

# City of Gastonia

## Policy for Cross-Connection Control and Contamination Prevention

### **I) Purpose.**

The purpose of the Backflow Prevention and Cross-connection Control Ordinance and this Policy is as set forth in Chapter 14, Article VIII of the Gastonia Code of Ordinances.

### **II) Additional Definitions.**

Unless the context specifically indicates otherwise, the following terms and phrases, as used in this Policy will have the meanings hereafter designated:

(a) *Air-gap Separation.* An unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet supplying water from any source to a tank, plumbing fixture, or other device and the flood level rim of the receptacle; an approved air-gap separation distance shall be as specified in the current edition of the N. C. State Plumbing Code. In no case shall the air-gap separation distance be less than one inch. Upon approval by the City, an air-gap separation shall be considered as a backflow prevention assembly.

(b) *Auxiliary Water Supply.* Any water source other than the City's water system that is used in conjunction with or is otherwise available to a private water system.

(c) *Back Pressure.* Any pressure on water, other liquids, gaseous or vaporous substances, other substances, or any combination thereof, in a private water system that is connected in any manner to the City's water system under circumstances in which such pressure is greater than the pressure on the water in the City's water system, so that backflow may occur.

(e) *Back-siphonage.* Any circumstance in which the pressure on the water in the City's water system is less than the pressure on the water, other liquid, gas, other substances, or any combination thereof in a private water system that is connected in any manner to the City's water system, so that back flow may occur.

(f) *Certified Tester.* An individual person who is certified to test, repair, and overhaul backflow prevention assemblies of all types and to prepare reports on such assemblies, as evidenced by the successful completion of a training course approved by the City.

(g) *Containment.* The prevention of backflow from a private water system by an approved, properly functioning backflow prevention assembly which is installed, operated and maintained in accordance with the provisions of this article.

(h) *Double Check Valve Assembly.* An approved, properly functioning assembly composed of two independently acting check valves, including tightly closing shut-off valves,

attached at each end of the assembly and fitted with properly located test cocks. This assembly may only be used to protect against a moderate hazard.

(i) *Double Check-Detector Assembly.* An approved, specially designed assembly composed of a line-size Double Check Valve Assembly with a specific bypass water meter and a meter-sized approved double check valve assembly. A Double Check-Detector Assembly will be used on unmetered water services such as fire services. This assembly may only be used to protect against a moderate hazard.

(j) *Fire Line.* A system of pipes and equipment used exclusively to supply water for extinguishing fire.

(k) *Potable Water.* Water from any source which has been approved for human consumption by the jurisdictional agency of the State of North Carolina and / or Gaston County.

(l) *Reduced Pressure Principle Assembly.* A properly functioning assembly approved by the City composed of two independently-acting check valves, internally force-loaded to a normally closed position and separated by an intermediate chamber (or zone) in which there is an automatic relief means of venting to the atmosphere, internally loaded to a normally open position. The assembly must include tightly closing shut-off valves attached at each end of the assembly and fitted with properly located test cocks. This assembly is designed to protect against a high, imminent or existing hazard.

(m) *Reduced Pressure Principle-Check Assembly.* An approved, specially designed assembly composed of a line-size Reduced Pressure Principle Assembly with a specific bypass water meter and a meter-sized approved Reduced Pressure Principle Assembly. The assembly must include tightly closing shut-off valves attached at each end of the assembly and fitted with properly located test cocks. This assembly is designed to protect against a high hazard or an existing hazard on unmetered fire services.

(n) *Service Connection.* The terminal end of a complete water service, or, in the absence of a complete water service, the point at which water leaves the City's water system and enters a private water system.

(o) *Used Water.* Any water supplied from the City's water system to a customer's private water system after it has passed through the point of delivery and is no longer under the control of the City.

### **III) Duties of City.**

(a) The City shall exercise vigilance to ensure that the customer has taken the proper steps to protect the City's water system and preventing any contamination or pollution.

(b) After evaluating the private water system, the City will recommend an approved backflow prevention assembly required for containment control to be installed on the customer's private water system at the point of service.

- (c) When it has been determined by the City that a backflow prevention assembly is required, the City shall notify the customer in writing to correct within a time set by this Policy, any private water system that is in violation of this Policy.
- (d) Prior to the installation of any backflow prevention assembly, the customer will be notified that the installation of such may create a closed system, and, as a result, thermal expansion may occur.

**IV) Responsibility of Customer.**

- (a) The customer shall be responsible for complying with the requirements of this policy, notwithstanding the fact that one or more of the following conditions exist: water service to the customer has not been turned on; water service to the customer has been turned off; or the customer is not receiving any water from the City's water system. A customer's responsibility to comply with the provisions of this Policy shall not terminate until the City causes so much of the complete service connection of the customer's private water system to be removed in order that the customer is no longer capable of receiving water from the City's water system. The customer shall be responsible for complying with the provisions of this Policy if the customer's private water system is re-connected in any manner to the City's water system.
- (b) If a customer does not own the private water system and does not have the authority to bring said system into compliance with the provisions of this Policy, any remedy available to the City may be asserted against the customer, any person owning or otherwise controlling the customer's private water system, or jointly against such customer and such person.

**V) Determination of degree of hazard.**

- (a) No new service connection to the City's water system may be installed until the City has been provided with such information as is reasonably necessary to determine the degree of hazard associated with the customer's private water system, and to determine if a backflow prevention assembly is required.
- (b) No customer may modify or permit the customer's private water system to be modified in a manner which would affect the degree of hazard of such system until the City has been provided with the information that is reasonably necessary to determine if the degree of hazard and the appropriate backflow prevention assembly associated with such system are affected by the proposed modification or change. If such modification or change is determined by the City to require the installation of a new or different backflow prevention assembly, said assembly must be installed in accordance with the requirements of this Policy prior to making the proposed modification or change.

**VI) High hazard.**

The facilities, activities and processes set forth in this section are a high hazard and require the use of the specified backflow prevention assembly. A reduced pressure principle assembly or reduced pressure principle check assembly shall be installed if the customer's private water

system is served in any manner by an auxiliary and/or other potable water supply. Other conditions requiring the installation of a reduced pressure principle assembly or reduced pressure principle check assembly include, but are not limited to:

- 1) Lawn sprinkler systems with chemical injection or booster pump
- 2) Wastewater treatment plants
- 3) Connection to an unapproved water system or unapproved auxiliary water supply
- 4) Connection to tanks, pumps, lines, steam boilers or vessels that handle sewage, lethal substances, toxic or radioactive substances
- 5) Fire sprinkler systems with booster pump facilities or chemical additives
- 6) Buildings with five or more stories above ground level
- 7) Hospitals and other medical facilities
- 8) Morgues, mortuaries and autopsy facilities
- 9) Metal plating facilities
- 10) Bottling plants (subject to back pressure)
- 11) Canneries
- 12) Battery manufacturers
- 13) Exterminators and lawn care companies
- 14) Chemical processing plants
- 15) Dairies
- 16) Film laboratories
- 17) Car wash facilities
- 18) Dye works
- 19) Laundries
- 20) Swimming pools
- 21) Waterfront facilities

**VII) Moderate hazard.**

The facilities, activities and processes set forth in this section are a moderate hazard and require the use a double check valve assembly or double check detector assembly. Conditions requiring the installation of such an assembly include, but are not limited to:

- 1) Commercial establishments not categorized as High Hazard;
- 2) Fire sprinkler, standpipe system, without booster pump facilities and/or chemical additive(s);
- 3) Any private water system with connection to tanks, pumps, lines, or vessels that handle non-toxic substances;
- 4) Service stations, bakeries, and beauty shops not classified as a severe hazard;
- 5) Mobile home park;
- 6) Restaurant;
- 7) School.

**VIII) Imminent or Existing hazard.**

- (a) If the City determines that a customer's private water system constitutes an imminent hazard, the customer shall install a backflow prevention assembly as approved by the City within 24 hours after notice of the City's determination. If the customer fails to install the specified assembly in a timely manner or refuses to install the assembly, water service to the customer's private water system may be terminated. If the City is unable to give notice

to such customer within 24 hours after the determination that an imminent hazard exist despite reasonable efforts to provide such notice, the City may terminate water service to such private water system until the assembly is installed.

- (b) If the City determines that a customer's private water system constitutes an existing hazard to the City's water system, the City will terminate water service to the customer immediately without notice, until such time that the customer installs a backflow prevention assembly as approved by the City. The City shall notify the customer as soon as reasonably possible of such determination, the termination of water service and the assembly that must be installed before water service can be restored.

**IX) Installation and testing of backflow prevention assemblies.**

- (a) All backflow prevention assemblies shall meet the design and performance standards of the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research and should be on their approved list. Backflow prevention assemblies shall also meet the requirements of the American Society of Sanitary Engineering, and carry the ASSE seal. In addition, backflow prevention assemblies for fire lines shall be approved by Factory Mutual Systems (FM) and meet the requirements of the National Fire Protection Association (NFPA) Codes.
- (b) All backflow prevention assemblies required by this policy shall be installed and maintained on the customer's premises as part of the customer's private water system at or near the service connection and before the service line from said connection is connected to any other pipe(s), except as otherwise approved by the City. Each assembly shall be properly located, installed, maintained and tested so that said assembly is effective in protecting the City's water system from any possible contamination or pollution.
- (c) When it has been determined by the City that a backflow prevention assembly is required, the customer shall be responsible for installing the assembly in accordance with this Policy and unless otherwise approved by the City, within the time frames set forth below:

Air-gap separation	30 days
Backflow Prevention Assemblies (2" and smaller)	30 days
Backflow Prevention Assemblies (2 ½" and larger)	60 days

- (d) Notwithstanding the foregoing, the City may require the installation of the backflow prevention assembly within a shorter time period than specified above, or immediately in order to protect the City's water system from an existing or imminent hazard, or from any other condition posing an unreasonable threat of contamination or pollution to the City's water system.
- (e) Each backflow prevention assembly shall be installed in accordance with the provisions of said Policy, the manufacturer's installation instructions, the latest revision of the City of Gastonia Standard Details and Specifications, and such additional instructions as may be provided by the City. Reduced Pressure Principle Assemblies must be installed in a

horizontal position and in a location in which no portion of the assembly can become submerged under any circumstances.

- (f) Any backflow prevention assembly shall be installed by a licensed plumbing contractor, fire protection contractor, or utility contractor licensed by the State of North Carolina, all of which shall be approved by the City prior to installation.
- (g) Each backflow prevention assembly shall be functioning properly when installed. Each customer shall test, maintain and repair each required assembly. A certified tester shall conduct such test(s) on an annual basis thereafter. In addition, upon completing the repair of any backflow prevention assembly, such assembly shall be tested as prescribed above. Each customer shall send a copy of the record for each test or repair to the City within ten (10) days after the completion of the test or repair. Such records shall be maintained on forms approved by the City. Each customer shall maintain a complete, written record of every repair and test of each assembly for a period not less than three (3) years.
- (h) It shall be unlawful for any person to submit, or fail to submit, any assembly testing, certification, maintenance or other record to the City which is false or incomplete in any material respect.
- (i) All residential irrigation containment assemblies are to be tested **every three years**. Containment assemblies on commercial irrigation systems are to be tested **annually**. All residential domestic containment assemblies are to be tested **annually**. Containment assemblies on commercial domestic systems are to be tested **annually**. Testing of containment assemblies shall be conducted by a certified tester at the customer's expense. The owner shall cause such maintenance or repairs to be made, rendering the containment assembly fully operational. Additional testing and maintenance requirements may be requested or imposed as determined by the City. It is the owner's responsibility to keep a complete, written record of any repairs and testing of the containment assembly for at least three years.

Backflow Service	Testing Requirement
Commercial	Annually
Residential Irrigation	Every 3 Years
Residential Domestic	Annually

- (j) If a customer does not wish for water service to be interrupted when a backflow prevention assembly is tested, repaired, or replaced, a parallel installation of an approved backflow prevention assembly must be made in accordance with the provisions of this Policy.
- (k) The rubber components of backflow prevention assemblies shall be replaced as part of a routine maintenance program as recommended by the manufacturer and in no instance less than every 5 years or as required by the City.
- (l) An air-gap separation need not be installed at or near the service connection in all cases,

but must be installed at a location approved by the City. Said separation would be in addition to any other backflow prevention assembly required by this Policy.

**XI) Alternative backflow prevention assembly.**

Any customer may satisfy the provisions of this Policy by installing an alternative backflow prevention assembly which shall provide an equal or greater level of protection to the City's water system than required by this Policy. The use of an alternative backflow prevention assembly shall be approved by the City prior to installation.

**X) Adoption.**

This Policy is effective upon approval.

*This policy was adopted in conjunction with Article VIII. Backflow Prevention and Cross-Connection Control of the City of Gastonia City Code on June 17, 2003, to be effective July 1, 2003.*