

# **Troy Center Sanitary District #1**

## **Cross Connection Control Plan**



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## TABLE OF CONTENTS

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I	<b>Purpose</b>
11	<b>Responsibilities</b>
111	<b>Authority</b>
IV	<b>Definitions</b>
V	<b>Degree of Hazard and Approved Devices</b>
VI	<b>Administration</b>
	A- Program
	B- Inspection
	C- Testing
	D- Installation
	E- Exemptions
	F- Compliance

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## **I. PURPOSE**

Cross connections between a potable water system and non-potable sources of contamination represent a threat to public health. This program is designed to maintain the safety and potability of the water in the supply and distribution system by preventing the introduction, by backflow, of any foreign liquids, gases, or other substances into the supply system.

## **II. RESPONSIBILITIES**

Under Wisconsin Legislature Code NR 810.15, the Utility is responsible for a Cross Connection Program for the elimination of all existing and potential cross connections as well as the prevention of future cross connections.

### **Owner / Consumer**

The customer is responsible for ensuring the integrity of the system piping and water downstream of the property line excluding the meter. It is the responsibility of the owner / consumer to avoid cross connections on their property and/or install appropriate backflow devices and to maintain and test the devices. The customer must provide information to the public water utility.

### **Utility Owner**

It is the responsibility of the public water utility to disconnect service upon failure of the property owner to comply with the requirements of the Utility's Cross Connection Control Program.

## **III. AUTHORITY**

This program derives its enforceability from:

**National:** Safe Drinking Water Act of 1974

**State:** Wisconsin Department of Natural Resources

**Local:** The Troy Center Sanitary District # 1 Commission

#### **IV. DEFINITIONS**

##### **A. *BACKFLOW***

The flow of water or other foreign liquids, gases, or other substances into the distribution system of a public water supply from any source other than the intended.

##### **B. *BACKFLOW PREVENTION DEVICE***

A device to prevent backflow.

###### **1. Air Gap**

A physical separation sufficient to prevent backflow between the free-flowing discharge end of the potable water system and any other system.

###### **2. Atmospheric Vacuum Breaker**

A device which prevents back-siphonage by creating an atmospheric vent where there is either a negative pressure or sub-atmospheric pressure in a water system.

###### **3. Backflow Prevention Device with Intermediate Atmospheric Vent**

A device having two check valves separated by an atmospheric vent.

###### **4. Double Check Valve Assembly**

A device having two, weight or spring loaded, bronze faced with soft rubber disc check valves, with shut-off valves and test cocks for periodic testing.

###### **5. Hose Bibb Vacuum Breaker Device**

A device which is permanently attached to a hose bibb, and which acts as an atmospheric vacuum breaker.

###### **6. Pressure Vacuum Breaker**

A device containing a spring-loaded check valve and a spring-loaded atmospheric vent which opens when pressure approaches atmospheric. It contains valves and fittings which allow the assembly to be tested.

## 7. Reduced Pressure Principle Backflow Prevention Device (RPZ)

An assembly of check valves and a reduced pressure zone which spills water to the atmosphere in the event of the failure of the check valves. It has valves and fittings which allow the device to be tested.

### ***C. BACK SIPHONAGE***

Backflow resulting from negative or less than atmospheric pressure in the water system.

### ***D. BACK-PRESSURE***

A condition in which the owner's system pressure is greater than the supplier's system pressure.

### ***E. CONTAINMENT***

A method of backflow prevention which requires a backflow prevention device at the water entry source.

### ***F. CROSS CONNECTION***

Any connection or structural arrangement between a public or consumer's potable water system and any non-potable source or system through which backflow can occur.

### ***G.PWS***

The Public Water System owned and operated by the Utility.

### ***H. UTILITY***

Owner and operator of the water supply and distribution system.

### ***I. FIXTURE /SOLATION***

A method of backflow prevention in which a backflow prevention device is located to correct a cross connection at an in-plant unit rather than at the water service entrance.

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#### ***J. OWNER***

Any person who has legal title to, or license to operate or habitat in, a property upon which a cross connection inspection is to be made or upon which a cross connection is present.

#### ***K. WATER SERVICE ENTRANCE***

That point in the owner's water system beyond the sanitary control of the supplier. This will usually be at the property line excluding the meter and will always be before any unprotected branch.

### **V. DEGREE OF HAZARD AND APPROVED DEVICES**

The Utility recognizes that varying degrees of hazard are caused by different cross connections. A list of manufactured approved devices is available in Wisconsin Administrative Code 382.41.

#### ***A. LOW DEGREE OF HAZARD***

If backflow were to occur, the resulting health significance would be limited to minor changes in the aesthetic quality such as taste, odor, or color. The foreign substance must be non-toxic and non-bacterial in nature with no significant health effects. The allowed devices are Air gap, non-pressure type vacuum breaker, pressure type vacuum breaker, double check valve assembly, and reduced pressure principle device.

#### ***B. MODERATE DEGREE OF HAZARD***

If backflow were to occur, the resulting effect on the water supply would be significant changes in the aesthetic qualities. The foreign substances must be non-toxic to humans either in short or long term exposure. The allowed devices are: Air gap, pressure type vacuum breaker, double check valve assembly, and reduced pressure principle devices.

#### ***C. HIGH DEGREE OF HAZARD***

If backflow were to occur the resulting effect on the water supply could cause illness or death if consumed by humans. The allowed devices are: Air gap and reduced pressure principle devices.

## **VI. ADMINISTRATION**

### **A. *PROGRAM***

1. Developed and maintained by the Utility.
2. Approved by State of Wisconsin.
3. Inspections performed by Utility and or designated designee.
4. Records shall be kept by the Utility for seven years.

### **B. *INSPECTION***

1. Inspections are made during normal working hours unless otherwise arranged with the owner.
2. Locations that are considered Low Hazard are to receive Public Education Materials every three years, however a survey will be conducted during the Utilities routine meter change out or testing program.
3. Property owners of Commercial properties will be required to complete survey questionnaires provided by the Utility every two years, or as necessary. The questionnaires shall be completed and returned to the Utility within 30 calendar days. The Utility will review the questionnaires and determine the presence of cross connections, the appropriate backflow prevention device required, and if further inspection is needed.
4. The owner shall allow the property to be inspected for possible cross connections and for the testing of backflow prevention devices. Utility personnel or designated designee may perform the inspections. As a result of the submitted inspection reports and questionnaires, the Utility will classify the hazard and will provide a list of appropriate devices.
5. When applying for a new service the owner shall state the nature of the establishment to be served and inform the Utility if there are any possible cross connections existing or proposed. Prior to activation of all new water services and new construction including residential services, compliance with this program and with the state of Wisconsin shall be mandatory.
6. Whenever existing systems are modified, the Utility shall be informed by the owner. The Utility shall be immediately informed of any malfunctioning backflow devices.

7. After inspection of plans or premises the Utility shall inform the owner by written notice of any cross connections or malfunctioning devices, suggest ways of correcting the problem and will establish a time limit for the correction to be made.
8. If the Utility determines at any time that an immediate threat to the public health exists, service shall be terminated immediately.
9. Frequency
  - a. Commercial - shall be inspected at least every two (2) years or less if considered "Low Hazard"
  - b. Residential - shall be inspected in conjunction with meter change out cycle, in addition public education material will be provided to all residential users on a three (3) year cycle.
10. The Utility reserves the right to inspect all cross connections. The owner shall comply with any required changes as a result of the inspections.

#### **C. TESTING**

1. The testing, inspection, and maintenance of approved devices shall be the responsibility of the owner.
2. Frequency of testing:

All testable devices are required to be properly maintained and tested annually by a state certified backflow device tester approved by the Utility and testing results be recorded with the Wisconsin Department of Commerce.
3. All newly installed devices must be tested upon installation and prior to official operation.
4. The owner must use the test form approved by a licensed inspector.
5. If a device fails a test, the Utility must be notified immediately.
6. Malfunctioning devices must be repaired immediately. If removal is necessary, service must be shut down. It is mandatory that a spare parts kit be on the premises.
7. The device is to be retested immediately after any type of maintenance including repairs, overhauls, re-piping or relocation of the device.
8. The Utility may notify the owner on an annual basis when testing of a device is required. The notification will include an explanation of responsibilities and

requirements regarding completion of the test. The owner must then return a completed test form by the due date provided on the notification.

#### ***D. INSTALLATION***

1. After being informed by written notice from the Utility, the owner at their own expense, shall install a backflow prevention device listed and approved by the Utility.
2. The manner of installation shall be according to manufacturer's specifications and approved by the Utility.
3. Pit installations are strongly discouraged and must have Utility approval prior to installation.
4. The Utility prohibits any interconnections by the owner or consumer within the owners plumbing system which would create a real or potential cross connection with the public water system thereby creating a public health hazard.
5. Installation of devices should allow for peak demand and fire flows.
6. If the device will be subject to hot water, a backflow prevention device that can withstand the maximum temperatures expected must be installed. Please note that some manufactured devices will accept greater temperatures than others.
7. In situations where the water supply cannot be interrupted to allow for testing or repair of the backflow prevention device, the owner must supply an additional device appropriate to the degree of hazard. A bypass is not allowed around any backflow prevention device unless a backflow prevention device is installed on the bypass piping.

#### ***E. EXEMPTIONS***

Any existing backflow prevention device in service at the time this program goes into effect shall be allowed to continue in service if proof of latest inspection has been conducted within the last 12 months and until:

1. The Utility considers the condition of any portion of the device to be such that replacement shall be a backflow prevention device of the appropriate classification.
2. The device protecting the cross-connection is inadequate for the degree of hazard.
3. The device fails when tested.

4. The device malfunctions and requires repairs.

#### **F. COMPLIANCE**

1. All cross connections that are deemed to be a high hazard shall be immediately eliminated or protected by a proper backflow device. The water utility reserves the right to terminate service if the cross connection cannot be eliminated or protected. Upon termination, the Sanitary District shall provide written notice to the property owner of the right to submit a written request to the Sanitary District Administrator for a hearing under Chapter 68, Wis. Stats., objecting to the termination of service which hearing shall be held by the Troy Center Sanitary District #1 Commission within ten (10) days of such request.
2. All cross connections that are deemed to be a low or medium hazard shall be eliminated or protected by a proper backflow device within 60 days of discovery.
  - a. First notice shall be the letter of inspection requirement.
  - b. Second notice will be a reminder informing the owner in writing of failure to comply with the first notice. If owner cannot comply with original deadline, the owner may submit a request for an extension to be considered by the utility.
  - c. Final notice shall be a written notice of service termination to take place within 5 days.
  - d. Prior to termination of service, the Sanitary District shall provide written notice to the property owner of the right to a hearing under Chapter 68, Wis. Stats., objecting to the termination of service. Upon receipt of such notice and prior to termination of service, the property owner shall submit a written request to the District Administrator for a hearing which shall be held by the District Commission within ten (10) days of such request.
3. Failure to comply with these regulations either by neglect to complete the application, procure and install the proper device, or repair a malfunctioning device may lead to termination of service until compliance has been restored.
4. Re-establishment of service before the installation of a backflow prevention device may be allowed by the Utility after an agreement with the Utility and owner has been made indicating the intention of the owner to comply and a compliance schedule is determined.
5. Should the utility deem the connection to be immediately dangerous to the public's health, the service will be immediately disconnected and will remain off until such time the cross connection is eliminated or adequately protected by a proper and approved backflow device. Upon termination, the District shall provide written notice to the property owner of the right to submit a written request to the District Administrator for a hearing under Chapter 68, Wis.

Stats., objecting to the termination of service which hearing shall be held by the Troy Center Sanitary District #1 Commission within ten (10) days of such request.

## STATE APPROVED DEVICES

ASME A112.1.2	Air Gap- The unobstructed vertical distance between the lowest point of any pipe, faucet or fixture and the FLOOD LEVEL RIM of the receptor into which it is discharging.
ASSE 1011*	Hose Bibb Vacuum Breaker (for indoor use)
ASSE 1002*	Anti-Siphon Ball Cock for Gravity Water Closet Flush Tanks
ASSE 1012	Vented Dual Check Valve-For supplies to untreated boilers with less than 15 psig steam of maximum water pressure of 30 psig.
ASSE 1019	Hose Bibb Integrated Vacuum Breaker.
ASSE 1011*	Anti-Frost Hose Bibb Vacuum Breaker-For use on outside hose bibs where it could be exposed to freezing conditions.
ASSE 1014	Vacuum Breaker for hand held showers
ASSE 1001	Atmospheric Vacuum Breaker- Critical Level of A VB must be installed at least 6" above all downstream piping and no valves downstream.
ASSE 1020	Pressure Vacuum Breaker- this assembly is not allowed for indoor installations.
ASSE 1056	Spill-Resistant Vacuum Breaker-Critical Level of SVB must be installed at least 6" above all downstream piping.

\*These backflow preventers can be found at hardware stores. All other requirements will require a plumber for installation.

You may also reference Wisconsin Administration Code 382.41 for additional information pertaining to Backflow Preventers.