



City of Whitewater Municipal Code 14.08.342-346, Wisconsin Department of Natural Resources Code NR810.15, and the Wisconsin Department of Commerce SPS 382.41 requires every municipal water supplier to develop and implement a comprehensive Cross-Connection Control Program for the elimination of all existing and potential cross-connections as well as the prevention of future cross-connections.

The utilities job is to deliver safe, high-quality drinking water every day. A Cross-Connection Control Program is designed to safeguard public health and continue to keep the water system free of contaminants and pollutants.

Inspections are performed on all commercial, industrial, public authority, multi-family, and residential buildings connected to the water supply in order to detect actual and potential cross-connections and to make recommendations for the installation of backflow prevention methods or devices, wherever necessary. This action ensures that contaminated water cannot backflow into our clean, drinking water supply.

By ordinance, property owners of non-residential properties (industrial, commercial, public authority and multi-family) must, at their own expense, have their plumbing system inspected every two years by a State of Wisconsin Certified Cross-Connection Inspector/Surveyor. For more information on how to find a State of Wisconsin Certified Cross-Connection Inspector/Surveyor visit the Wisconsin Department of Safety and Professional Services website or call (877) 617-1565.

Inspections occur on varying frequencies based on the hazard level of a given facility. Examples of the frequency may be, but not limited to:

- Commercial, Industrial, Public Authority and Multi-Family - 2 Year Cycle
- Commercial like Residential – 10 Year Cycle
- Residential - 10 Year Cycle

The Cross-Connection Control Program shall include residential and non-residential properties.

Residential surveys are coordinated with our water meter replacement program. When a water meter is replaced, a residential cross-connection inspection will also be performed.

Commercial, industrial, public authority and multi-family facilities are not coordinated with the residential inspection cycle. Rather, these higher-risk facilities receive a comprehensive survey (by mail) every two years to be completed at the owner's expense.

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

A cross-connection control program is a cooperative effort between a municipality, health officials, plumbing contractors, and property owners. The purpose is to establish and administer guidelines for the control of potential cross-connections and ensure their enforcement so that the public drinking water supply is protected both in the city water mains and within buildings to the point of use.

Our program includes the following components:

- Cross-Connection Control Surveys – All commercial, industrial, public authority, multi-family, and residential plumbing systems will be inspected to determine if any cross-connections exist
- Installation of Protective Devices – Backflow prevention devices or assemblies will be installed by the owner where unprotected cross-connections are found to exist
- Public Education Materials – Our water customers will have access to public education and awareness on our website at <https://www.whitewater-wi.gov/257/Water-Utility>

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

A cross-connection is an actual or potential connection between the public water supply system and a source of contamination or pollution. The most common cross-connection is a garden hose, which is easily connected to the public water supply system and can be used to apply a variety of potentially dangerous substances including chemicals and fertilizer. Other common cross-connections include boilers, pressure washers, toilets, pools, and lawn irrigation systems.

## **How Does Contamination Occur?**

Water normally flows in one direction from the public water system through a 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 which may occur when either back-siphonage or backpressure is created in a water line. Back-siphonage creates a vacuum which may pull or siphon contaminants backwards into the drinking water supply while backpressure may force contaminant-laced water back into the building's piping system.

Back-siphonage may occur when there is a drop in the supply pressure of the water distribution system. This can be caused by a water line break, water main repair, or during a rapid withdrawal of water from a fire hydrant (i.e. flushing or firefighting). Backpressure may be created when a source of pressure, such as a pump, a steam or hot water boiler, or elevated storage tank creates a pressure greater than that supplied from the water distribution system.

## **How Is Contamination Prevented?**

Identifying a cross-connection is the first step in preventing potential water contamination. An effective Cross-Connection Control Program involves implementation of methods or devices that prevent the backflow of potentially compromised water into the building's plumbing system once a hazard has been identified. An air gap is the most effective barrier. A variety of mechanical barriers including the hose connection vacuum breaker, reduced pressure zone backflow preventer, double check valve assembly or atmospheric vacuum breaker can also be installed to prevent backflow.

## **What is a Non-Residential Cross-Connection Survey?**

The cross-connection survey is the first step in our program and was established for commercial, industrial, public authority, and multi-family facilities. It consists of a systematic walk-through of the water system piping in a building or property, starting at the water meter and ending at the last free flowing tap. An inspector, accompanied by a building representative, documents all actual or potential cross-connections and notes any method, device or assembly employed to prevent backflow.

The City of Whitewater has partnered with HydroCorp for non-residential cross-connection surveys. Therefore, you will receive a notification from HydroCorp, on behalf of the City of Whitewater, with a tentative schedule for your survey. At this time, there is no cost to the owner for the completion of this survey. Questions regarding your cross-connection survey should be directed to HydroCorp at (844) 493-7641.

Common cross-connection hazards encountered during a survey may include any of the following:

- Heating and cooling systems – boiler, chiller, cooling tower
- Medical, laboratory or industrial equipment connected to the water supply
- Water treatment devices – water softener, reverse osmosis unit
- Hose sprayer, power washer, utility sink, hose connection
- Carbonated beverage machine, steamer, proofer
- Fire sprinkler or lawn irrigation system
- Shampoo bowl or pedicure chair
- Chemical mix system

Survey times vary depending on the facility being inspected. A small facility with few connections to the water supply may require thirty minutes or less while a larger, more complex facility may require multiple visits to inspect the facility and document all cross-connections and any violations identified.

At the conclusion of the survey, the HydroCorp inspector will describe any violations that were identified and the corrections that must be made. A written notice of the violations and a time frame for compliance is mailed to the owner, or their agent, typically within 5-7 business days. This report will indicate what steps must be taken. It may require the owner to purchase, install or test backflow prevention devices. Survey results should be returned to the Department of Safety and Professional Services (DSPS) and the City of Whitewater, Water Utility Superintendent, PO Box 178, Whitewater, WI 53190.

A common violation observed during the cross-connection survey is the failure to complete or submit the results of the annual performance test for testable assemblies (double check assembly, reduced pressure principle backflow preventer, pressure vacuum breaker) to the Department of Safety and Professional Services [DSPS] and the City of Whitewater Water Utility. Repeated failure to perform or report the annual performance test may result in a citation.

### **What is the Extent of a Residential Cross-Connection Survey?**

Residential cross-connection surveys are performed in accordance with the City of Whitewater Municipal Code 14.08.342-346, Wisconsin Department of Natural Resources Code NR810.15, and the Wisconsin Department of Commerce SPS 382.41 for Cross-Connection Control Safety.

Inspections occur at routine meter change outs and are performed by City staff. They are performed in order to protect the potable water supply from interconnections between potable and non-potable water. The Utility requires follow up inspections to ensure that all identified cross-connections are eliminated.

Residential inspections are generally limited to the area near the water meter which is typically located in the basement. During cross-connection appointments, the following items may be inspected:

- Water softener
- Drain laundry tub with hose threads
- Inside hose bibb(s)
- Toilet(s)
- Humidifier
- Outside hose bibb(s)
- Lawn irrigation systems
- Hand-held showers

- Sump pump discharge
- Pool/spa/hot tub
- Kitchen faucets

Before your scheduled meter installation, please do the following:

- Ensure the area around the water meter is clear to allow working space for the installer.
- Check that the water shut off valve that is before your water meter is in working condition (meaning the valve before the meter at the copper pipe comes out of the floor). If the valve does not operate properly, it is the homeowner's responsibility to have the valve replaced.

## **Questions?**

Feel free to contact the Water Utility at (262) 473-0560 with questions regarding the Residential Cross-Connection Control Program.

Questions regarding the Non-Residential Cross-Connection Control Program should be directed to HydroCorp at (844) 493-7646.

You may also find more information regarding the Cross-Connection Control Program by visiting our website at <https://www.whitewater-wi.gov/257/Water-Utility>.