



ISSUE UPDATE

DRINKING WATER SYSTEM CROSS CONNECTION CONTROL PROGRAM

Introduction

All municipal water systems in Michigan are required to implement a cross connection control program to protect the integrity of the drinking water in the municipal water distribution system following treatment. A **cross connection** is an arrangement of piping that could allow undesirable water, sewage, or chemical solutions to enter the drinking water system as a result of **backflow**. **Backflow, or flow reversal**, can occur when the pressure in the customer's plumbing system exceeds the municipal supply pressure. This situation can occur due to loss of system or local pressure in the event of a pumping or water main failure, or due to a reduction of pressure due to unusual water demands, such as during fire fighting. On the customer's side, backflow potential may result from higher pressure from booster pumps, heating water in a closed system like a boiler, or an interconnection with a secondary water supply or other piping system.

What are the risks?

The City water supply has a long history of meeting all drinking water quality standards. Our safe groundwater well supply and full treatment process assure excellent water quality going into the distribution system. Frankly, the greater risk to drinking water quality is from potential backflow from customer cross connections. We have been fortunate to have not experienced any significant cases in Owosso. However, there are all too many instances in other communities, including some with significant health impacts, to know this is a real risk and that it could occur anywhere. We are aware of some isolated instances and examples that did occur in Owosso. In one case "blue" water from a disinfectant in an upstairs toilet supply tank back-siphoned into a downstairs apartment sink faucet when the building plumbing was turned off for customer repairs. In a more recent instance, compressed air was injected into the water system when an improper piping connection was made during the installation of a whirlpool or spa.

Who is responsible to prevent cross connections and backflow?

Preventing cross connections and protecting our drinking water quality requires cooperation from all involved - from the City, to those doing plumbing work and inspecting plumbing work, to owners/operators of facilities serving the public, and on to the individual homeowner. The City Water Utility's primary responsibility is to protect the public water supply from contaminants and pollutants that could backflow into the municipal distribution system from the customer service connection. A building owner/operator is responsible to maintain the integrity of their on site plumbing in order to maintain the drinking water quality being provided to their employees, customers, or family members. This may include the installation and routine testing, by properly trained and certified personnel, of backflow prevention devices. They are assisted in that regard by state plumbing codes, which prohibit cross connections and prescribe acceptable fixtures and backflow prevention devices. Owners of plumbing systems can help prevent cross connections by utilizing properly trained and licensed plumbers, and assuring that plumbing permits and inspections are acquired for new work or modifications to plumbing systems.

City Cross Connection Program

In previous years the City program dealt primarily with industrial facilities, major public facilities such as schools and city buildings, and commercial buildings with a high potential for possible cross connections. However, our program has been hampered by staff limitations. Last year the City entered a 3-year contract with Hydro Designs, Inc. to update and expand the City program. Hydro Designs is a firm specializing in municipal cross connection program services. The contract calls for 600 facility inspections over the 3 year period, which should provide updated inspection of all industrial, commercial and public facilities connected to the City water system. There is not a separate charge to the customer for the cross connection inspection. However, it is the building owner's responsibility to eliminate cross connections if found. In some instances the building owner may be required to install a backflow prevention device. Some of the devices will require annual testing by a certified tester at the owner's expense.

The City is currently updating its Cross Connection Control Plan. **The Owosso City Council will be receiving public comment on our proposed program plan at its April 16th meeting at 7:30pm at the Owosso City Hall.** Following response to state review and public comment the Plan update would be adopted as a departmental rule. The 63 page plan is available for viewing at City Hall or the City web site at <http://www.ci.owosso.mi.us>

What about residential customers?

In a world of unlimited resources every building plumbing system served by the municipal water system should be inspected and brought into compliance with all cross connection regulations. Resources are of course limited. We are therefore asking residential customers to act in their own self interest and to voluntarily protect their own family's drinking water quality. This involves learning what might constitute a cross connection and taking steps to eliminate known or potential cross connections.

What are common cross connections around the home?

The principal areas of household water use that pose a threat due to cross connection are:

- A hose connection to a chemical solution sprayer to feed lawn /shrub herbicides, pesticides and fertilizers (protect with an atmospheric vacuum breaker at the hose bib).
- A lawn irrigation system (protect with a proper vacuum breaker or backflow device – note that some devices require annual testing, which should be done on spring start-up)
- Chemically treated boiler systems (should have a proper backflow device on the make-up water line)
- Older, off code toilet fill assemblies (replace with new fixture or anti-siphon ball cock assembly)
- Other water use areas of concern include, but are not limited to; swimming pools, water softeners, irrigation piping served by secondary wells or the river, submergible hose outlets, etc.

Where can I get more information?

The City will be distributing more information on preventing residential cross connections. You can contact the City Water Department (989-725-0599 or City Hall) or your local plumbing contractor for help on specific questions.