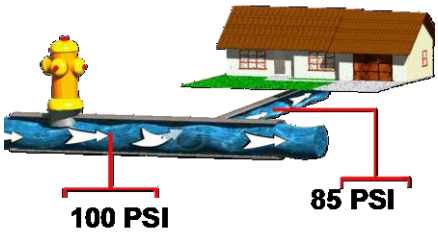
VIRGINIA AMERICAN WATER

1- Definition of backflow and cross connection

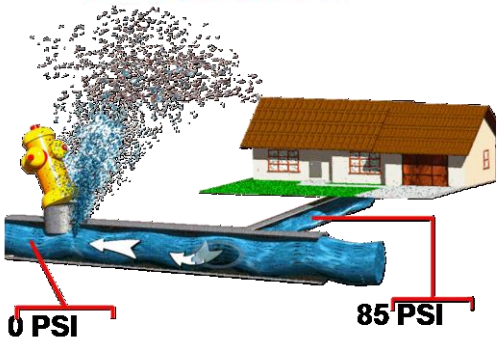
Backflow: reverse flow of water or other substances into the drinking water distribution system.

Normal flow



Typically, water flows from the distribution system to customer's house

reverse flow

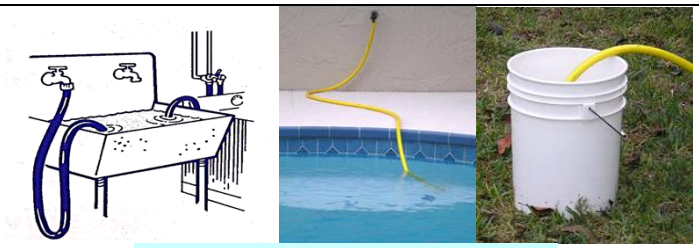


Backflow events can occur because of:

- **Back pressure:** pressure in downstream piping is greater than distribution system pressure
- **Back siphonage:** reverse flow caused by negative pressure (vacuum or partial vacuum) in the distribution system

Cross Connection:

- An actual or potential connection between a potable (drinkable) water supply and any non-potable source or substance that could contaminate drinking water



Examples of cross connection

Cross connections + Backflow events ➔ potential contamination of drinking water

Stop backflow

→Install backflow preventers to prevent drinking water contamination

A cross connection control (CCC) program:

-Must be in place to control cross connections and protect the drinking water supply from the possibility of contamination from the customer's internal plumbing system
-Is a state requirement (state water regulation and Plumbing Code)
- Requires periodic surveys of customers' water use and backflow hazards
- Requires installation of backflow preventers
- Required backflow protection depends on risk and degree of hazard
- Requires periodic testing of customers' backflow preventers
- Involves water company staff, health and plumbing officials, customers, plumbing contractors and testers
- Customers submit completed surveys and test reports to our CCC office,
- One person administers the CCC program and manages customer correspondence

Selection of appropriate safeguards for various situations

RISK assessment- degree of hazard	Type of health hazard (examples)	Method of backflow (flow conditions)	Device or safeguard
HIGH	**Toxic** (sewage, used water, toxic or hazardous material)	Back-pressure or Back-siphonage (continuous flow)	Reduced pressure principle backflow prevention assembly
		Back-siphonage only (continuous or non continuous flows)	Various types of vacuum breakers
MODERATE	**Leading to aesthetic issues or impacting water usefulness** (food products, non-toxic, non hazardous chemicals	Back-pressure or Back-siphonage (continuous flow)	Double check detector assembly
LOW	**Leading to aesthetic issues**	Back-siphonage only (continuous flow)	Dual check valve