

CHEROKEE METROPOLITAN DISTRICT

6250 Palmer Park Blvd. Colorado Springs, CO 80915



BACKFLOW PREVENTION and CROSS CONNECTION CONTROL REGULATION

Cherokee Metropolitan District
Cross Connection Program Regulation

(Updated: 7/20/2021)

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1. **Purpose**

The purpose of this Regulation is to protect the Cherokee Metropolitan District's (CMD) public water system from contaminants or pollutants that could enter the distribution system by backflow from a customer's water supply system through the service connection.

References to 'public water system' or 'District' and like verbiage throughout this Regulation, will be synonymous with the 'Cherokee Metropolitan District's (CMD) public water system'.

2. **Authority**

The authority to implement this program is contained in the following statute, legislation and regulations and acts:

- (A) Article 1-114 and Article 1-114.1 of Title 25 of the Colorado Revised Statutes (CRS)
- (B) Section 39 of 5 CCR 1002-11, Colorado Primary Drinking Water Regulations
- (C) Colorado Plumbing Code

CMD has the authority to survey all service connections within the distribution system to determine if the connection is a cross-connection.

CMD has authority to require customers to install, maintain, test, and inspect backflow prevention assemblies and/or backflow prevention methods.

CMD has authority to control all service connections within the distribution system if the connection is a cross-connection.

CMD may control any service connections within the distribution system in lieu of a survey if the service connection is controlled with an air gap or reduced pressure zone backflow prevention assembly.

CMD may collect fees for the administration of this program.

CMD shall maintain records of cross-connection surveys and the installation, testing and repair of all backflow prevention assemblies installed for containment and containment by isolation purposes.

Except as otherwise provided herein, the Cherokee Metropolitan District shall administer, implement, and enforce the provisions of this Regulation.

3. **Applicability**

This Regulation applies to all commercial, industrial, and multi-family residential service connections within the Cherokee Metropolitan District's system and to any persons outside the District who are, by contract or agreement with CMD, users of the public water system. This Regulation does not apply to single-family-residential service connections unless the public water system becomes aware of a cross-connection or a degree of hazard at the single-family connection.

4. **Definitions**

- (A) "ACTIVE DATE" means for most backflow prevention assemblies or methods that are in service year-round, the active date will be January 1.
- (a) For service connections that are seasonal in nature, the active date will be the first day that the connection is pressurized, restored after the winter season or water service is provided. (i.e., irrigation systems)
- (B) "AIR GAP" means 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 standard AMSE A112.1.2.
- (C) "BACKFLOW" means the undesirable reversal of 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.
- (D) "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.
- (E) "BACKFLOW PREVENTION ASSEMBLY" means any mechanical assembly installed at a water service 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.
- (F) "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.
- (G) "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.
- (H) "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 the public water system is prevented.
- (I) "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 backflow from a cross connection into the public water system is prevented.
- (J) "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.
- (K) "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 system’s distribution system or any other part of the public water system through backflow.

- (L) “DAYS” means calendar days.
- (M) “DEGREE OF HAZARD” means the classification of a cross connection based on the potential that a backflow event would pose an unacceptable health and/or safety risk to the public.
- (N) “MULTI-FAMILY CONNECTION” means a single residential connection to the public water system’s distribution system from which three or more separate dwelling units are supplied water.
- (O) “MULTI-FAMILY RESIDENTIAL PREMISES” means a common wall premises for the purpose of multi-family residential dwelling. This may be described as a condominium, townhouse, duplex, stacked housing or other name form for multi-family housing, permanent or transient. This also includes service buildings appurtenant to a residence including garage, cottages, and other minor buildings where a Cherokee Metropolitan Districts’ water meter is being utilized on a single platted lot and each dwelling unit in a Mobile Home Park.
- (P) “NON-SINGLE-FAMILY-RESIDENTIAL CONNECTION” means any connection to the Water Distribution System, which in the sole discretion of the Cherokee Metropolitan District, does not meet the definition of a Single-Family-Residential Connection. For the purposes of administering CDPHE Rule 11.39, Multi-Family Connections are always considered Non-Single-Family-Residential Connections.
- (Q) “SINGLE-FAMILY” means:
 - (a) A single living unit that is supplied by its own separate service line or.
 - (b) Multiple living units where each individual living unit is supplied by a separate service line.
 - (c) Two separate single living units supplied by a common service line.
- (R) “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.
- (S) “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.

5. **Requirements**

Cherokee Metropolitan District requires protection of the Water Distribution System through installation of Approve Backflow Prevention Assemblies or Methods. Where Backflow prevention is required, water service will not be provided to any premises until an Approved Backflow Prevention Assembly or Method has been installed and tested. See the table below to determine the applicable criteria based upon the proposed connection type:

Connection Type	Backflow Prevention Required?	Type of Backflow Prevention Required
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Single-Family-Residential	No, unless a Degree of Hazard exists	Degree of Hazard Based
Non-Single-Family-Residential Fire	Yes	Degree of Hazard Based
New Non-Single-Family-Residential Domestic and Irrigation	Yes	RP
Existing Non-Single-Family-Residential Domestic	Yes, if a Degree of Hazard exists	RP or Approved Air Gap
Existing Non-Single-Family-Residential Irrigation	Yes	RP or Approved Air Gap

- (A) No water service connection shall be installed or maintained by the Cherokee Metropolitan District (CMD), unless the water supply is protected as required by Federal, State, County, local and CMD regulations. Service of water to any premises shall be discontinued by the District if a backflow prevention device required by the regulations is not installed tested and maintained, or if it is found that a backflow prevention device has been removed, bypassed, or if an unprotected cross connection exists on the premises. Service will not be restored until such conditions or defects are corrected.
- (B) The customer’s system should be opened for inspection at all reasonable times to authorized representatives of the District to determine whether cross-connections or other structural or sanitary hazards, including violations of these regulations, exist. When such a condition becomes known, the “Manager” shall deny or immediately discontinue service to the premises by providing for a physical break in the service line until the customer has corrected the condition in conformance with state and District statutes relating to plumbing and water supplies and the regulations adopted pursuant thereto.
- (C) After 60 days and no response from a customer for a survey to be scheduled the service maybe suspended until such time a survey can be performed.
- (D) Commercial, industrial, and multi-family service connections shall be subject to a survey for cross connections. If a cross connection has been identified an appropriate backflow prevention assembly and or method shall be installed at the customer’s water service connection within 120 days of its discovery. The assembly shall be installed downstream of the water meter or as close to that location as deemed practical by the public water system. If the assembly or method cannot be installed within 120 days the public water system must take action to control or remove the cross connection, suspended service to the cross connection or receive an alternative compliance schedule from the Colorado Department of Public Health and Environment.
- (E) In no case shall it be permissible to have connections or tees between the meter and the containment backflow prevention assembly.
 - (a) In instances where a reduced pressure principal backflow preventer cannot be installed, the owner must install approved backflow prevention devices or methods at all cross-connections within the owner’s plumbing system.

- (F) Backflow prevention assemblies and methods shall be installed in a location which provides access for maintenance, testing and repair.
- (G) Reduced pressure principal backflow preventers shall not be installed in manner subject to flooding.
- (H) Provisions shall be made to provide adequate drainage from the discharge of water from reduced pressure principal backflow prevention assemblies. Such discharge shall be conveyed in a manner which does not impact waters of the state.
- (I) All assemblies and methods shall be protected to prevent freezing. Those assemblies and methods used for seasonal services may be removed in lieu of being protected from freezing. The assemblies and methods must be reinstalled and then tested by a certified cross-connection control technician upon reinstallation.
- (J) 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.
- (K) All backflow prevention assemblies shall be tested at the time of installation and on an annual schedule thereafter. Such tests must be conducted by a Certified Cross-Connection Control Technician.
- (L) The public water system shall require inspection, testing, maintenance and as needed repairs and replacement of all backflow prevention assemblies and methods, and of all required installations within the owner's plumbing system in the cases where containment assemblies and or methods cannot be installed.
- (M) All costs for design, installation, maintenance, testing, and inspection and as needed repair and replacement are to be borne by the customer.
- (N) The following approved devices can be used for backflow prevention:
 - Air gap
 - Double-check valve assembly
 - Reduced pressure principal backflow assembly
 - Vacuum breaker

The Colorado Department of Public Health and Environment accepts the use of backflow preventers that have received approval by either University of Southern California Foundation of Cross-Connection Control and Hydraulic Research or the American Society of Sanitary Engineers (ASSE).

- (O) Existing connections for domestic and/or irrigation use. Any user at a premise where a Non-Single-Family-Residential Connection exists and where any of the high hazards listed below exist on the premises, shall install an RP or Approved Air Gap, immediately following the meter, and generally before the first branch line leading off the Service Line:
 - Agricultural commerce
 - Auto repair shop
 - Auxiliary water source
 - Blood banks
 - Boiler
 - Bulk fill water stations
 - Car wash
 - Chemical processes (including temp. maintenance)
 - Chiller
 - Cleaning company (carpet or use of soaps and chemicals).
 - Cooling tower.

- Construction company (utilizing water for construction purposes).
- Dental facility.
- Display fountain.
- Double wall heat exchanger.
- Dry cleaning/laundries.
- Facilities with restricted access.
- Fire suppression.
- Graywater system.
- Green house.
- Hair salon.
- Hospitals.
- Hot tub.
- Hydronic cooling.
- Hydronic heating.
- Ice machines.
- Industrial.
- Irrigation.
- Laboratories.
- Livestock facility.
- Manufacturing facility.
- Medical facility and clinics.
- Mitigation company (filling tanks and trucks for cleaning purposes).
- Mortuaries.
- Onsite storage tanks.
- Pet store.
- Pool.
- Reclaimed water system.
- Restaurants.
- Solar panels.
- Veterinary.
- Other high hazards, as determined by Cherokee Metropolitan District.

(P) No grandfather clauses exist except for fire sprinkler systems where the installation of a backflow prevention assembly or method will compromise the integrity of the fire sprinkler system.

(Q) For new buildings, all building plans must be submitted to the Cherokee Metropolitan District and approved prior to the issuance of water service. Building plans must show:

- (a) Water service type, size, and location
- (b) Meter size and location
- (c) Fire sprinkler system(s) service line, size, and type of backflow prevention assembly.
 - (i) All fire sprinkling lines shall have a minimum protection of an approved double check valve assembly for containment of the system.
 - (ii) All glycol (ethylene or propylene), or antifreeze systems shall have an approved reduced pressure principal backflow preventer for containment.
 - (iii) Dry fire systems shall have an approved double check valve assembly installed upstream of the air pressure valve.
 - (iv) In cases where the installation of a backflow prevention assembly or method will compromise the integrity of the fire sprinkler system the public water system can chose to not require the backflow protection.

The public water system will measure chlorine residual at location representative of the service connection once a month and perform periodic bacteriological testing at the site. If the public water system suspects water quality issues the public water system will evaluate the practicability of requiring that the fire sprinkler system be flushed periodically.

- (R) During construction, the potable water system must be protected from backflow and potential contamination. At any premises where a permanent backflow prevention device would be required, but cannot be installed immediately, a temporary backflow prevention device must be used until the permanent device is installed.

6. Inspection, Testing and Repair

- (A) Backflow prevention assemblies shall be tested, and methods inspected by a Certified Cross-Connection Control Technician upon installation and tested/inspected at least annually, thereafter. Records of all tests must be provided to Cherokee Metropolitan District within 5 days of completion. The tests shall be made at the expense of the customer.
 - (a) Any backflow prevention assemblies or methods that are non-testable, shall be inspected at least once annually by a certified cross-connection control technician. The inspections shall be made at the expense of the customer.
- (B) As necessary, backflow prevention assemblies or methods shall be repaired and retested or replaced and tested within 20 days of discovery at the expense of the customer whenever the assemblies or methods are found to be defective.
- (C) Any repairs or replacements that extend beyond 20 days maybe cause for monetary assessments and/or suspension of water service.
- (D) Should an existing non-lead-free assembly need to be removed for repair or other reasons, it must be replaced with a Lead-Free assembly.
- (E) Testing gauges shall be tested and calibrated for accuracy at least once annually and a copy of the calibration test submitted to Cherokee Metropolitan District.

7. Reporting and Recordkeeping

- (A) Copies of records of test reports, repairs and retests, or replacements shall be kept by the customer for a minimum of three (3) years.
- (B) Copies of records of test reports, repairs and retests shall be submitted to the Cherokee Metropolitan District by mail, facsimile, e-mail, or hand delivered to the main office, 6250 Palmer Park Blvd. Colorado Springs, CO 80915, by the testing company or testing technician.
- (C) Information on test reports shall include, but may not be limited to,
 - (a) Assembly or method type
 - (b) Assembly or method location
 - (c) Assembly make, model and serial number
 - (d) Assembly size
 - (e) Test date; and

- (f) Test results including all results that would justify a pass or fail outcome
- (g) Certified cross-connection control technician certification agency
- (h) Technician's certification number
- (i) Technician's certification expiration date
- (j) Test kit type and calibration date

8. **Right of entry**

- (A) A properly credentialed representative of the Cherokee Metropolitan District has the legal right of entry to survey all buildings and premises for the presence of cross-connections for possible contamination risk to and for determining compliance with this section. This right of entry shall be a condition of water service to protect the health, safety, and welfare of customers throughout the public water system's distribution system.

9. **Compliance**

- (A) Customers shall cooperate with the installation, inspection, testing, maintenance, and as needed repair and replacement of backflow prevention assemblies and with the survey process. For any identified uncontrolled cross-connections, the public water system shall complete one of the following actions within 120 days of its discovery:
 - (a) Control the cross connection
 - (b) Remove the cross connection
 - (c) Suspend service to the cross connection
- (B) The public water system shall give notice in writing to any owner whose plumbing system has been found to present a risk to the public waters system's distribution system through an uncontrolled cross connection. The notice and order shall state that the owner must install a backflow prevention assembly or method at each service connection to the owner's premises to contain the water service. The notice and order will give a date by which the owner must comply.
 - (a) In instances where a backflow prevention assembly or method cannot be installed, the owner must install approved backflow prevention assemblies or methods at all cross-connections within the owner's water supply system. The notice and order will give a date by which the owner must comply.

10. **Violations and Penalties**

- (A) Annual Test Reports received by Cherokee Metropolitan District after the required annual test date maybe assessed on the following:

An assessment of Fifty, (\$50.00) dollars, per device, maybe imposed on to the water bill, if the test report is not received within 30 days of the due date. A notice of violation will be issued and an additional One Hundred (\$100. 00) dollars assessment, per device, maybe imposed on to the water bill, if the test report is not received within 60 days of the due date. The water service maybe terminated if the test report(s) is not received within 90 days of the due date.

- (B) Assembly(s) that have failed testing will need to be repaired, replaced, or retested within 20 days of notice of failure. If the assembly(s) are not repaired, replaced, or retested within 20 days of notice this will be deemed a violation of Cherokee's Cross Connection Program Regulation and maybe assessed the following:

A notice of violation will be issued and an assessment of Fifty, (\$50.00) dollars, per device, maybe imposed on to the water bill if the test report is not received within 20 days of the due date. An additional One Hundred (\$100. 00) dollars assessment, per device, maybe imposed on to the water bill if the test report is not received within 40 days of the due date. The water service maybe terminated if the test report is not received within 60 days of the due date.

- (C) Any violation of the provisions of this Regulation, shall, upon conviction be punishable as provided in all applicable statues, laws, and regulations.

11. Hydrant Meters and Backflow Device Assembly Rentals

- (A) Assemblies are to be returned by renters to Cherokee Metropolitan District (CMD) for inspection and testing every 6 months.
- (B) Assemblies are to be inspected and tested upon their return to CMD.
- (C) Renters of CMD Hydrant assemblies shall be responsible for all costs to repair or replace assemblies.
 - (a) Assemblies cannot be altered in any form. Altering of assemblies will constitute a fine of up to \$10,000.00 dollars, plus labor charges and possible civil charges filed.

12. Privately Owned Hydrant Meters

- (A) Privately owned hydrant meters used within the Cherokee Metropolitan District must have no less than a Reduced Pressure Zone (RPZ) device in line with a hydrant meter.
 - (a) An 'Air Gap' alone will not be recognized as an adequate backflow method.
- (B) The privately owned RPZ's must have a copy of the current 'Testing Certification' present on site and a copy must be supplied to CMD.
 - (a) Cherokee personnel shall be granted access to the above-mentioned device for inspection at any time.
 - (b) Denied access to inspect device may be grounds for denial of use of CMD's water supply.

13. Conflict with other codes

- (A) If a dispute or conflict arises between the Colorado Plumbing Code as adopted herein, and any plumbing, mechanical, building, electrical, fire or other code adopted by the State, then the most stringent provisions of each respective code shall prevail.