

We love our mountains, from January thru December, we hunt, hike, bike, ski and fish in, on and around them. They provide us many things, including our water. As the rain falls and snow melts, water collects in lakes and reservoirs, fueling streams and rivers and providing us the water that we drink and use for so many purposes. Clean water is a vital need for every person on earth. We have a legal and moral responsibility to keep it clean. The health of our family, friends and neighbors depends on having a safe, clean and wholesome supply of water. Before water enters the distribution system it is filtered and purified to remove any contaminants that would be harmful for human consumption. We are fortunate to have two sources of water that require minimal to moderate treatment. Once the water is safe and wholesome, the finished product is stored and distributed to homes, businesses and industries within our community. If all goes as planned the water never returns to the distribution system. But since water is a liquid and will flow to the point of least resistance, precautions to control the direction of flow must be in place. Various standards and codes help us make water pipe plumbing less susceptible to what is called backflow. While backflow by itself is not a problem, it can be deadly if the water in the system becomes contaminated. There are two types of backflow; backpressure and backsiphonage. Backpressure is when the pressure inside a business, industry or home is higher than that of the public water system. This can be caused by many different situations and environments. For example, a boiler heating system has chemicals inside to prevent corrosion and scale build-up inside the piping system. It also produces pressure as it heats. This pressure can force the contaminated water back into the water system. To prevent this type of contamination, proper backflow protection must be in place. A common household pressure washer can be very useful, but it also poses a threat to the water system, particularly if chemicals are in use. The pressure being generated by the pressure washer can build up and if proper backflow prevention is not in place, chemicals could be forced into the drinking water. Another example of backpressure is a carbonated beverage dispenser. While a drink from these machines can be refreshing, if proper backflow protection is not in place it can be dangerous. Carbon dioxide gives the syrup its bubbles. To get into your cup, the syrup it is mixed with water and carbon dioxide under pressure. If proper backflow protection is not in place the pressurized carbon dioxide can overcome the water pressure and migrate back to the copper pipe where carbonic acid is created. If consumed this acid can cause severe intestinal distress.

A Backsiphonage is when the pressure in the public water system drops lower than that of the home or business, causing a siphon effect that pulls water from the downstream higher pressure system. This can happen in the case of a fire, a water main break, new construction or even if a fire hydrant is broken in a car accident. In the case of a car wash, the loss of water pressure would allow hazardous soap, degreasers and waxes to be siphoned all the way back into the water main, thus contaminating the entire community drinking water supply. These backflow events are not just an inconvenience, they are health hazards that can potentially cause death. Sometimes one layer of prevention isn't enough. Fire suppression, beverage dispensers, heating and cooling systems even hose bibbs for garden hoses require their very own backflow prevention. When major backflow events occur, it can cost thousands of dollars to remedy the situation. Not only is there financial cost for cleanup, but environmental impact as well. Water must be flushed from the system which creates a waste of what was once valuable drinking water. In some cases, the large sections of water mains and related piping must be replaced because the contaminate cannot be removed from the walls of the pipe. You most likely already have backflow prevention in place, and don't even know it. Have you ever wondered why the faucet to a sink is higher than the top of the sink? This is to prevent water in a plugged sink from being siphoned into the water system. You can also install adaptors from your local hardware store that fit on the hose bibbs in your home to ensure that water hoses that come into contact with chemicals and contaminants will not mix with your drinking water. Backflow preventers ensure that water flows in its intended direction. Backflow prevention is so important to human health that it is recommended by the American Backflow Prevention Association, the American Water Works Association. It is also required by the Uniform Plumbing Code and local, state and national statutes. A backflow preventer, like anything mechanical needs to be inspected on a regular basis. Sadly, you can't look at the outside of one and determine if it is working. So, annual testing is important and required by many codes and recommended by the manufacturers. Testing is a simple process where a technician puts a backflow preventer through its paces in a controlled environment. To do this test the water will be turned off for a few minutes. This is usually a scheduled situation. If you don't have prevention installed, contact your licensed plumber. If you do have protection in place, have it tested annually. If you have questions, don't hesitate to call the City of Bozeman's Cross-Connection Specialist. Let's work together to keep our water safe!