aspirated back into the house's plumbing system and the public water system.

**Wells and well water-** Well water is not required to conform to the Safe Drinking Water Regulations. Therefore, well water should never be connected to a public water system without proper backflow protection.

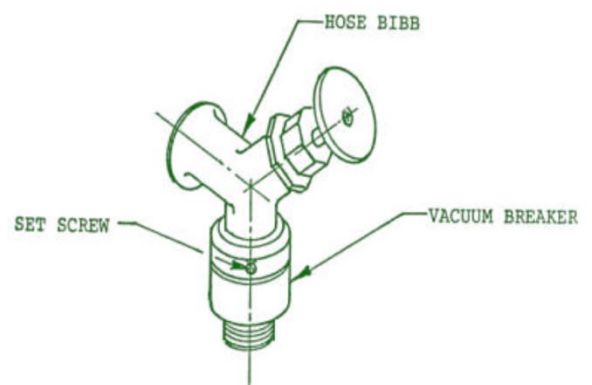
### What to do about it!

The District maintains a backflow prevention program which requires annual testing of these types of connections for local, commercial and industrial facilities. This includes single family homes that are used for any type of business. Testing in residential neighborhoods is not mandatory at this time (except on boiler systems and on fire suppression systems).

Residential homes that are built to current plumbing code standards already have many backflow prevention features built in:

- Sinks have an air gap between the sink rim and the spigot
- New hose bibs have special valves attached that prevent backflow
- In-ground sprinkler systems have valves that can open up to the atmosphere and allow air in to break the siphon effect.

For residential, commercial, and industrial properties we ask that you add pressure vacuum breakers to all old style hose bibs and yard hydrants. These can be purchased at your local hardware store and help to minimize the risk of a backflow event.



We will be surveying all commercial, industrial and business properties as part of our backflow program and offering solutions.

For additional information please email us at:  
[backflow@ntmwater.org](mailto:backflow@ntmwater.org)

**The most important point is to NOT modify your plumbing if you do not understand the plumbing code. Call a licensed plumber if you have any concerns with your existing system or if you need to make any modifications to it.**