Brian Tarbuck, General Manager
btarbuck@greateraugustautilitydistrict.org

Ken Knight, Board Chair
kknight@greateraugustautilitydistrict.org

Dave Bustin, Hallowell voting member, Clerk
dbustin@greateraugustautilitydistrict.org

Bob Corey, Treasurer
bcorey@greateraugustautilitydistrict.org

Kirsten Hebert
khebert@greateraugustautilitydistrict.org

Greater Augusta Utility District
Water | Sewer | Storm Water

www.greateraugustautilitydistrict.org
12 Williams Street
Augusta, ME 04330-5225
(207) 622-3701

Cecil Munson
cmunson@greateraugustautilitydistrict.org

Pat Paradis
pparadis@greateraugustautilitydistrict.org

Bradley Sawyer
bsawyer@greateraugustautilitydistrict.org

Keith Luke, Augusta ex-officio member
kluke@greateraugustautilitydistrict.org

Charlotte Warren, Hallowell ex-officio member
cwarren@greateraugustautilitydistrict.org

CROSS CONNECTION CONTROL PROGRAM

EFFECTIVE DATE
February 1, 2018

As approved by
Division of Environmental Health
Maine Center for Disease Control & Prevention
A Division of the Maine Department of Health and Human Services

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CROSS-CONNECTION CONTROL PROGRAM

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 system by preventing the introduction, by backflow, of any foreign liquids, gases or other substances into the supply system.

II. AUTHORITY

This program derives its enforceability from Title 22 M.R.S.A. Chapter 601, Subchapter I, §2605 and Subchapter II, § 2611-2613, 2615 and Subchapter III § 2628.
Maine Department of Health and Human Services Cross-Connection Rules 10-144 Chapter 231 appropriation # 013-10A-2420-032. In addition authority arises from the Rules and Regulations as published by the Greater Augusta Utility District, rule number 11, and as approved by the Public Utilities Commission of the State of Maine and from provisions of the Occupational Safety and Health Act, and the Maine State 2000 Uniform Plumbing Code Chapter 6.

III. 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 PREVENTER

A device to prevent backflow.

1. Air Gap

An approved air gap is defined as the vertical distance through free atmosphere between the discharge outlets of a potable water system to the flood level rim of a non-potable system. These vertical physical separations must be at least 2 times the pipe diameter of the water supply outlet, but never less than 1 inch."

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 Preventer with Intermediate Atmospheric Vent

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

4. Double Check Valve

A device having two, 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

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 which pressure approaches atmospheric. It contains valves and fittings which allow the device to be tested.

7. Reduced Pressure Zone

An assembly of two check valves and a reduced pressure zone between, which spills water to the atmosphere in 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

The State Of Maine Drinking Water Program requires a backflow preventer, approved for the degree of hazard at the water service entrance. This assures that water passing through the device is contained in the building and not allowed to flow back into the potable water supply.

F. CROSS-CONNECTION

Any connection or potential connection between a public potable water system and any non-potable source of liquid, gas, or solids through which backflow can occur.

G. DEPARTMENT

Division of Environmental Health
Maine Center for Disease Control & Prevention
A Division of the Maine Department of Health and Human Services

H. DISTRICT

Greater Augusta Utility District

I. FIXTURE ISOLATION
The installation of a backflow preventer located to correct a cross-connection at an internal fixture, to protect the potable water contained in the building.

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. PERMIT

A document issued by the Department with the approval of the District which documents the use of a backflow preventer.

L. WATER SERVICE ENTRANCE

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

IV. DEGREE OF HAZARD AND APPROVED DEVICES

The District recognizes that varying degrees of hazard are caused by different cross-connections. The devices which are permitted for use in each class of hazard and a description of the classes are as follows. A list of manufactured approved devices is available at the District. American Water Works Association, Manual M-14 Chapter 4, guide to the assessment of hazard will be utilized for classifications purposes.

A. CLASS I LOW DEGREE OF HAZARD

If backflow were to occur, the resulting health significance would be limited to minor changes in the esthetic 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 zone device.

B. CLASS II MODERATE DEGREE OF HAZARD

If backflow were to occur, the resulting effect on the water supply would be significant changes in the esthetic 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 zone devices.

C. CLASS III 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 zone devices.

V. ADMINISTRATION

A. PROGRAM

1. Developed and maintained by the District.

2. Approved by
   Division of Environmental Health
   Maine Center for Disease Control & Prevention
   A Division of the Maine Department of Health and Human Services

3. Original Test Reports shall be kept on file by the District for five years.

B. *INSPECTION*

1. Made during normal working hours unless otherwise arranged with the owner.

2. The owner shall allow his property to be inspected for possible cross-connections and for the testing of backflow prevention devices.

3. When applying for a new service the owner shall state the nature of the establishment to be served and inform the District if there are any possible cross-connections existing or proposed. Prior to activation of all new water services, compliance with this program and with the Maine State 2000 Uniform Plumbing Code shall be mandatory.

4. Whenever existing systems are modified, the District shall be informed by the owner. The District shall be informed of any malfunctioning backflow devices.

5. After inspection of plans or premises the District shall inform the owner by written notice of any cross-connections or malfunctioning devices, suggest ways of correcting the problem and set a time limit based on the degree of hazard for the correction to be made. Level 1 = 30 days, Level 2 = 15 days, Level 3 Immediately

6. If the District determines at any time that an immediate threat to the public health exists, service shall be terminated immediately.

7. Frequency

The frequency of inspecting for backflow devices coincides with the Districts, meter clean and test program as approved by the Maine Public Utilities Commission.

Cold water displacement meters 5/8" thru 2"	= 12 Years or upon register rollover
Cold water displacement meters 3"	= 3 years or upon register rollover
Cold water displacement meters 4"	= 2 Years or upon register rollover
Cold water displacement meters 6" and greater	= 1 Year or upon register rollover

Cold water Turbine meters 1 ½ & 2"	= 4 Years or upon register rollover
Cold water Turbine meters 3"	= 3 Years or upon register rollover
Cold water Turbine meters 4"	= 2 Years or upon register rollover

8. The Department reserves the right to inspect all cross-connections. The owner and/or District shall comply with any required changes as a result of the inspections.

C. PERMITS

1. No cross-connections shall be allowed unless issued a permit by the Department specifically for that cross-connection and on recommendation by the District.

2. The owner shall apply for a permit through the District on forms supplied by the Department.

3. Permits will only be issued for a protected cross-connection that is deemed necessary and cannot be eliminated.

4. The permit shall state:

   a. Degree of hazard
   b. Frequency of testing
   c. Type, model make and serial number of the backflow device.

5. Permits are non-transferable.

6. Any change in the degree of hazard or replacement of the device will require a new permit, but will keep the same State Identification Number.

7. Permits will be renewed every five years. Requests for renewal permits shall be reviewed by the District and if no changes have occurred, the permit shall be automatically renewed. If changes have occurred the renewal application shall be reviewed and a survey completed for a possible change to the degree of hazard. The State Identification Number shall remain the same.

8. The owner shall follow the provisions of the District's program and the Department's rules regarding cross-connections if a permit is issued.

9. Any private well or other source of supply shall not be cross-connected to the District's distribution system unless protected by an RPZ and approved by the Department and the District.

D. TESTING

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

2. Frequency of testing is stated on the permit, based on the degree of hazard. The State Uniform Plumbing Code section 608.3.3 requires annual testing as a minimum.

3. If a device fails a test the District must be notified immediately.

4. 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.

5. The device is to be retested after maintenance or repairs.

E. INSTALLATIONS

1. The owner, after being informed by written notice from the District shall, at his expense, install a backflow device listed and approved by the Department and the District, on his service entrance directly downstream of the water meter and before any branch lines.

2. The manner of installation shall be according to manufacturer's specifications and approved by the District.

3. Pit installations are strongly discouraged and must have Departmental approval before a permit is issued.
4. The Department requires that all services be protected by containment at the water meter. The owner shall install the backflow device as close as possible to the outlet of the meter and shall be responsible for the water quality beyond the outlet end of the device.

5. Whenever a backflow device is remote to the service entrance, all branches prior to the backflow device must be protected by an additional backflow prevention devices.

6. Installation of devices should allow for peak demand and fire flows.

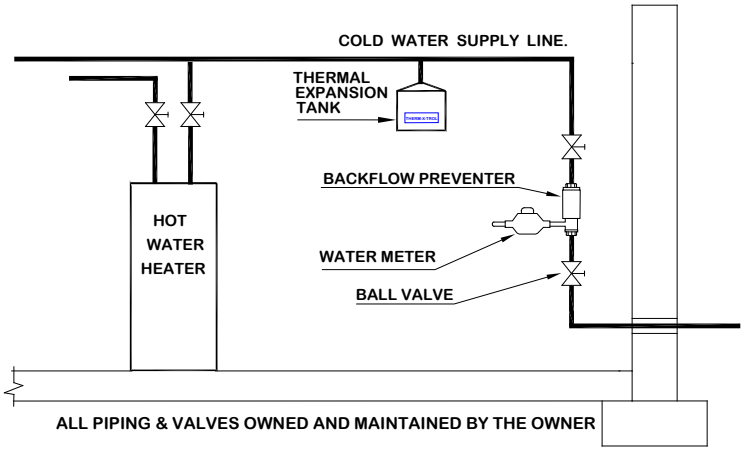
7. If the device will be subject to hot water, a backflow prevention device that can withstand the maximum temperatures expected must be installed. Please note that some manufactured devices will accept greater temperatures than others.

8. In situations where the water supply cannot be interrupted to allow for testing or repair of the backflow preventer, the owner must supply an additional device in parallel, appropriate to the degree of hazard. A bypass is not allowed around any backflow preventer unless a backflow preventer is installed on the bypass piping.

F Thermal Expansion

State Uniform Plumbing Code section 608.3 require that Thermal Expansion Control be addressed in plumbing systems to avoid damage to fixtures and appliances. The installation of a backflow device creates a "CLOSED" system that prevents heated/expanded water from being forced back into the public distribution system. Thermal expansion, if not controlled can damage or reduce the life of plumbing fixtures and appliances. Thermal expansion may be

evident by dripping or spurting from water faucets or intermittent discharge from the pressure relief valve on the hot water heater. Thermal Expansion can be easily controlled by use of a properly sized Thermal Expansion Tank on the cold water supply line, or a Watts Governor 80 – M1 Toilet tank ball cock fill valve or equal. Customers are encouraged to have a licensed plumber inspect their plumbing system to determine if it is a “CLOSED” system.



G- EXEMPTIONS

1. Any existing backflow preventer in service at the time this program goes into effect shall be allowed to continue in service unless:
   a. The District or Department considers the condition of any portion of the device to be such that replacement shall be a backflow preventer of the appropriate classification and a permit shall be issued.

   b. The device protecting the cross-connection is inadequate for the degree of hazard.

H- COMPLIANCE

1. 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.

2. First notice shall be the letter of inspection.

3. Second notice shall inform the owner in writing of any failure to comply with the first notice and be given an additional 15 days to comply.

4. Final notice shall be a written notice of service termination to take place within 10 days.

5. Re-establishment of service before the installation of a backflow preventer may be allowed by the District after an agreement with the District, Department and owner has been made indicating the intention of the owner to comply and a schedule is set up based on the degree of hazard.