

## What is a Cross Connection?

A cross connection is a point in a plumbing system where the potable water supply is connected to a non-potable source. Briefly, a cross connection exists whenever the drinking water system is or could be connected to any non-potable source (i.e. plumbing fixture or equipment used in a plumbing system). Pollutants or contaminants can enter the safe drinking water system through uncontrolled cross connections when backflow occurs.

Backflow is the unwanted flow of non-potable substances back into the consumer's plumbing system and/or public drinking water system.

There are two types of backflow:

***backsiphonage*** and ***backpressure***.

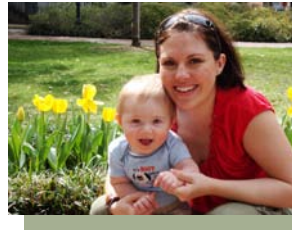
Backsiphonage is caused by a drop in pressure in the supply line to a facility or plumbing fixture. Backsiphonage may occur when a waterline breaks and the supply pressure drops, or when repairs are made to the waterline and the water supply is shut off and pressure is reduced.

Backpressure can occur when the potable water supply is connected to another system operated at a higher pressure or has the ability to create pressure. The main causes are booster pumps, pressure vessels and elevated plumbing.

Backflow preventers are mechanical devices designed to prevent backflow through cross connections. However, for backflow preventers to protect as designed, they must meet strict installation requirements, and therefore require Florida licensed and certified installers.



***It's what we all want.  
It's what we all expect.***



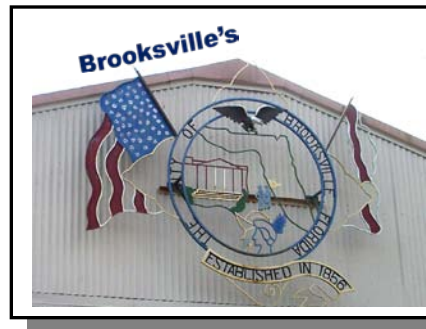
### For further information contact:

The City of Brooksville, Department of Public Works at:

600 South Brooksville Avenue,  
Brooksville, Florida 34601

Phone: 352-540-3860 Fax: 352-544-5470

City of Brooksville website:  
[www.cityofbrooksville.us](http://www.cityofbrooksville.us)



**Dept. of Public Works**

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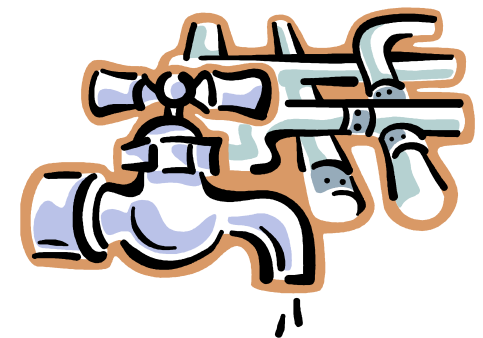
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may become***

**POLLUTED**

**or**

**CONTAMINATED**

***through uncontrolled  
Cross Connections***



## Why Be Concerned?

Most water systems in the United States and Canada have good sources of water and /or modern treatment plants to convert impure water to meet drinking water standards. Millions of dollars are spent to make the water potable before it enters the distribution system, so most water suppliers think that their water supply system is not in jeopardy from this point on. Studies have proven this to be wrong. Drinking water systems may become polluted or contaminated in the distribution system through uncontrolled cross connections.

Cross connections happen each day in the United States because people are unaware of the problems they can create. Illness, and in rare instances, even death may occur, contaminated food products and goods, industrial and chemical products rendered useless, are some of the consequences. As a result, many hours and dollars are lost due to **cross connections**.

## Where are Cross Connections Found?

Cross connections are found in all plumbing systems. It is important that each cross connection be identified and evaluated as to the type of backflow protection required to protect the drinking water supply. Some plumbing fixtures have built-in backflow protection. However, most cross connections will need to be controlled through the installation of an approved backflow prevention device or assembly. Some common cross connections found in plumbing and water systems include:

- Wash basins and service sinks.
- Hose bibs.
- Irrigation sprinkler systems.
- Auxiliary water supplies  
I.e. re-use, wells, ponds, tanks
- Swimming pools.
- Solar heat systems.
- Fire sprinkler systems.

For a backflow preventer to provide proper protection, it must be approved for backflow protection, installed correctly, tested annually by a Florida certified tester and repaired as necessary. The State requires backflow protection on all non-residential facilities, residential structures where auxiliary sources of water such as; pools, ponds, tanks, irrigation systems, reuse water systems are found, and multi-level structures where potential cross connections may occur and are normally found.

Some facilities considered of a high hazard type would receive priority for backflow protection. The following is a partial list of such like facilities:

- Sewage treatment plants
- Hospitals, mortuaries, clinics.
- Laboratories.
- Food and beverage processing facilities including restaurants.
- Metal plating and chemical plants.
- Printing facilities.

Every water system has cross-connections. The **Federal Safe Drinking Water Act** and the regulations of the **Florida Department of Environmental Protection** require cross connections to be controlled by an approved backflow prevention device or assembly.

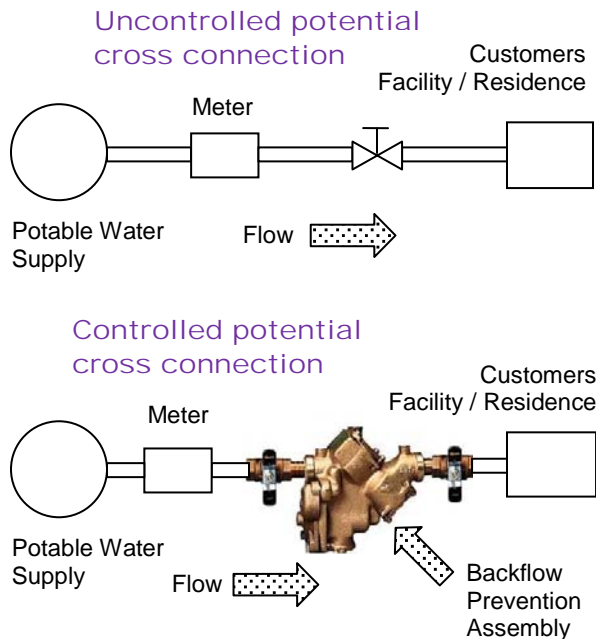
## Where Can I Learn More?

It is impossible to cover all of the information pertaining to cross connections in a pamphlet. We hope the preceding information will inspire you to further educate yourself on the hazards of unprotected cross connections.

For further information, related links and or education on cross connection control, contact the TREEO Center at:

University of Florida  
3900 SW 63rd Blvd.  
Gainesville, FL 32608

Phone: (352) 392-9570  
[www.treeo.ufl.edu](http://www.treeo.ufl.edu)



Shown in the picture above is a typical Backflow Prevention Assembly installed, also commonly referred to as an RP (Reduced Pressure) backflow prevention assembly.