Chapter 13.10

BACKFLOW PREVENTION AND CROSS-CONTROL PROGRAM REGULATIONS

Sections:

13.10.010 Purpose and Authority.

A. The purpose of the City's backflow prevention and cross-control program ("Program") and this Chapter is:

1. To protect the public potable water supply served by the City of Delta from the possibility of contamination or pollution by isolating within its customers internal distribution system such contaminants or pollutants which could backflow or back-siphon into the public water system;
2. To promote the elimination or control of existing cross-connection, actual or potential, between its customers' on-site potable water systems and non-potable systems;
3. To provide for the maintenance of a program of cross-connection control that will effectively prevent the contamination or pollution of potable water systems by cross-connection;
4. To provide that backflow prevention devices within structures, buildings, and appurtenant plumbing shall be regulated by the current edition of the adopted International Plumbing Code and the Colorado Cross-Connection Handbook.

B. The City, as the water purveyor, has the primary responsibility for preventing water from unapproved sources, or any other substances, from entering the public potable water system. Authority to implement and maintain this Program on cross-connection is contained in the following legislative actions:

1. the Federal Safe Drinking Water Act, 42 U.S.C §§ 300f, *et seq*.
2. Articles 8 and 10 of Title 25, C.R.S.;
3. the Colorado Primary Drinking Water Regulations,

5 C.C.R. §§ 1002-11; and

4. the most recent edition of the Cross-Connection Control Manual, promulgated by the Colorado Department of Public Health and Environment ("CDPHE"). (Ord. 8, §2, 2021; Ord. 4, 2022)

13.10.020 Applicability. This Chapter applies to all commercial, industrial and multi-family residential connections within the public water system and to any persons outside the City who are, by contract or agreement with the City, users of the public water system. This Chapter does not apply to single-family-residential service connections unless the City becomes aware of a cross-connection at the single family connection; fire sprinkler systems where the installation of a backflow device or method will compromise the integrity of the fire sprinkler system; or to lawful nonconforming uses in accordane with Chapter 17.04. (Ord. 4, 2022)

13.10.030 Definitions.

A. As used in this Chapter, the following terms shall have the meanings attributed to them:

1. "Active Date" means the first day that a backflow prevention assembly or backflow prevention method is used to control a cross-connection in each calendar year.

2. "Air Gap" is a physical separation between the free flowing discharge end of a potable water supply pipeline and an open or non-pressure receiving vessel installed in accordance with the American Society of Mechanical Engineers ("ASME") standard A112.1.2.

3. "Backflow" means the undesirable reversal flow of water or mixtures of water and other liquids, gases or other substances into the public water systems distribution system from any source or sources other than its intended source.

4. "Backflow Contamination Event" means backflow into a public water system from an uncontrolled cross-connection such that the water quality no longer meets the Colorado Primary Drinking Water Regulations or presents an immediate health and/or safety risk to the public.

5. "Backflow Prevention Assembly" means any mechanical assembly installed at a water serviced line or at a plumbing fixture to prevent a backflow contamination event, provided that the mechanical assembly is appropriate for the identified contaminant at the cross-connection and is an in-line field-testable assembly.

6. "Backflow Prevention Method" means any method and/or non-testable device installed at a water service line or at a plumbing fixture to prevent a backflow contamination event,

provided that the method or non-testable device is appropriate for the identified contaminant at the cross-connection.

7. "Certified Cross-connection Control Technician" means a person who possesses a valid Backflow Prevention Assembly Tester certification from one of the following approved organizations: American Society of Sanitary Engineering ("ASSE") or the American Backflow Prevention Association ("ABPA"). If a certification has expired, the certification is invalid.

8. "Containment" means the installation of a backflow prevention assembly or a backflow prevention method at any connection to the public water system that supplies an auxiliary water system, location, facility, or area such that backflow from a cross-connection into public water system is prevented.

9. "Containment by Isolation" means the installation of backflow prevention assemblies or backflow prevention methods at all cross-connections identified within a customer's water system such that a backflow from a cross-connection into the public water system is prevented.

10. "Controlled" means having a properly installed, maintained, and tested or inspected backflow prevention assembly or backflow prevention method that prevents backflow through a cross connection.

11. "Cross-connection" means any connection that could allow any water, fluid, or gas such that the water quality could present an unacceptable health and/or safety risk to the public, to flow from any pipe, plumbing fixture, or a customer's water system into a public water systems distribution system or any other part of the public water system through backflow.

12. "Multi-family" means a single residential connection to the public water system's distribution system from which two or more separate dwelling units are supplied water.

13. "Single-family" means:

a. A single dwelling that is supplied by a separate service line; or

b. A single dwelling comprised of multiple living units where each living unit is supplied by a separate service line.

14. "Uncontrolled" means not having a properly installed and maintained and tested or inspected backflow prevention assembly or backflow prevention method, or the backflow prevention assembly or backflow prevention method does not prevent backflow through a cross-connection.

15. "Water Supply System" means a water distribution system, piping, connection fittings, valves and appurtenances within a building, structure, or premises. Water supply systems are also referred to commonly as premise plumbing systems. (Ord. 4, 2022)

13.10.040 Administration.

A. The City will operate a "Cross-Connection Control Program," which includes the required recordkeeping related to initial inspection, hazard level, initial device testing, yearly device testing and device replacement, and other requirements.

B. The Officer in Responsible Charge ("ORC") or their designee shall administer the program to protect the public potable water distribution system from contamination or pollution due to the backflow or back-siphonage of contaminants or pollutants through the water service connection. If the ORC determines that an approved backflow device is required at the City's water service connection to any customer's premises, the ORC shall give notice in writing to said customer to install an approved backflow prevention device at each service connection to their premises. The customer shall install the approved device or devices at their own expense within one hundred twenty (120) days of the receipt of the notice or the customer's water service will be discontinued until the proper device or devices are installed. If a cross connection device or method cannot be installed within the one hundred twenty (120) day time frame, an alternative compliance schedule may be granted from the Colorado Department of Public Health and Environment.

C. Property owners shall allow their property to be inspected for possible cross-connections and shall follow the provisions of the City's program if a cross-connection is permitted.

D. Representatives of the City shall carry proper identification of his/her office. By previously arranged appointment and upon presentation of proper identification, the City Representative shall have the right of entry onto a customer's property to inspect any and all buildings and the premises for cross-connections and possible water contamination hazards. This right of entry shall be a condition of water service in order to protect health, safety and welfare of the people throughout the City's distribution system. Where building security is required, the backflow device(s) shall be located in an area not subject to security. Questions regarding proper credential should be directed to the ORC and/or the City Attorney.

13.10.050. General Requirements.

A. In instances where a reduced pressure principle backflow preventer cannot be installed, a property owner must install approved backflow prevention devices or methods at all

cross-connections within the owner's plumbing system. Provisions shall be made to provide adequate drainage from the discharge of water from reduced pressure principle backflow prevention assemblies. Such discharge shall be conveyed in a manner which does not impact water of the state.

B. Where a backflow prevention assembly or method is installed on a water supply system using storage water heating equipment such that thermal expansion causes an increase in pressure, a device for controlling pressure shall be installed.

C. For new buildings, all building plans must be submitted to the City building department and approved prior to the issuance of water service. Building plans must show:

1. Water service type, size, and location.
2. Meter size and location.
3. Backflow prevention assembly size, type and location.
4. Fire sprinkler system(s) service line, size and type of backflow assembly.
    a. All fire sprinkling lines shall have minimum protection of an approved double check valve assembly for containment of the system.
    b. All glycol (ethylene or propylene), or antifreeze systems shall have an approved reduced pressure principle backflow preventer for containment.
    c. Dry fire systems shall have an approved double check valve assembly installed upstream of the air pressure valve.

D. Guidelines for backflow prevention assemblies required on identified hazardous cross-connections:

1. Commercial, industrial and institutional buildings shall have an approved reduced pressure zone assembly to isolate all building fixtures and taps from the city distribution system.
2. Backflow prevention assemblies are to be installed in an accessible location to facilitate maintenance, testing and repair.
3. All backflow prevention assemblies shall be installed on the customer side of the water meter.
4. In no case will it be permissible to have a connection or tees between the meter and service line.
5. The valves associated with the backflow prevention device shall not be used as the inlet or outlet valve of the water meter. Test cocks shall only be used for testing purposes only.

6. In order to ensure that backflow prevention assemblies continue to operate satisfactorily, they shall be tested at the time of installation and on an annual schedule thereafter. Such test shall be conducted in accordance with American Society of Sanitary Engineering (A.S.S.E.) and/or University of Southern California, Foundation of Cross-Connection Control and Hydraulic Research (U.S.C. F.C.C.C. and H.R.) performance standards and field test procedures as directed by the CDPHE.

7. All cost for design, installation, maintenance, repair and testing shall be borne by the customer.

8. All fire sprinkler systems shall conform to the applicable sections in the current edition of the International Plumbing Code (UPC). (Ord. 8, §2, 2021)

E. Standards for Backflow Prevention Assemblies:

1. Any backflow prevention assembly required herein shall be a model and size approved by the ORC. The term approved backflow prevention assembly shall mean an assembly that has been manufactured in full conformance with the standards established by the latest version of the CDPHE Cross-connection Control Manual. Final approval shall be evidenced by a "Certificate of Approval" issued by an approved testing laboratory certifying full compliance with the CDPHE standards and A.S.S. E. and/or U.S.C> F.C.C.C. and H.R. specifications.

2. Only approved backflow prevention assemblies shall be used.

F. Installations.

1. Backflow prevention assemblies shall be installed in accordance with the UPC specifications.

2. Backflow prevention assembly installations shall be approved for use by the public works ORC.

3. All backflow assemblies shall be installed in the horizontal position. Vertical installations shall be acceptable when approved by A.S.S.E. and/or U.S.C. F.C.C.C. and H.R. specifications. A variance may be granted the City of Delta ORC upon review.

4. The single check valve is not considered to be a backflow prevention assembly.

5. Reduced pressure backflow prevention devices shall be installed above ground. The unit shall be placed at least twelve (12) inches above finish grade to allow clearance for repair work. A concrete slab at finish grade is recommended. Proper drainage shall be provided for the relief valve and may be piped away from the location, provided that it is readily visible from above grade and provided that the relief

valve is separated from the drain line by a minimum of double the diameter of the supply line. A modified vault installation may be used if constructed with ample side clearances. Freezing is a major concern in this area. Precautions shall be taken to protect aboveground installations.

G. Any backflow prevention devices or methods that are non-testable shall be inspected at least annually by a certified cross-connection control technician. The inspection shall be made at the expense of the customer. Inspection reports shall comply with Section 13.10.060.

H. Testing and maintenance for identified, hazardous cross-connections:

1. At least once per year, it is the duty of the customer/user at any premises where backflow prevention assemblies are installed to have a certified test completed. In those specific instances where the ORC deems the hazard to be great enough, certified inspections and testing at more frequent intervals may be required. All tests shall be at the expense of the water user and shall be performed by a certified technician approved by the CDPHE and public works department. An inspection of the assembly may be performed at any time complying with the right of entry portion of this code.

2. As necessary, the assembly shall be repaired or replaced at the expense of the customer/user whenever the assembly is found to be defective. Records of all such tests, repairs, or replacements shall be kept for three (3) years by the customer/user and be made available to the public works department for review upon request.

3. Existing assemblies shall be tagged by the technician performing the test at the completion of the test, showing the names of the technician and date of test.

4. All testing equipment used in the testing of backflow prevention assemblies shall be checked for accuracy yearly and proof of compliance shall be submitted to the ORC upon request.

5. The public works department ORC retains the right to test or otherwise check the installation and operation of any isolation or containment assembly at any time to assure proper operation.

13.10.060 Records and Reports.

A. Information on test reports shall include, but may not be limited to:

1. Assembly or method type
2. Assembly or method location
3. Assembly make, model and serial number

4. Assembly size
5. Test date
6. Test results including all results that would justify a pass or fail outcome
7. Certified cross-connection control technician certification agency
8. Technician's certification number
9. Technician's certification expiration date
10. Test kit manufacturer, model and serial number
11. Test kit calibration date

B. Copies of records of test reports, repairs and retests shall be submitted to City of Delta, Attention Utilities Department, 360 Main Street, Delta, CO 81416, or by e-mail at utility@cityofdelta.net, by the testing company or testing technician.

13.10.070 Compliance.

A. Failure of the customer to cooperate in the installation, maintenance, testing or inspection of backflow prevention devices required by this chapter shall be grounds for the discontinuance of water service to the premises and/or the requirement for an air-gap separation from the public potable water system.

B. Service of water to any premises may be discontinued by the City if cross-connections exist on the premises. When any defect is found in an installed backflow prevention device, or if a backflow prevention device has been removed or bypassed, the service may be discontinued. Service shall not be restored until such condition(s) or defect(s) are corrected.

C. Discontinuance of service may be summary, immediate, and without written notice whenever, in the judgment of the City, such action is necessary to protect the purity of the public potable water supply or in the safety of the water system. (Ord. 6, §2, 2018)