

FIRST READING February 21, 2012

SECOND READING March 6, 2012

ORDINANCE #5671

AN ORDINANCE AMENDING TITLE 13 OF THE LOVELAND MUNICIPAL CODE BY THE ADDITION OF A NEW CHAPTER 13.06 REGARDING CROSS-CONNECTION CONTROL

WHEREAS, pursuant to Article 12 of the Colorado Primary Drinking Water Regulations, it is the responsibility of the City of Loveland to protect its drinking water from the backflow of any substance into the public water supply system by instituting and enforcing a cross-connection control program; and

WHEREAS, to meet the City's responsibilities under Article 12, City staff recommends that the Loveland Municipal Code be amended by addition of a new Chapter 13.06 implementing a cross-connection control program; and

WHEREAS, on December 14, 2011, the Loveland Utilities Commission adopted a motion recommending that the City Council adopt an ordinance to amend the Loveland Municipal Code by addition of Chapter 13.06; and

WHEREAS, the City Council finds that the addition of Chapter 13.06 to the Loveland Municipal Code implementing a cross-connection control program is in the best interests of the rate payers of the City of Loveland and necessary for the public's health, safety, and welfare.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF LOVELAND, COLORADO:

Section L That the Loveland Municipal Code is hereby amended by the addition of a new Chapter 13.06 to read as follows:

Chapter 13.06

CROSS-CONNECTION CONTROL

Sections:

- 13.06.010** **Definitions.**
- 13.06.020** **Purpose.**
- 13.06.030** **Cross-connections regulated.**
- 13.06.040** **Application and responsibilities.**
- 13.06.050** **Backflow prevention assembly requirements.**
- 13.06.060** **Containment protection.**

IMAGED

13.06.070	Irrigation systems.
13.06.080	Fire systems.
13.06.090	Temporary meters.
13.06.100	Wholesale customers.
13.06.110	Mobile units.
13.06.120	Right-of-way encroachment.
13.06.130	Plumbing code.
13.06.140	Access to premises and records.
13.06.150	Testing and repairs.
13.06.160	Responsibilities of cross-connection control technicians.
13.06.170	Maintenance of assemblies.
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13.06.190	Thermal expansion.
13.06.200	Pressure loss.
13.06.210	Parallel installation.
13.06.220	New construction.
13.06.230	Residential service connections.
13.06.240	Rental properties.
13.06.250	Retrofitting.
13.06.260	Costs of compliance.
13.06.270	Emergency suspension of service.
13.06.280	Non-emergency suspension of service.
13.06.290	Termination of service.
13.06.300	Recovery of costs.
13.06.310	Violations.
13.06.320	Falsifying information; tampering.

13.06.010 Definitions.

Except where specifically designated in this section, all words used in this Chapter 13.06 shall carry their customary meanings. Any word, term, or phrase not found in this section shall be determined as set forth in the Colorado Primary Drinking Water Regulations or in the Colorado Cross-Connection Control Manual, if not found in such regulations.

- A. "Air gap" means a physical separation between the free-flowing end of a potable water supply pipeline and the overflow rim of an open or non-pressure-receiving vessel. To be an "approved air gap," the separation must be at least twice the diameter of the inlet piping (supply pipe) measured vertically, and never be less than one inch.
- B. "Approved backflow prevention assembly," "backflow assembly," or "assembly" means an assembly to counteract backpressures or prevent backsiphonage. This assembly must be approved by the American Society of Sanitary Engineers ("ASSE") or the University of Southern California ("USC") and must be purchased and installed as a complete unit including shut-off valves and test cocks.
- C. "Auxiliary supply" means any water source or system other than the city's water.
- D. "Backflow" means the flow of water or other liquids, gases, or solids from any source back into the public water system in the opposite direction of its intended flow.
- E. "Certified Cross-Connection Control Technician" or "CCCCT" means a person holding a valid CCCCT certification issued in accordance with the Colorado Department of Public

Health and Environment Water Quality Control Division.

- F. "Closed system" means any water system or portion of a water system in which water is closed to atmosphere.
- G. "Colorado Cross-Connection Control Manual" means the latest version of the manual published by the Backflow Prevention Education Council of Colorado and is endorsed by the State addressing cross-connection control practices, which shall be used as a guidance document for the water supplier in implementing a Cross-Connection Control Program.
- H. "Colorado Primary Drinking Water Regulations" or "CPDWR" means the most recent edition of the regulations adopted by the Colorado Department of Public Health and Environment Water Quality Control Division.
- I. "Containment" means a method of protecting the public water system by the installation of an approved air gap or approved backflow prevention assembly at the point of service (end of the city's service pipe) to separate the customer's plumbing system from the city's distribution system.
- J. "Contamination" means the entry into or presence in a public water system of any substance which may be harmful to health and/or quality of the water.
- K. "Cross-connection" means any physical arrangement where the public water system is connected, directly or indirectly, actual or potential, with any other non-potable water system or auxiliary system, well, sewer, drain conduit, swimming pool, storage reservoir, plumbing fixture, swamp cooler, or any other device which contains, or may contain, contaminated or polluted water, sewage, used water, or other liquid of unknown or unsafe quality which may be capable of imparting contamination or pollution to the public water system as a result of backflow. Bypass arrangements, jumper connections, removable sections, swivel or changeover devices, or other temporary or permanent devices through which, or because of which, backflow may occur are considered to be cross-connections.
- L. "Degree of hazard" means the low or high hazard classification that shall be attached to all actual or potential cross-connections.
- M. "Director" means the director of the water and power department or his designee.
- N. "Double check valve backflow prevention assembly," "double check assembly," "double check," "DCVA," or "DC" means an assembly which consists of two independently operating check valves which are spring-loaded or weighted. This assembly comes complete with a shut-off valve on each side of the checks, as well as test cocks.
- O. "High hazard" means the classification assigned to an actual or potential cross-connection that potentially could allow a substance that may cause illness or death to backflow into the public water system.
- P. "In-premises protection" means a method of protecting the health of consumers served by the customer's plumbing system (*i.e.* located within the property lines of the customer's premises) by the installation of an approved air gap or backflow prevention assembly at the point of hazard.
- Q. "Low hazard" means the classification assigned to an actual or potential cross-connection that could allow a substance that may be objectionable, but not hazardous to one's health, to backflow into the public water system.
- R. "Mobile unit" means a unit connecting to the public water system through a hydrant, hose bibb, or other appurtenance of a permanent nature that is part of the public water system. Examples include, but are not limited to, the following: water trucks, pesticide applicator vehicles, chemical mixing units or tanks, waste or septage hauler trucks or units, sewer

cleaning equipment, carpet or steam cleaning equipment, rock quarry or asphalt/concrete batch plants, or any other mobile equipment or vessel. Uses that are excluded from this definition are recreational vehicles at assigned sites or parked in accordance with city ordinances pertaining to recreational vehicles, and homeowner devices that are used by the property owner in accordance with city ordinances pertaining to the provision of water service to a premises.

- S. "Plumbing code" means the most current plumbing code adopted by the city.
- T. "Plumbing hazard" means an internal or plumbing-type cross-connection in a consumer's potable water system that may be either a pollutional or a contamination-type hazard. This includes, but is not limited to, cross-connections to toilets, sinks, lavatories, wash trays, domestic washing machines, and lawn sprinkling systems. Plumbing-type cross-connections can be located in all types of structures including, but not limited to, homes, manufactured homes, apartment houses, hotels, and commercial or industrial establishments.
- U. "Pollutional hazard" means an actual or potential threat to the physical properties of the public water system or the potability of the public's or the consumer's potable water system but which would not constitute a health or system hazard. The maximum degree of intensity of pollution to which the public water system could be degraded under this definition would cause a nuisance or be aesthetically objectionable or could cause minor damage to the public water system or its appurtenances.
- V. "Potable water supply" means any system of water supply intended or used for human consumption or other domestic use that meets all requirements established by the Safe Drinking Water Act and the CPDWR.
- W. "Premises" means any piece of property to which water is provided including, but not limited to, all improvements, mobile structures, and structures located on it.
- X. "Public water system" means that part of the water system that is owned and maintained by the city including all pipes, valves, and appurtenances up to the outlet side of the curb stop or meter connection.
- Y. "Reduced pressure principle backflow prevention assembly" or "reduced pressure backflow assembly" or "RP assembly" means an assembly containing two independently acting approved check valves together with a hydraulically-operated, mechanically independent pressure differential relief valve located between the check valves. The assembly shall include properly located test cocks and tightly closing shut-off valves at each end of the assembly.
- Z. "Specialist" means an employee or contractor of the city who meets the requirements of this Chapter 13.06 and the city's Standard Operating Procedures Manual to carry out inspections and surveys for cross-connections.
- AA. "Standard Operating Procedures Manual" or "SOP Manual" means the most recent edition of the city's Standard Operating Procedures Manual related to cross-connection control.
- AB. "Technician" means a Cross-connection Control Technician certified to test backflow assemblies.
- AC. "Thermal expansion" means the pressure created by the expansion of heated water.
- AD. "Unapproved substance" means any substance, gas, or liquid other than the city's drinking water or the city's used drinking water.
- AE. "Used water" means any water supplied by the city to a customer's property after it has passed through the service connection and is no longer under the control of the city.

13.06.020 Purpose.

The purpose of this Chapter 13.06 is to protect the public water system from contamination or pollution due to any existing or potential cross-connections as defined in CPDWR Article 12, or as amended, and this Chapter 13.06 which is necessary for the public's health, safety, and welfare.

13.06.030 Cross-connections regulated.

- A. No cross-connections shall be created, installed, used, or maintained within the territory served by the city, except in accordance with this Chapter 13.06.
- B. The specialist shall carry out or cause inspections and surveys to be carried out to determine if any actual or potential cross-connections exist. If found necessary by the specialist, an assembly commensurate with the degree of hazard will be required to be installed at the service connection or at the point of hazard. The location will be determined by the specialist.
- C. The owner, occupant, or person in control of the property shall be responsible for all cross-connection control within the premises.
- D. Notwithstanding anything in this section to the contrary, the Director of Water and Power shall be authorized to require such additional information or documentation he deems reasonably necessary, in his sole discretion, to ensure the safety of the city's water supply.

13.06.040 Application and responsibilities.

This Chapter 13.06 applies throughout the city and to every premises and property served by the public water system. It applies to any premises, public or private, regardless of date of connection to the public water system. Every owner, occupant, and person in control of any concerned premises is responsible for compliance with the terms and provisions contained herein.

13.06.050 Backflow prevention assembly requirements.

The specialist shall approve the type of backflow assembly to be installed within the area served by the city. All users shall install an approved backflow assembly commensurate with the degree of hazard determined by the specialist on each service line that is directly connected to the city's water supply system. All assemblies shall be installed within the user's potable water system between the service connection and the first branch line leading off the service line, unless it is determined by the specialist to install the assembly at an alternate location for containment protection or in-premises protection. The cross-connection shall be eliminated or an assembly shall be required by the specialist to be installed in each of the following circumstances, but the specialist is in no way limited to the following circumstances:

- A. The nature and extent of any activity on the premises, or the materials used in connection with any activity on the premises, or materials stored on the premises, could contaminate or pollute the potable water supply.
- B. Premises having any one or more cross-connections or potential cross-connections.
- C. When a cross-connection survey report form is required by the city to be filled out and returned and it has not been received by the city.
- D. Internal cross-connections are present that are not correctable.
- E. Intricate plumbing arrangements exist or plumbing subject to frequent changes is present that make it impractical to ascertain whether or not cross-connections exist.
- F. There is a repeated history of cross-connections being established or re-established.
- G. There is unduly restricted entry so that inspections and surveys for cross-connections cannot

- be made with sufficient frequency to assure that cross-connections do not exist.
- II. Materials, chemicals, or other substances or apparatus are being used and if backflow occurred, contamination or pollution could result.
 - I. Installation of an approved backflow prevention assembly is deemed to be necessary in the judgment of the specialist to comply with any provision of CPDWR Article 12 or this Chapter 13.06.
 - J. Any premises having an auxiliary water supply.
 - K. In the event an in-premises assembly that protects the distribution system has not been tested or repaired as required by CPDWR Article 12 and this Chapter 13.06, a containment assembly will be required or water service will be terminated in accordance with this Chapter 13.06.
 - L. If it is determined that additions or rearrangements have been made to the plumbing system without obtaining proper permits as required by City Code.
 - M. When a garden hose attachment is connected to the premises' plumbing, including, but not limited to, fertilizer applicators, pesticide applicators, and radiator flush kits.
 - N. If the required building or sprinkler permits are not obtained.

13.06.060 Containment protection.

- A. Service connections to premises posing a high health cross-connection hazard shall have an approved air gap or reduced pressure backflow assembly installed for containment protection.
- B. If the specialist determines that no hazard exists for a connection serving such a premises, the requirements of subsection 13.06.060A. shall not apply.

13.06.070 Irrigation systems.

- A. All irrigation systems which are plumbed off of the main service line to the premises shall be protected in accordance with the plumbing code.
- B. All designated laterals which serve only irrigation systems shall install a reduced pressure backflow assembly or a pressure vacuum breaker assembly. These assemblies must be installed at a location established by the specialist and tested in accordance with this Chapter 13.06 and the SOP Manual.

13.06.080 Fire systems.

- A. An approved double check backflow prevention assembly shall be the minimum protection on all fire sprinkler systems using piping material that is not approved for potable water use or that does not provide for periodic flow-through. A reduced pressure backflow assembly must be installed if any solution other than the potable water can be introduced into the sprinkler system.
- B. All fire system assembly testing shall be in accordance with the Colorado Cross-Connection Control Manual, this Chapter 13.06, and the SOP Manual. Any conflict between the requirements set forth therein shall be resolved in favor of the more stringent requirement.

13.06.090 Temporary meters.

Backflow protection shall be required on temporary meters. The type of assembly shall be commensurate with the degree of hazard and shall be determined on a case-by-case basis by the specialist.

13.06.100 Wholesale customers.

Any customer or special water district that has a wholesale contract for water services with the city must have an active, ongoing cross-connection program. The cross-connection program must be in compliance with CPWDR Article 12 requirements pertaining to public water systems. The city reserves the right at all times to require a reduced pressure backflow assembly at the interconnect.

13.06.110 Mobile units.

Unless a city's designated fill station is being used, any mobile unit that uses the city's water from any premises or piping shall have an air gap or RP assembly installed. Mobile units not using the designated fill station may be subject to inspection or survey by the city to ensure compliance with this section.

13.06.120 Right-of-way encroachment.

- A. No person shall install or maintain a backflow prevention assembly upon or within any city right-of-way except as provided in this Section 13.06.120.
- B. The city reserves the right to require that a backflow prevention assembly be installed in the right-of-way.
- C. A backflow prevention assembly required by the city may be installed upon or within any city right-of-way only if the owner proves to the city that there is no other feasible location for installing the assembly and that installing it in the right-of-way will not interfere with traffic or utilities. The city retains the right to approve the location, height, depth, enclosure, and other requisites of the assembly prior to its installation.
- D. All permits required by the Loveland Municipal Code to perform work in the right-of-way shall be obtained.
- E. A property owner shall, at the request of the city and at the owner's expense, relocate a backflow prevention assembly which encroaches upon any city right-of-way when such relocation is necessary for street or utility construction or repairs.
- F. All city ordinances relevant to right-of-way encroachment shall be abided by.

13.06.130 Plumbing code.

As a condition of water service, customers shall install, maintain, and operate their piping and plumbing systems in accordance with the plumbing code.

13.06.140 Access to premises and records.

The specialist, authorized city employees, and persons contracted by the city to perform cross-connection inspections and surveys shall, at all reasonable times, have clear access, as defined in Section 13.02.135, to any premises within or outside the city served by the city's water utility for the purpose of inspecting, surveying, or testing any connection or potential connection to the public water system or for any other purpose whatsoever in connection with the necessary discharge of their duties and the enforcement provisions of this chapter. Said specialist, employees, and contractors shall also have access to all relevant records. If clear access to the premises or access to records is denied, a reduced pressure backflow assembly shall be required to be installed at the service connection to that premises, or service may be suspended in accordance with Section 13.06.280.

13.06.150 Testing and repairs.

Containment backflow prevention assemblies, or assemblies which have been identified and accepted by the city as protection for the public water system, shall be tested, and retested following repair, by a CCCCT in accordance with the requirements set forth in CPDWR Article 12, this Chapter 13.06, and the SOP Manual. Any conflict between the requirements set forth therein shall be resolved in favor of the more stringent requirement.

13.06.160 Responsibilities of cross-connection control technicians.

All cross-connection control technicians operating within the city shall be certified in accordance with all applicable regulations and shall comply with all requirements in this Chapter 13.06 and the SOP Manual.

13.06.170 Maintenance of assemblies.

Backflow prevention assemblies shall be maintained in accordance with the requirements set forth in the Colorado Cross-Connection Control Manual and the SOP Manual.

13.06.180 Installation requirements and specifications.

- A. Backflow prevention assemblies shall be installed in accordance with the requirements set forth in the Colorado Cross-Connection Control Manual and the SOP Manual.
- B. In the event the specialist allows a containment assembly to be installed at an alternate location, there shall be no connection between the meter and the backflow assembly.

13.06.190 Thermal expansion.

If a closed system has been created by the installation of a backflow prevention assembly, it shall be the responsibility of the property owner to eliminate the possibility of thermal expansion.

13.06.200 Pressure loss.

Any reduction in water pressure caused by the installation of a backflow assembly shall not be the responsibility of the city.

13.06.210 Parallel installation.

Premises where non-interruption of water supply is critical shall have two assemblies of the same type installed in parallel. They shall be sized in such a manner that either assembly will provide the minimum water requirements while the two together will provide the maximum water requirements.

13.06.220 New construction.

In all new non-residential buildings, an approved reduced pressure backflow assembly shall be installed on each potable water service line directly connected to the city's water system. All assemblies shall be installed within the user's potable water system between the service connection and the first branch line leading off the service line.

13.06.230 Residential service connections.

Any residential property that has been determined to have an actual or potential cross-connection or has violated the plumbing code or this Chapter 13.06 in any way shall be required to install an approved backflow prevention assembly in accordance with this Chapter 13.06.

13.06.240 Rental properties.

The property owner shall be responsible for the installation, testing, and repair of all backflow assemblies on owner's property or approved right-of-way locations. When tenants change, or if the plumbing is altered in any way, it shall be the owner's responsibility to notify the City.

13.06.250 Retrofitting.

Retrofitting shall be required on all service connections where an actual or potential cross-connection exists, and wherever else the specialist deems retrofitting necessary.

13.06.260 Costs of compliance.

All costs and expenses associated with the purchase, installation, inspection, survey, testing, replacement, maintenance, parts, and repair of the backflow assembly are the financial responsibility of the property owner.

13.06.270 Emergency suspension of service.

The director or his designee may, without prior notice, suspend water service to any premises when such suspension is necessary to stop the imminent threat of any actual or potential cross-connection as defined in this Chapter 13.06 and the SOP Manual.

13.06.280 Non-emergency suspension of service.

The director or his designee may suspend, with twenty-four hours notice, the water service to any premises where the conditions of this Chapter 13.06 or the SOP Manual have been violated.

13.06.290 Termination of service.

Failure on the part of any property owner to discontinue the use of all cross-connections, to physically separate cross-connections, or to abide by all the conditions of this Chapter 13.06 is sufficient cause for the immediate termination of water service by the city to the premises.

13.06.300 Recovery of costs.

Any property owner who violates any provision of this Chapter 13.06 shall be liable to the city for all costs and expenses incurred by the city as a result of such violation, including, without limitation, all costs and expenses related to suspending or terminating service and costs of labor, materials, and specified fees. Refusal to pay the assessed costs and expenses shall constitute a violation of this Chapter 13.06 and may result in termination of water service. All said costs and expenses shall constitute a lien upon the property where the water is used from the time of use and shall be a perpetual charge against said property until paid, and in the event the charges are not paid when due, the city clerk may certify such delinquent charges to the treasurer of Larimer County and the charges may be collected in the same manner as though they were part of the taxes.

13.06.310 Violations.

Any person who violates any provision of this Chapter 13.06 shall be guilty of a misdemeanor subject to the general penalty clause of the Loveland Municipal Code.

13.06.320 Falsifying information; tampering.

Any person who knowingly makes any false statement, representation, record, report or other

document filed or required to be maintained pursuant to this Chapter 13.06, or who falsifies, tampers with, or knowingly renders inaccurate any backflow assembly or method required under this Chapter 13.06 shall, in addition to civil and criminal penalties provided by state law, be guilty of a misdemeanor subject to the general penalty clause of the Loveland Municipal Code.

Section 2. That as provided in City Charter Section 4-9(a)(7), this Ordinance shall be published by title only by the City Clerk after adoption on second reading unless the Ordinance has been amended since first reading in which case the Ordinance shall be published in full or the amendments shall be published in full. This Ordinance shall be in full force and effect ten days after its final publication, as provided in City Charter Section 4-8(b).

ADOPTED this 6th day of March, 2012.



Cecil A. Gutierrez
Cecil A. Gutierrez, Mayor

ATTEST:

Teresa G. Andrews
City Clerk

APPROVED AS TO FORM:

Shawn L. Ellis
Assistant City Attorney

I, Teresa G. Andrews, City Clerk of the City of Loveland, Colorado, hereby certify that the above and foregoing Ordinance was introduced at a regular (or special) meeting of the City Council, held on February 21, 2012 and was initially published in the Loveland Daily Reporter-Herald, a newspaper published within the city limits in full on February 25, 2012 and by title except for parts thereof which were amended after such initial publication which parts were published in full in said newspaper on March 10, 2012.

Teresa G. Andrews
City Clerk

Effective Date: March 20, 2012