

WHY DO BACKFLOW PREVENTION DEVICES NEED TO BE TESTED PERIODICALLY?

Mechanical backflow preventers have internal seals, springs, and moving parts that are subject to fouling, wear, or fatigue. Also, mechanical backflow preventers and air gaps can be bypassed. Therefore, all backflow preventers must be tested annually to ensure they are functioning properly.

HOW DO I KNOW IF I NEED A BACKFLOW PREVENTION DEVICE?

A member of the City of Papillion Public Works Department Staff will send a questionnaire and/or visit your property to perform a premise survey for backflow requirements. You will receive a letter providing you with the guidelines and what action you need to take to ensure compliance with the City of Papillion's requirements.

HOW WILL A CROSS-CONNECTION CONTROL PLAN BE IMPLEMENTED IN THE CITY OF PAPILLION?

A cross-connection survey will be mailed to each customer once every five years. This survey must be returned to the City of Papillion within 30 days of receiving it. If you have any questions about the survey or need assistance filling it out, please contact Papillion Public Works at the location listed below.



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CROSS-CONNECTION CONTROL

in the City of Papillion

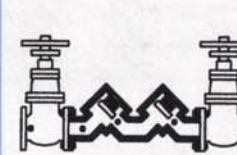


TYPES OF BACKFLOW PREVENTION DEVICES

There are several different types of backflow preventers that have been approved for use by the City of Papillion:

Approved Air Gap

An air gap is a vertical, physical separation between the end of a water supply outlet and the flood-level rim of a receiving vessel. This separation must be at least twice the diameter of the water supply outlet and never less than one inch. An air gap is considered the maximum protection available against backpressure backflow or backsiphonage but is not always practical and can easily be bypassed.

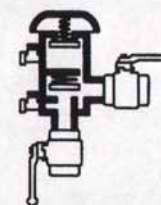
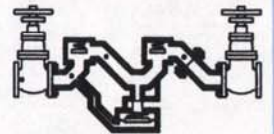


Double Check Valve Assembly (DC)

A DC is a mechanical backflow preventer that consists of two independently acting, spring-loaded check valves. It includes shutoff valves at each end of the assembly and is equipped with test cocks. A DC is effective against backpressure backflow and backsiphonage, but it should only be used to isolate non-health hazards.

Reduced Pressure Principle Backflow Assembly (RP)

An RP is a mechanical backflow preventer that consists of two independently acting, spring-loaded check valves with a hydraulically operating, mechanically independent, spring-loaded pressure differential relief valve between the check valves and below the first check valve. It includes shutoff valves at each end of the assembly and is equipped with test cocks. An RP is effective against backpressure backflow and backsiphonage and may be used to isolate health or non-health hazards.

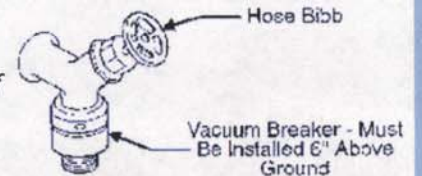


Pressure Vacuum Breaker Assembly (PVB)

A PVB is a mechanical backflow preventer that consists of an independently acting, spring-loaded check valve and an independently acting, spring-loaded air inlet valve on the discharge side of the check valve. It includes shutoff valves at each end of the assembly and is equipped with test cocks. A PVB may be used to isolate health or non-health hazards, but it is only effective against backsiphonage.

Hose Bibb Vacuum Breaker

A hose bibb vacuum breaker is an inexpensive device installed on a faucet or sill cock to protect against backflow from a garden hose or other type of hose. This is required on ALL residential and commercial outside spigots or sinks with hose attachments.



It is up to the City of Papillion to determine which type of backflow protection is required based on the degree of hazard that the property represents to the potable water supply.



## SAFE DRINKING WATER GUIDELINES

The goal of the City of Papillion Water Department is to provide safe drinking water to every tap, faucet, and glass. That is why your Water Department has adopted a State required and approved Cross-Connection Control Program. Its goal is to protect the public health, yours and that of families throughout the entire community.

A plumbing cross-connection is a connection between the water supply and a source of contamination or pollution. You personally have control over the safety of the water that you and your family use. By safeguarding your water supply and making sure that we protect the water supply from contamination through unprotected cross-connections, we all can be assured of a safe drink of water.

### CAUSES AND EFFECTS OF BACKFLOW

Backflow can threaten both public and private water supplies. Backflow is caused by cross-connections, connections between a safe drinking water supply and possible sources of contamination. All homes have potential cross-connections – water pipes and plumbing fixtures that may allow contamination to enter drinking water. They can be serious health hazards.

#### FOR EXAMPLE

In August, 1978, a professional exterminator was treating a church located in a small town in South Carolina for termites. The highly toxic insecticide, chlordane, was being mixed with water in small buckets. Garden hoses were left submerged in the buckets while the mixing was being accomplished. At the same time, workers came by to disconnect the parsonage water line from the church to install a separate water meter for the parsonage. In the process, the water was shut off in the area of the church building. As the remaining water in the lines was used by residents in the area, the church experienced a negative pressure. The chlordane was quickly siphoned into the water lines within

the church and became mixed with the Kool-Aid being prepared for the vacation bible school. Approximately a dozen children and three adults experienced dizziness and nausea. Fortunately, none required hospitalization.

#### How Can You Be Affected?

“Stomach flu” (gastroenteritis) is perhaps the most common ailment suffered by those drinking contaminated water. The Centers for Disease Control in Atlanta, Georgia, and the U.S. Environmental Protection Agency have documented many cases directly attributing the following illnesses and others to contaminated drinking water:

Brucellosis, Campylobacter, Chemical Poisoning, Cholera, Diarrhea Enteritis, Dysentery, Giardiasis, Hepatitis, Hookworm, Paratyphoid Fever, Typhoid, Polio.

### WHY DO WATER SUPPLIERS NEED TO CONTROL CROSS-CONNECTIONS & TO PROTECT THEIR PUBLIC WATER SYSTEMS?

Backflow into a public water system can pollute or contaminate the potable water in that system (i.e. backflow into a public water system can make the water in that system unusable or unsafe to drink), and each water supplier has a responsibility to provide water that is usable and safe to drink under all foreseeable circumstances. Furthermore, consumers generally have absolute faith that water delivered to them through a public water system is always safe to drink. For these reasons, each water supplier must take reasonable precautions to protect its public water system against backflow.

#### PREVENTING BACKFLOW

To protect your water supply, backflow preventers should be installed anywhere a potential cross-connection exists. A backflow preventer is a means or mechanism to prevent backflow. The basic means of preventing backflow is an air gap, which either elimi-

nates a cross-connection or provides a barrier to backflow. The basic mechanism for preventing backflow is a mechanical backflow preventer, which provides a physical barrier to backflow.








The costs of backflow prevention may seem prohibitive, but they are outweighed by the benefits. Consider: small amounts of some carcinogenic lawn chemicals and other contaminants could occasionally backflow for years and go unnoticed until serious health effects appear for those drinking the water. Backflow preventers can help safeguard the health of you and your family.

### 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 in the form of a physical air gap. However, most cross connections will need to be controlled through the installation of an approved mechanical backflow prevention device or assembly. Some common cross connections found in plumbing and water systems include:

1. Wash basins and service sinks
2. Hose bibs
3. Irrigation sprinkler systems
4. Auxiliary water supplies
5. Laboratory and aspirator equipment
6. Photo developing equipment
7. Processing tanks
8. Boilers
9. Water re-circulating systems
10. Swimming pools
11. Solar heat systems
12. Fire sprinkler systems

### DO'S AND DON'TS

-  Do keep the ends of hoses clear of all possible contaminants.
-  If not already equipped with an integral vacuum breaker, do buy and install hose bib type vacuum breakers (see reverse side of this pamphlet) on all threaded faucets around your home. These devices are inexpensive and are available at hardware stores and home improvement centers.
-  Do install an approved backflow prevention assembly on all underground lawn irrigation systems. Remember, a plumbing permit is required for the connection of an underground lawn irrigation system to your plumbing system.
-  Don't submerge hoses in buckets, pools, tubs, sinks, ponds, etc.
-  Don't use spray attachments without a backflow prevention device.
-  Don't connect waste pipes from water softeners or other treatment systems to the sewer, submerged drain pipe, etc.
-  Don't use a hose to unplug blocked toilets, sewers, etc.

