

WHAT IS BACKFLOW!

Water distribution systems are designed with the intention of the water flowing in a certain direction – from the distribution system to the consumer. However, hydraulic conditions within the system may deviate from the “normal” conditions, causing the water to flow in the opposite direction. Therefore, it is possible and common for the water to flow in the opposite direction in unprotected systems. This is called backflow. When this happens the water system can become contaminated with pollutants that could be harmful to water users.

WHAT CAUSES BACKFLOW?

Backflow is caused by cross-connections that have the potential of allowing contaminants into the drinking water system. Back siphonage can occur when the pressure in a tank or water trough is lower than the water system’s pressure. This could allow the influx, or pulling, of contaminated water into the system. Another cause of backflow is back pressure. Back pressure occurs when there is higher water pressure in a fire protection system or in a multi-story building that contaminated water could be forced into the public water system.

WHAT HARM CAN COME FROM BACKFLOW?

Reports of backflow incidents have been received throughout the history of water systems. These reports are from across both Texas and the United States, date back to the early 1900’s. Some fairly recent metroplex backflow incidents have been recorded, as follows:

- In 1997 a north Texas city reported that a fireline backflow assembly malfunctioned allowing backflow into the water system.
- Another Texas city reported backflows during the years of 1995 to 1997 that were the result of malfunctions in a water softener at a country club; a carbonated beverage machine at the snack bar of a chain discount store; and residential toilet tank ballcocks malfunctioning.
- Several years ago another Texas city had colored and distasteful water in its system caused by back siphonage from an unprotected funeral home.

These are just a few minor incidents in the metroplex caused by the lack of backflow protection assemblies or malfunctioning devices placed on lines incorrectly. None of these incidents caused any severe problems in their respective communities. They were rapidly corrected as soon as the water system purveyor was made aware of the problem. Other communities in the United States have had cases that resulted in the hospitalization of individuals, explosions destroying property and injuring people. These cases have been litigated and have cost water system purveyors millions of dollars.

Backflow prevention programs have proven to help reduce the potential of backflow contamination in water systems.