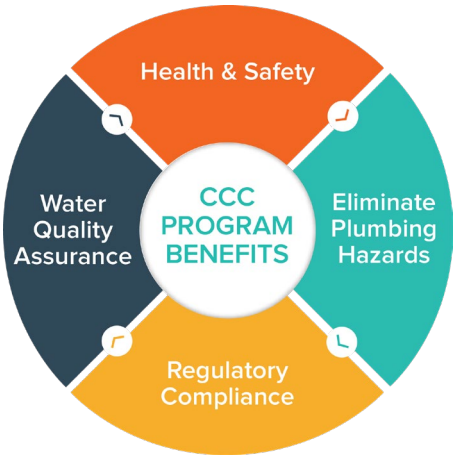
Cross-Connection Control Program Public Awareness Toolkit

HYDROCORP™
THE SAFE WATER AUTHORITY™

Critical Knowledge from HydroCorp™ – The Safe Water Authority™

As your CCC Program Service provider, HydroCorp has assembled these exclusive tools and resources to assist with public awareness on this important safety program.



Cross-Connection Control

Preventing backflow contamination and locating undetected cross-connections to the public water supply is a team effort between building owners and the water purveyor. Informing local water customers and building owners affected by the Cross-Connection Control (CCC) program is essential for program success and compliance.

The intended audience of these resources is the end user; Water Customer, Occupant, and/or Owner.

Toolkit Points of Contact:

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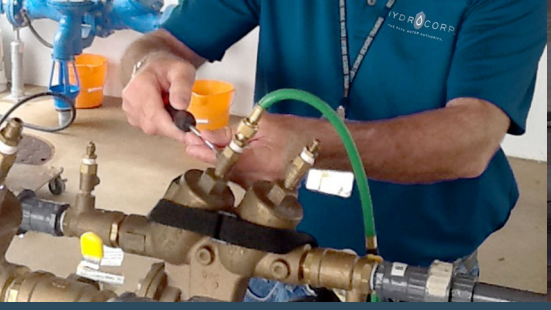
Chelsea Zink – Photos & Graphics – czink@hydrocorpinc.com

*Public Awareness Toolkit includes:

1. Common Definitions and Code References.
2. Sample Cross-Connection Control Program Announcement Letter.
3. Digital Tri-Fold Educational Brochure - Printed versions available for fee.
4. Pre-written Social Media posts/links.
5. Technical images for use on Utility/City website and Social Media posts.
6. Link to online video explaining the Cross-Connection Control Program
7. Public Awareness/FAQ Web Page hosted by HydroCorp.

**HydroCorp extends limited permission use of these digital and intellectual resources to HydroCorp clients for the duration of a Cross-Connection Control Program Service Contract.*




1. Common Definitions and Code Reference

How Does Backflow or Cross-Connection Contamination Occur?
Water normally flows in one direction, from the public 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 waterline.

ASSE – American Society of Sanitary Engineering. ASSE International is a membership organization and leading product and personnel certification agency for companies and individuals representing all disciplines of the plumbing and mechanical industries. Michigan International Plumbing Code recognizes ASSE standards for plumbing products and backflow preventer testing/surveying associated with potable water plumbing systems.
https://www.asse-plumbing.org/asse/personnel-certification/5000

ASSE 5110 – Backflow Prevention Assembly Tester
ASSE 5120 – Cross-Connection Control Surveyor
ASSE 5130 – Backflow Prevention Assembly Repairer
ASSE 5140 – Fire Protection System Backflow Prevention Assembly Tester
ASSE 5150 – Backflow Prevention Program Administrator

AIR GAP - The unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet supplying water to a tank, plumbing fixture or other device and the flood level rim of the receptacle.

BACKFLOW. The undesired reversal in the direction of flow of water in a plumbing system, caused by backpressure or backsiphonage.

BACKPRESSURE- The backflow of potentially contaminated water into the potable water system because of the downstream side of the piping system pressure is greater than the supply pressure.

BACKSIPHONAGE. - The backflow of potentially contaminated water into the potable water system because of the pressure in the potable water system falling below atmospheric pressure of the plumbing fixtures, pools, tanks or vats connected to the potable water distribution piping.

(Continued) Common Definitions and Code Reference

BACKFLOW PREVENTER - A backflow prevention assembly, a backflow prevention device or other means or method to prevent backflow into the potable water supply.

CROSS-CONNECTION - Any actual or potential connection or arrangement between two otherwise separate piping systems, one containing potable water and the other containing an unknown liquid, steam, gas, solid, or chemical, whereby there exists the possibility for flow from one system to the other, with the direction of flow depending on the pressure differential between the two systems (see "Backflow").

CROSS-CONNECTION CONTROL PROGRAM – A program, or process to identify, control or eliminate cross connections, and prevent cross connections from allowing the backflow of non-potable water into a potable water supply.

MICHIGAN CROSS-CONNECTION CONTROL PROGRAM REGULATION
Until recently, this State Mandated Program focused on non-residential (commercial) water service connections and onsite visual inspections (coordinated and performed by HydroCorp of Troy, MI) to identify potentially harmful interconnections to the Local Public Water Supply.

View the Cross-Connection Control Rules Manual:

NONPOTABLE WATER. Water not safe for drinking, personal or culinary utilization.

POTABLE WATER - Water free from impurities present in amounts sufficient to cause disease or harmful physiological effects and conforming to the bacteriological and chemical quality requirements of the Public Health Service Drinking Water Standards or the regulations of the public health authority having jurisdiction.

IPC – International Plumbing Code – Michigan adopted version of the International Plumbing Code. Viewable at: 2018 Michigan Plumbing Code.

WATER SUPPLY SYSTEM - The water service pipe, water distribution pipes, and the necessary connecting pipes, fittings, control valves and all appurtenances in or adjacent to the structure or premises.

2. Sample Cross-Connection Control Program Announcement Letter

- Customizable letter to send out to your water customers to announce the beginning of the Cross-Connection Control Program.

- Customization includes logo, name/title of the head of Public Works, and any specifics regarding the program.

- Download Link: [MI Sample Cross Connection Control Program Announcement Letter]

City of SampleVille
Replace with future Client Logo

Dear Water Customer,

The City of Sampleville provides safe, clean drinking water to households, businesses, and institutions throughout your community. Section 608.6 of the Michigan Plumbing Code prohibits hazardous interconnections to public water systems and requires all public water systems development a comprehensive Cross-Connection Control Program. Section 608.13 requires specific backflow prevention devices, methods and assemblies to isolation cross-connection control hazards associated with potable water supply plumbing.

Elements of this new safety program include:

- Postal notifications to water customers with instructions and responsibilities.
- Requirements to provide Annual Test Reports of existing Backflow Preventers.
- Potential on-site surveys for undetected Cross-Connections
- Potential corrective action for non-compliance service connections.

To ensure cost-effective compliance and high-quality service, the City of Sampleville has contracted with HydroCorp, a specialized service provider for Cross-Connection Control Programs with over 39 years of experience. HydroCorp will be notifying water customers with specific instructions for each service connection and handling frequently asked questions via a toll-free phone line, online chat and web pages. Learn more about HydroCorp and this new program at WaterCustomer.com or HydroCorpinc.com

Your cooperation and participation in this important local safety program is appreciated.

Sam Samples, Public Works Director

City of Sampleville

3. **Digital Tri-Fold Educational Brochure - Printed versions available for fee.**

Downloadable Link: [Michigan Residential Cross-Connection Control Awareness Brochure.PDF]

PROTECTING THE SAFETY OF YOUR HOME'S DRINKING WATER

MICHIGAN

From the Hazards of Cross-Connections and Backflow

HYDROCORP
THE SAFE WATER AUTHORITY®

What is a Cross Connection?

A cross-connection is an actual or potential connection between the safe drinking water (potable) supply and a source of contamination or pollution. State plumbing codes require approved backflow prevention methods to be installed at every point of potable water connection and use. Cross-Connections must be properly protected or eliminated.

BACKSIPHONAGE
May occur due to a loss of pressure in the municipal water system during a fire fighting emergency, a water main break or system repair. This creates a siphon in your plumbing system which can draw water out of a sink or bucket and back into your water or the public water system.

BACKPRESSURE
May be created when a source of pressure (such as a boiler) creates a pressure greater than the pressure supplied from the public water system. This may cause contaminated water to be pushed into your plumbing system through an unprotected cross-connection.

HOW DOES CONTAMINATION OCCUR?

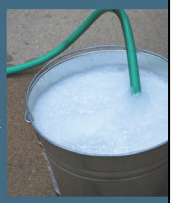
When you turn on your faucet, you expect the water to be as safe as when it left the treatment plant. However, certain hydraulic conditions left unprotected within your plumbing system may allow hazardous substances to contaminate your own drinking water or even the public water supply.

Water normally flows in one direction. However, under certain conditions, water can actually flow backwards; this is known as Backflow. There are two situations that can cause water to flow backward: backsiphonage and backpressure.

INSIGHTS TO PROTECT YOUR DRINKING WATER

DO...

- Ensure that lawn irrigation systems have proper backflow protection. Backflow Prevention Assemblies must be tested at appropriate intervals by a certified tester, as required by your local water provider and plumbing codes.
- Verify and install a simple hose bibb vacuum breaker on all threaded faucets around your home.
- Make sure water treatment devices such as water softeners have the proper "air gap", which is a minimum of one inch above any drain.



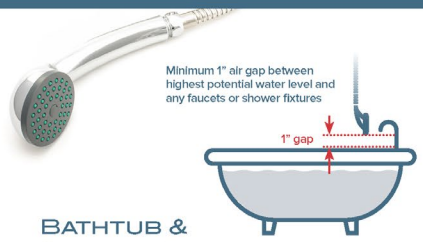
DON'T...

- Submerge hoses in buckets, pools, tubs, sinks or ponds.
- Use spray attachments without a backflow prevention device.
- Connect waste pipes from water softeners or other treatment systems directly to the sewer or submerged drain pipe. Always be sure there is a one-inch "air gap" separation.

(Continued) Digital Tri-Fold Educational Brochure -Printed versions available for fee.

Downloadable Link: [Michigan Residential Cross-Connection Control Awareness Brochure.PDF]

AVOIDING BACKFLOW THROUGHOUT THE HOME

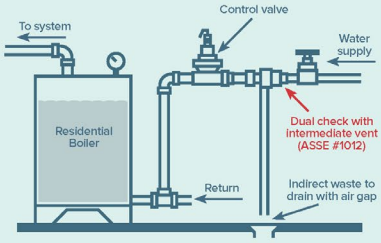


BATHTUB & SHOWER FIXTURES

A hand-held shower fixture is compliant if:

- When shower head is hanging freely, it is at least 1" above top of the flood level rim of the bathtub
- Complies with ASSE#1014
- Has the ASME code A112.18.1 stamped on the handle

BOILERS

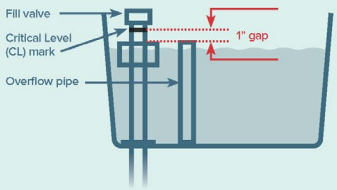


Boilers with chemical additives require an ASSE #1013 – Reduced Pressure Principle Backflow Prevention Assembly.

TOILET TANKS

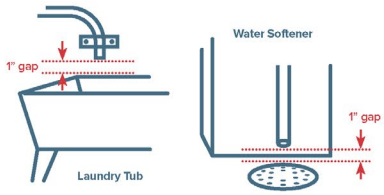
There are many unapproved toilet tank fill valve products sold at common retailers which do not meet the state plumbing code requirements for backflow prevention.

- Look for the ASSE #1002 Standard symbol on the device and packaging.
- Replace any unapproved devices with an ASSE #1002 approved anti-siphon fill valve device. Average cost is typically $12 to $22 at home improvement stores.
- Verify overflow tube is one inch below critical level (CL) marking on the fill valve.



ELSEWHERE IN THE HOME

Always maintain an air gap of at least 1 inch between the end of drain hoses and the highest potential water level.



HOME EXTERIOR

Verify all outside faucets are protected with a hose bibb vacuum breaker of the ASSE-certified types shown below.

DID YOU KNOW?

Your water can become contaminated if connections to your plumbing system are not properly protected! The purpose of the local Cross-Connection Control Program is to ensure that everyone in the community has safe, clean drinking water.

PUBLIC HEALTH & SAFETY....

To avoid contamination, backflow preventers are required by state plumbing codes wherever there is an actual or potential hazard for a cross-connection. The Michigan Department of Environmental Quality (MDEQ) requires all public water suppliers to maintain an on-going Cross-Connection Control Program involving public education, onsite inspections, and if required, corrective actions by building and home owners.

For more detailed information about cross-connection control and backflow prevention in Michigan, please visit www.hydrocorpinc.com/residential

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www.hydrocorpinc.com

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4. Pre-Written Social Media posts/links

Share or embed these HydroCorp Blog Posts:

https://hydrocorpinc.com/blog/a-critical-need-the-cross-connection-control-survey/

https://hydrocorpinc.com/blog/residential-cross-connection-control-options-for-your-community/

https://hydrocorpinc.com/blog/healthcare-facility-water-systems-shining-a-light-on-the-hidden-dangers/

https://hydrocorpinc.com/case-studies/debugging-a-food-processing-plant/

Facebook/Social Media Post #1
Cross-Connection Control Program now includes Residential Water Service Connections. Until recently, this State Mandated Program focused on non-residential (commercial) water service connections and onsite visual inspections (coordinated and performed by Authorized Contractor, HydroCorp) to identify potentially harmful interconnections to the Local Public Water Supply.

Learn more about the Residential Program HERE (*note portions of this manual are not current*)

HydroCorp Image for use:

(Continued) Pre-Written Social Media posts/links

Facebook/Social Media Post #2

Wow! Did you know the most common contamination to household drinking water plumbing is the garden hose style hose bibb fixture? It is True! A common hose submerged into a bucket or sink of non-potable water or solution can easily contaminate your drinking water if a backflow situation suddenly occurs in the vicinity. Although rare, backflow can occur when a water supply main breaks occur or when a fire hydrant is in use.

HydroCorp Image for use:

Caption: Backflow contamination can occur at any point in a plumbing system where there is no proper backflow prevention installed.

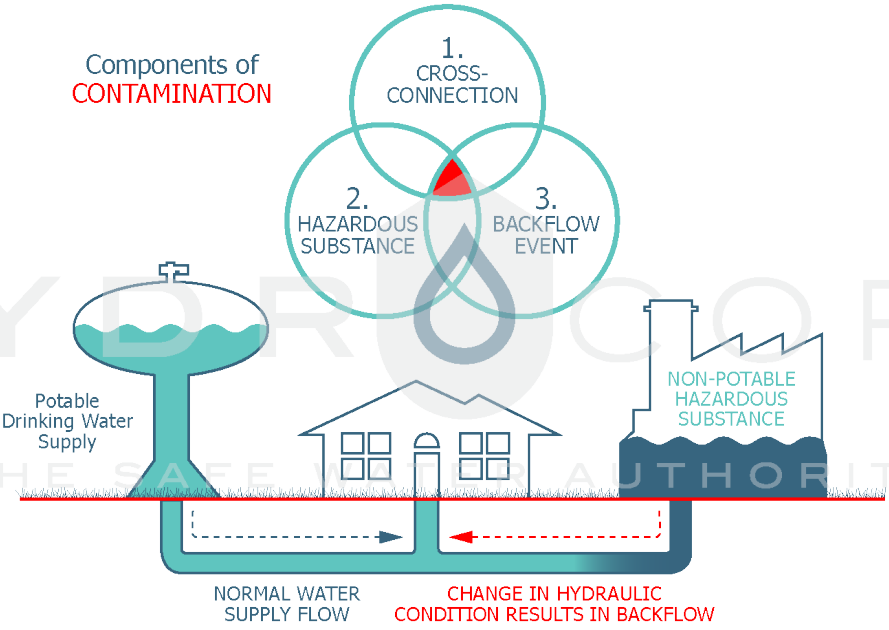
(Continued) Pre-Written Social Media posts/links

Facebook/Social Media Post #3

What can you do to help prevent your drinking water from contamination? It's simple! When you are notified, participate in the NAME OF WATER PURVEYOR Cross-Connection Control Program!

HydroCorp Image for use:

Caption: Backflow is an inherent hydraulic problem associated with all public water systems. The purpose of a cross-connection control program is to prevent contamination of the public water supply.



(Continued) Pre-Written Social Media posts/links

Facebook/Social Media Post #4

Protect the drinking water supply in your own building from backflow contamination! The Number one source of contamination to the drinking water supply system within a building is the common hose bibb connection. Even if your building has a testable backflow preventer at the service connection, your interior plumbing can be subjected to accidental backflow contamination. You can help by verifying your building or home has hose bibb fixtures with appropriate backflow prevention or simply install a thread-on style approved backflow preventer (average cost from hardware store is $11-$15).

HydroCorp Image for use:

Caption: As simple as it appears, the backflow preventer properly attached to this water outlet can prevent a high-hazard contamination of the water supply.

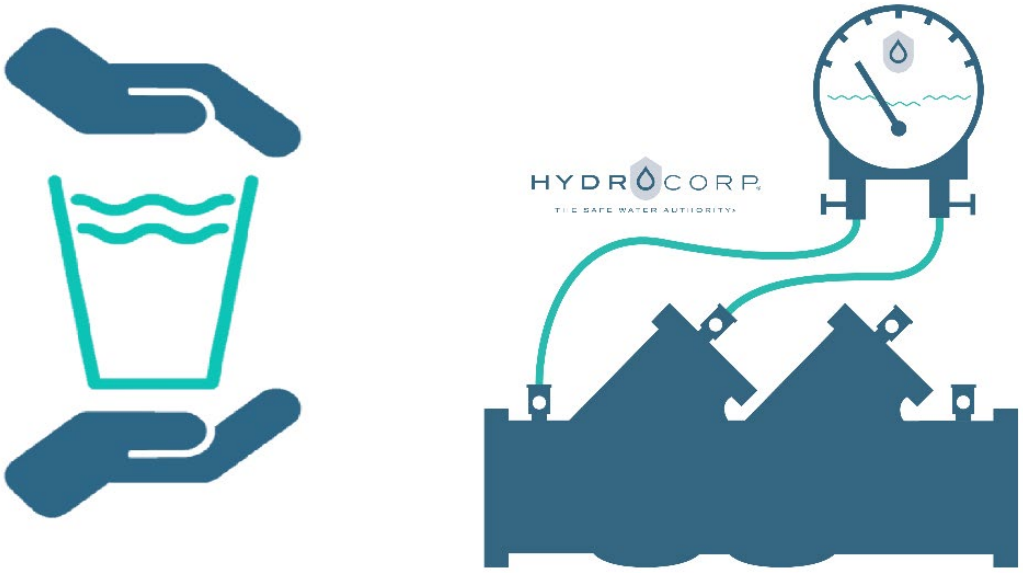
(Continued) Pre-Written Social Media posts/links

Facebook/Social Media Post #5

Help ensure safe drinking water! Many buildings connected to the local public water system have critical safety valves known as Backflow Prevention Assemblies. These assemblies are required by state plumbing codes to be tested frequently by a certified technician. As part of the local Cross-Connection Control Program, NAME OF WATER PURVEYOR will be notifying building owners with instructions on how to process the testing information where Backflow Prevention Assemblies are known or identified.

HydroCorp Image for use:

Caption: Backflow preventers are prone to failing to protect the water quality when they are not tested or maintained.



(Continued) Pre-Written Social Media posts/links

Facebook/Social Media Post #6

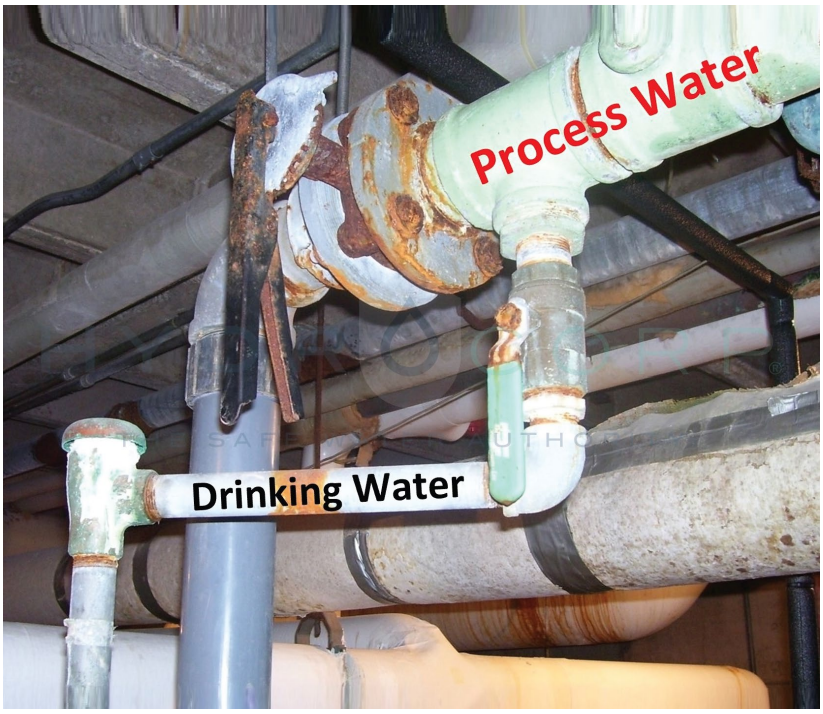
Look up! Look around! Look everywhere there are pipes supplying drinking water, and you may likely find an unprotected cross-connection. The new local Cross-Connection Control Program being implemented in NAME OF COMMUNITY will help identify undetected hazards and maintenance issues that could cause harm to the water quality.

Until recently, this State Mandated Program focused on non-residential (commercial) water service connections and onsite visual inspections (coordinated and performed by Authorized Contractor, HydroCorp) to identify potentially harmful interconnections to the local Public Water Supply.

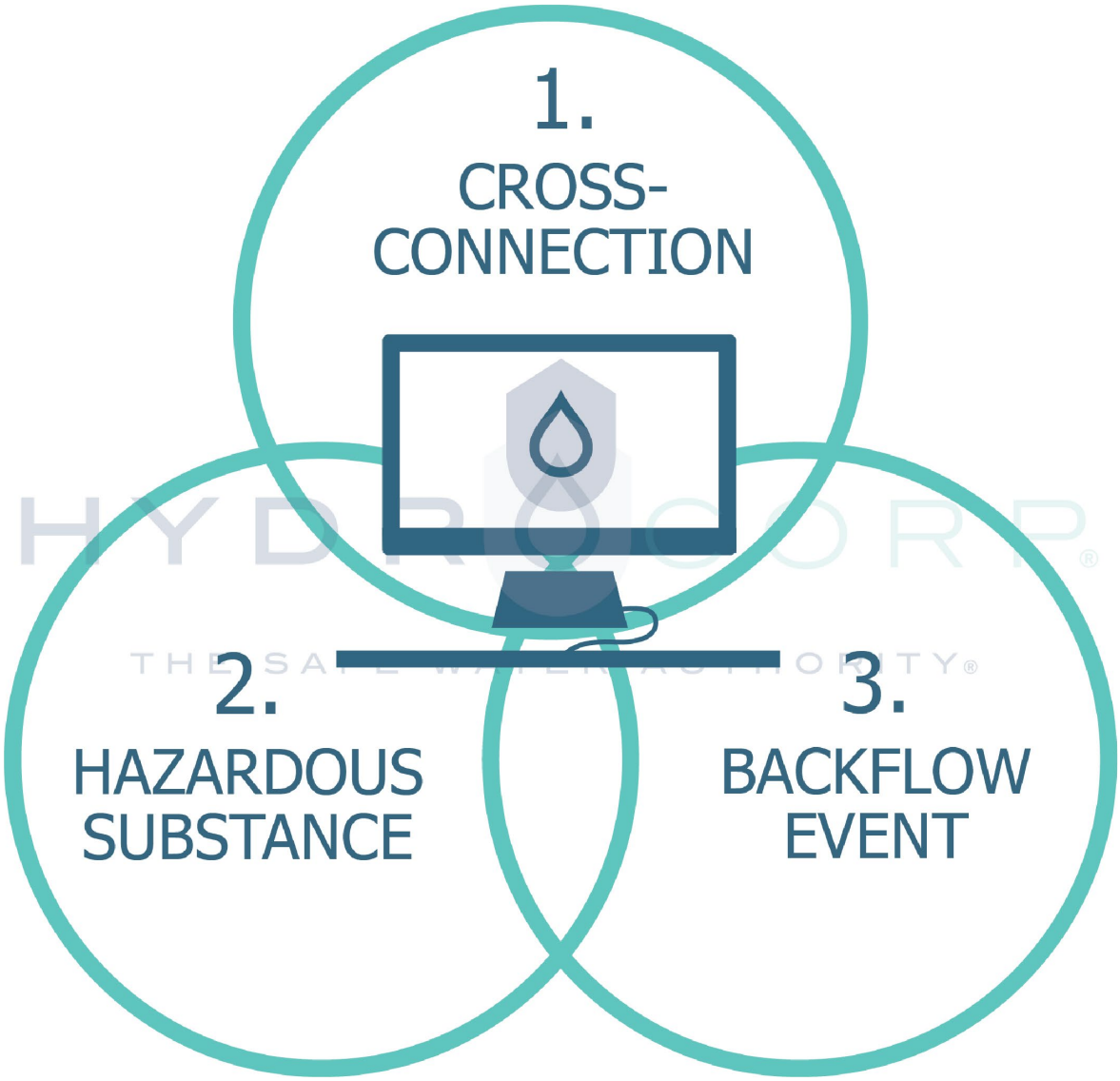
View the Cross-Connection Control Rules Manual: *(note portions of this manual are not current)*

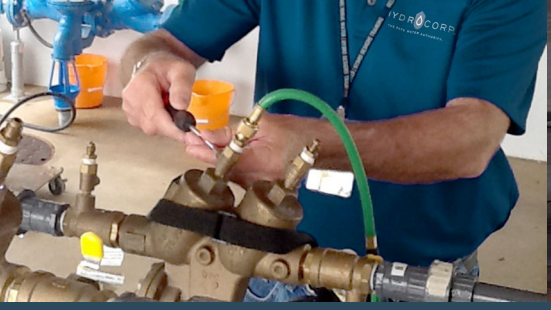
HydroCorp Image for use:

Caption: An unprotected cross-connection to the drinking water plumbing can cause contamination.



5. Technical images for use on Utility/City website and Social Media





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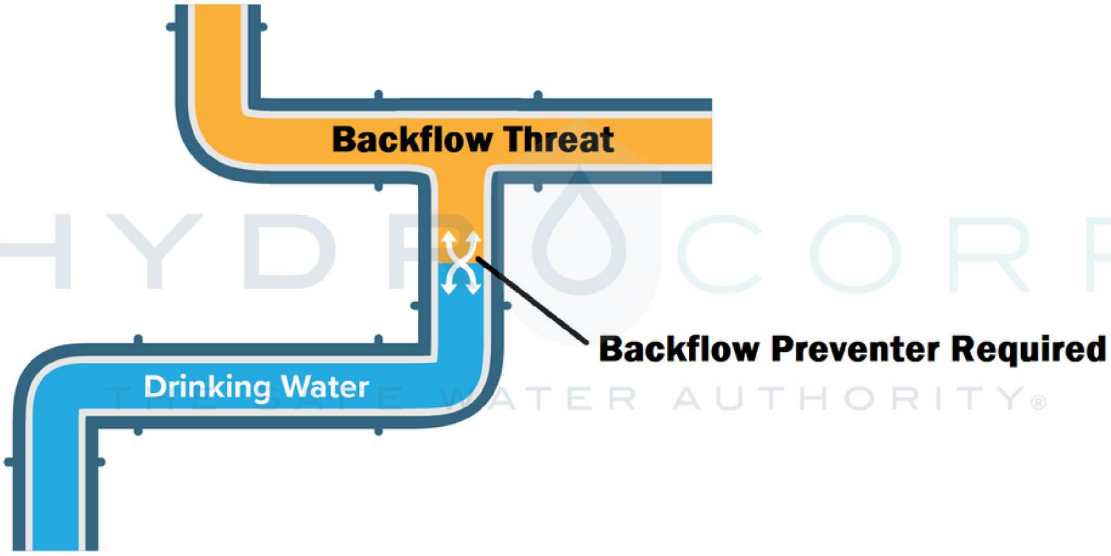

(Continued) Technical images for use on utility/City website and Social Media

Caption: A typical backflow preventer assembly installation at the service line (entry point) to a building. This arrangement prevents any contamination downstream (from the building) from backflowing into the main public supply.

(Continued) Technical images for use on utility/City website and Social Media

Caption: A Backflow Preventer with missing control valve can not be legally tested. Corrective action or replacement must occur for proper testing and compliance. This Backflow Preventer is also installed low to the floor, must be at least 12" above the ground/floor.

(Continued) Technical images for use on utility/City website and Social Media

Caption: ASSE Certified Backflow Preventer Testers use specially designed and calibrated pressure differential gauges during the mandatory performance test and documentation.

6. Link to online video explaining the Cross-Connection Control Program

Use the links below to embed into your Water Utility/Municipal website or share to social media.

- Residential Universal: https://www.vimeo.com/660943592/c67fae33fd
- Residential Exterior: https://www.vimeo.com/manage/videos/644368096/c75adea118
- Residential Interior: https://www.vimeo.com/644376381/3ba7111edc
- Commercial Universal: https://www.vimeo.com/676353673/4c52d9ac47

7. Public Awareness/FAQ Web Page Hosted by HydroCorp

(Developed within 2 weeks of HydroCorp Residential CCC Program contract)

Example: https://watercustomer.com/swartz-creek