



## **BACKFLOW PREVENTION ASSEMBLY PROGRAM**

One of our most precious natural resources is drinking water. We can survive for up to a month without food but only around a week without water. Water systems across the nation have, for many years, consistently strived produce high quality drinking water. Unfortunately, at the point of use the high quality water that was sent from the water producing facility may have been compromised by a cross connection with a non-drinking water source. This cross connection can cause sickness or worse.

In 1974 our federal government enacted the Safe Drinking Water Act (SDWA). This law established drinking water standards through the Environmental Protection Agency (EPA), which mandates that individual states are responsible for the enforcement of these standards as well as the supervision of the public water supply and the sources of drinking water. The EPA has specific requirements regarding cross connections and backflow prevention within the SDWA.

In response to the SDWA individual states have developed their own Cross Connection Control (CCC) programs that are required to be equal to or more stringent than the SDWA. The State of Florida requires water systems to develop a comprehensive backflow prevention program per Florida Administrative Code 62-550.

The need for an active backflow prevention program goes beyond keeping people safe – as guardians of the drinking water system the City is responsible for the health and safety of all consumers with respect to the elimination and prevention of all cross connections. Further, the City is mandated by this same law to implement a backflow prevention plan and program that provides administration, site inspections, and re-inspections as needed, public education, data management, reporting, and annual testing of testable backflow prevention assemblies.

**“Keeping People Safe”**

Until the SDWA, data was not maintained regarding water quality. However, during the past thirty years there have been several documented backflow incidents reported by the EPA, FDEP, TREEO, and other government agencies regarding contaminants such as paraquat, propane gas, chlordane, heptachlor, pesticides, washer water, bilge water, boiler water, irrigation & reclaim water, hexavalent chromium, ethylene glycol, creosote, untreated surface water and many other contaminants that have entered our drinking water system. In all of these examples unsuspecting people have become ill or in rare cases have died.

### **What is a Cross-Connection?**

Every time any connection (piping, equipment, hoses, etc.) is made to the drinking water system, a cross-connection occurs. The connection can be permanent, (example- lawn sprinkler system or chemical process system), or temporary (garden hose attached to a faucet). When cross-connections are not properly protected with a special, mechanical device, used water can be pulled or pushed back into the drinking water supply. That water can be dirty, or can contain bacteria or chemicals that are harmful to human health. Other common cross-connections include dishwashers, toilets, pressure washers, boilers, swimming pools, streams, wells, lakes, solar heaters, fountains, irrigation well pumps, and many others.

### **How Does Contamination Occur?**

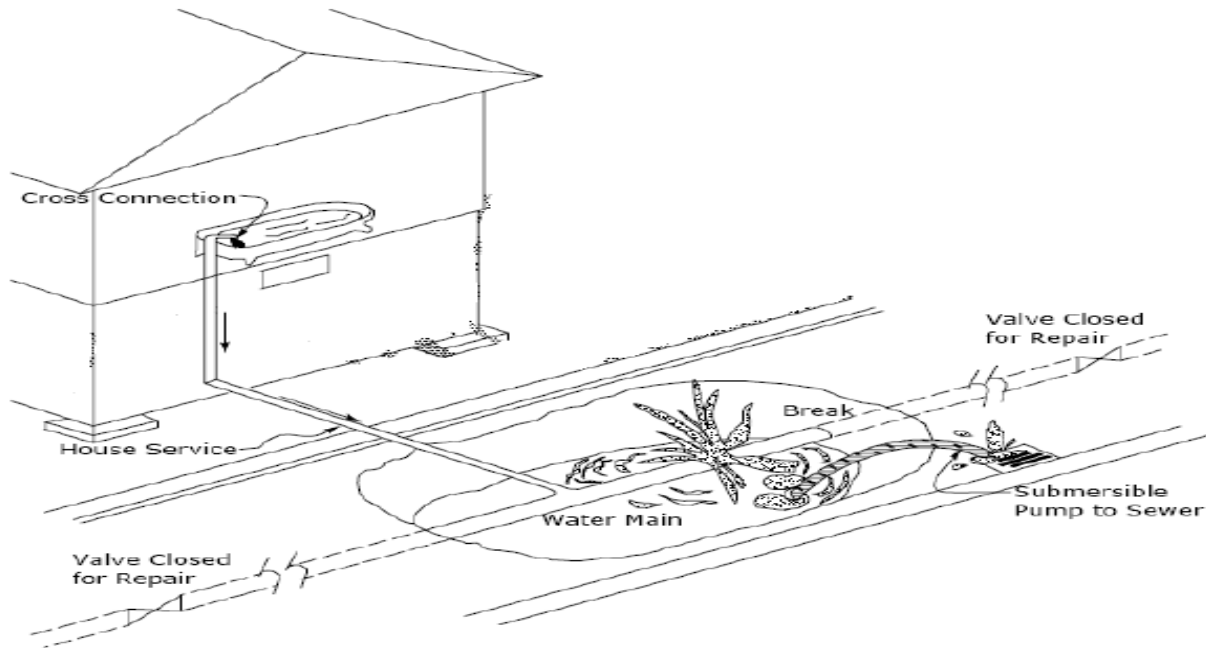
Water normally flows in one direction, from the utility water system through the customer's cold or hot water plumbing system to a faucet or other plumbing fixture. Under certain conditions, water can flow in the reverse direction. This is known as **backflow**, and it occurs when backsiphonage or backpressure is created in a water line.

**Backsiphonage** can occur when there is a drop in the supply pressure of the water distribution system. Contaminated water in piping or vessels connected to the water distribution system can flow backwards because atmospheric pressure will be greater than the water system pressure. This condition is caused when distribution pressure is lowered due to a water line break, fire flow, or during a rapid withdrawal of a large amount of water from the system. The vacuum created may pull or siphon contaminants or pollutants into the drinking water system. An example of this would be if a garden hose connected to the home was left submerged in a bucket of soapy water or a bath tub, when a water main break occurred. The soapy water could be drawn back into the home due to backsiphonage.

**Backpressure** can be created when a source of pressure, such as a pump or boiler, creates a pressure greater than that supplied from the water distribution system, pushing used water back into the drinking water system. An example of this is when a pump used for irrigation of your lawn is connected to your home system via a garden hose to prime the pump. If this hose is not immediately removed after the pump is primed the irrigation pump could overcome the Utility water system pressure and contaminated surface water would be pumped into your home and into

the distribution system. (Water used for irrigation purposes that comes from a canal or a well is often contaminated with bacteria.)

### **Backsiphonage?**



### **Program Overview**

The City of Lake City Utility delivers safe, high-quality drinking water to over 20,000 customers every day. Water quality is required to be protected as drinking water travels through the distribution system to our consumers. Rules enacted by the Florida Department of Environmental Protection (FDEP) and the City Ordinance establish requirements for operation of the distribution system. A key component of these regulations is to maintain a cross-connection control/backflow prevention program to prevent any substance from entering the drinking water distribution system.

Representatives from HydroCorp will survey commercial and residential sites throughout the Utility service area to detect unprotected cross-connections. When an unprotected cross connection is identified an appropriate device for the application will be recommended for installation. This will ensure that contaminated or polluted water cannot re-enter the drinking water supply.

### **What Is a Cross-Connection Control Program?**

This program is a cooperative effort between plumbing and health officials, local governmental officials, and property owners to make sure that all connections to drinking water piping are installed safely, and to install protection on any existing connections that do not meet safe standards. To accomplish these goals, officials establish written procedures and guidelines for

controlling cross-connections and ensure their enforcement so that the public drinking water supply is protected both in the city main and within buildings.

The City of Lake City's program consists of the following components:

- **Public Education Program** — The City of Lake City will inform City water customers with newsletters, brochures, public awareness meetings, and access to informational videos. Visit the website of HydroCorp at [www.hydrocorpinc.com](http://www.hydrocorpinc.com) and browse the "Links" page for various educational topics for more information and resources.
- **Cross-Connection Survey** — All commercial and some residential properties external plumbing systems will be surveyed to determine if cross-connections exist. Residential surveys will be external to the home. Inspectors will not enter the home.
- **Installation of Protective Devices** — Backflow prevention assemblies will be required to be installed where known unprotected cross-connections are identified.
- **Annual Testing** — All testable backflow prevention assemblies must be tested at the time of installation and once a year by certified inspectors, and written proof of testing must be submitted.

### **What is a Backflow Prevention Site Inspection?**

A Backflow Prevention Site Inspection is the first step of the City of Lake City program. FDEP requires that an On-Site Inspection of the distribution system be conducted to determine the degree of hazard present at all properties connected to the distribution system. The survey will determine if a backflow prevention device will be required at a property.

Many business and home owners have backflow prevention assemblies (BPA's) installed either at their service connection (at the water meter) and/or within their building or home. These assemblies are installed to help protect the quality of water in the public water system by preventing the backflow of potentially contaminated water through cross connections. Per City Ordinance, Florida Regulations and Plumbing Codes, BPA's must be performance tested on an annual basis to ensure they are working properly to protect the public water supply. All commercial properties are required to have testable assemblies located downstream of their water meter. Most residential properties have, non-testable valves installed after their water meter. Some residential properties use city water for irrigation purposes. These properties are required to have a testable backflow prevention valve.

In the past the City has sent test requirement notices requesting that the BPA's be tested, and it was the customer responsibility to hire a qualified tester to test the BPA and fill out a test status form, and then submit that completed test form to us. The City of Lake City recognizes that the time and cost to obtain a qualified tester, test the BPA's, and then submit the appropriate test form(s) within a specified time period can be a burden. The City of Lake City has developed the **BACKFLOW PREVENTION ASSEMBLY TESTING AND MAINTENANCE PROGRAM** to assist businesses and home owners test these BPA's, saving time and money!

## **HOW THE PROGRAM WORKS**

The City of Lake City, in accordance with Florida statutes, the Department of Environmental Protection (rule 62-555.360), the City of Lake City Municipal Code (Chapter 102, Article I, Sections 5-13), and various plumbing codes, has expanded the backflow prevention program to ensure compliance by all commercial and residential customers.

The City of Lake City has entered into a contract with a professional service firm, HydroCorp, to manage the backflow prevention program, inspection and testing, as related to all existing backflow prevention assemblies (BPA's). This includes all commercial sites and private residences with irrigation systems and/or pools, connected to the City of Lake City water distribution system.

**Effective July 1, 2016 all BPA's connected to the City of Lake City water distribution system will be tested by a participating HydroCorp Contractor. There is no charge to the customer and no adjustments to the existing water rate to compensate for this service.** If your BPA fails, a letter will be provided to you by HydroCorp indicating the failed test. This letter will identify the problem with the BPA and why the device failed. The letter will also provide you with a list of City approved contractors who can provide you with a quote to repair the BPA and retest at the owners expense.

All commercial properties that are connected to the City of Lake City water distribution system are required to have a testable BPA located immediately after the water meter. The City of Lake City and HydroCorp are aware of properties requiring the installation of BPA's and will send a notice to these commercial properties informing them of the specific requirement.

Any plumbing contractors who desire to participate in the City's Backflow Program must register with HydroCorp, Inc. The City of Lake City will provide HydroCorp with a list of City of Lake City licensed plumbing contractors. For registration and general information contact Amy LaBute, 800-315-3713.