

**2CHAPTER 20A: WATER SYSTEM BACKFLOW PREVENTION BY
CONTAMINANT**

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20A-101 Cross Connection Control.

(a) To protect the public potable water supply of the City of Lawrenceville from the possibility of contamination or pollution by isolating within the consumer's internal distribution system(s) or the consumer's private water system(s) such contaminants or pollutants which could backflow into the public water systems.

(b) To promote the elimination or control of existing cross connections, actual or potential, between the consumer's in-plant potable water system(s) and non-potable water system(s), plumbing fixtures and industrial piping systems; and,

(c) To provide for the maintenance of a continuing program of cross connection control that will systematically and effectively prevent the contamination or pollution of all potable water systems.

20A-102 Responsibility.

The Director of Utilities or his designee shall be responsible for the protection of the public potable water distribution system from contamination or pollution due to the backflow of contaminants or pollutants through the water service connection. If an approved backflow prevention assembly is required at the consumer's water service connection; or, within the consumer's private water system for the safety of the water system, the Director of Utilities or his designated agent shall give notice in writing to said consumer to install such an approved backflow prevention assembly at a specific location(s) on his premises.

The consumer shall immediately install such approved backflow prevention assembly at the consumer's own expense; and, failure, refusal, or inability on the part of the consumer to install, have tested and maintained said assembly, shall constitute grounds for discontinuing water service to the premises until such requirements have been satisfactorily met.

20A-103 **Definitions.**

(a) **Air Gap** shall be defined to mean a physical separation between the free flowing discharge end of a potable water supply pipeline and an open or non-pressure receiving vessel. An "approved air gap" shall be at least double the diameter of the supply pipe measured vertically above the overflow rim of the vessel-in no case less than 1 inch (2.54 cm).

(b) **Auxiliary Water Supply** shall be defined to mean any water supply on or available to the premises other than the purveyor's approved public water supply will be considered as an auxiliary water supply. These auxiliary waters may include water from another purveyor's public potable water supply or any natural source(s) such as a well, spring, river, stream, harbor, etc., or used waters or industrial fluids. These natural waters may be contaminated or polluted or they may be objectionable and constitute an unacceptable water source over which the water purveyor does not have sanitary control.

(c) **Backflow** shall be defined to mean the undesirable reversal of flow of water or mixtures of water and other liquids, gases or other substances into the distribution pipes of the potable supply of water from any source or sources. See "Backsiphonage" and "Backpressure."

(d) **Backflow Preventer** shall be defined to mean an assembly or means designed to prevent backflow.

(e) **Backflow Prevention by Containment Program** shall be the manual attached hereto as Attachment "8" and incorporated herein, to be used as the most comprehensive statement of the rules and regulations to be followed by the Water Department and others whose activities fall within the scope of this ordinance.

(f) **Backpressure** shall be defined to mean any elevation of pressure in the downstream piping system (by pump, elevation of piping, or steam and/or air pressure) above the supply pressure at the point of consideration, which would cause, or tend to cause, a reversal of the normal direction of flow.

(g) **Backsiphonage** shall be defined to mean a form of backflow due to a reduction in system pressure, which causes subatmospheric pressure to exist at a site in the water system.

(h) **Contamination** shall be defined to mean an impairment of the quality of the water, which creates an actual hazard to the public health through poisoning or through the spread of disease by sewage, industrial fluids, waste, etc.

(i) **Cross Connection** shall be defined to mean any unprotected, actual or potential, connection or structural arrangement between a public or a consumer's potable water system and any other source or system through which it is possible to introduce into any part of the potable system any used water, industrial fluid, gas, or substance other than the intended potable water with which the system is supplied. Bypass arrangements, jumper connections, removable sections, swivel or change-over devices and other temporary or permanent devices through which or because of which backflow can or may cause are considered to be cross connections.

(1) The term "**direct cross connection**" shall be defined to mean a cross connection which is subject to both backsiphonage and backpressure.

(2) The term "**indirect cross connection**" shall be defined to mean a cross connection which is subject to backsiphonage only.

(j) **Cross Connections-Controlled** shall be defined to mean connection between a potable water system and a non-potable water system with an approved backflow prevention assembly properly installed and maintained so that it will continuously afford the protection commensurate with the degree of hazard.

(k) **Cross Connection Control by Containment** shall be defined to mean the appropriate type or method of backflow protection at the service connection, commensurate with the degree of hazard of the consumer's potable water system.

(l) **Devices owned or leased by the City** shall be defined to mean pipes, hoses, fire hydrants, water lines, water mains, valves, pressure regulators, and water meters as used in this chapter.

(m) **Double Check Valve Backflow Prevention Assembly** shall be defined to mean an assembly composed of two independently acting, approved check valves, including tightly closing resilient seated shutoff valves attached at each end of the assembly and fitted with properly located resilient seated test cocks. This assembly shall only be used to protect against a non-health hazard (i.e. pollutant).

(n) **Hazard, Degree of** shall be defined to mean either a pollutional (non-health) or contamination (health) hazard and is derived from the evaluation of conditions within a system.

(o) **Hazard-Health** shall be defined to mean an actual or potential threat of contamination of a physical or toxic nature to the public potable water system or the consumer's potable water system that would be a danger to health.

(p) **Hazard-Plumbing** shall be defined to mean an internal or plumbing type cross connection in a consumer's potable water system that may be either a polluttional or a contamination type hazard. This includes, but is not limited to, cross connections to toilets, sinks, lavatories, wash trays and lawn sprinkling systems. Plumbing type cross connections can be located in many types of structures including homes, apartment houses, hotels and commercial or industrial establishments. Such a connection, if permitted to exist, must be properly protected by an appropriate type of backflow prevention assembly.

(q) **Hazard-Polluttional** shall be defined to mean an actual or potential threat to the physical properties of the water system or the potability of the public or the consumer's potable water system but which would not constitute a health or system hazard, as defined. The maximum degree of intensity of pollution to which the potable water system could be degraded under this definition would cause a nuisance or be aesthetically objectionable or could cause minor damage to the system or its appurtenances.

(r) **Hazard-System** shall be defined to mean an actual or potential threat of severe danger to the physical properties of the public or the consumer's potable water system or of a pollution or contamination which would have a protracted effect on the quality of the potable water in the system.

(s) **Industrial Fluids** shall be defined to mean any fluid or solution which may be chemically, biologically or otherwise contaminated or polluted in a form or concentration which would constitute a health, system, polluttional or plumbing hazard if introduced into an approved water supply. This includes, but is not limited to: polluted or contaminated used waters; all types of process waters and "used waters" originating from the public potable water system which may deteriorate in sanitary quality; chemical in fluid form; plating acids and alkalies; circulated cooling water connected to an open cooling tower and/or cooling waters that are chemically or biologically treated or stabilized with toxic substances; contaminated natural waters such as from wells, springs, streams, rivers, bays, harbors, seas, irrigation to canals or systems, etc.; oils, gases glycerine, paraffins, caustic and acid solutions and other liquid and gaseous fluids used industrially, for other processes, or for fire fighting purposes.

(t) **Polluttion** shall be defined to mean an impairment of the quality of the water to a degree which does not create a hazard to the public health but which does adversely and unreasonably affect the aesthetic qualities of such waters for domestic use.

(u) **Reduced Pressure Principle Backflow Prevention Assembly:** shall be defined to mean an assembly containing two independently acting approved check valves together with a hydraulically operating, mechanically independent pressure differential relief valve located between the check valves and at the same time below the first check valve. The unit shall include properly located resilient seated test cocks and tightly closing resilient seated shutoff valves at each end of the assembly. This assembly is designed to protect against a non-health (i.e. pollutant) or a health hazard (i.e. contaminant). This assembly shall not be used for backflow protection of sewage or reclaimed water.

(v) **Water-Non-potable** shall be defined to mean a water supply which has not been approved for human consumption by the health agency having jurisdiction.

(w) **Water-Potable** shall be defined to mean any public potable water supply which has been investigated and approved by the health agency. The system must be operating under a valid health permit. In determining what constitutes an approved water supply, the health agency has final judgment as to its safety and potability.

(x) **Water-Service Connection** shall be defined to mean the terminal end of a service connection from the public potable water system, (i.e., where the water purveyor may lose jurisdiction and sanitary control of the water at its point of delivery to the consumer's water system). If a water meter is installed at the end of the service connection, then the service connection shall mean the downstream end of the water meter.

(y) **Water-Used** shall be defined to mean any water supplied by a water purveyor from a public potable water system to a consumer's water system after it has passed through the service connection and is no longer under the control of the water purveyor.

20A-104 **Requirements.**

(a) **Water System.** The water system shall consist of two (2) parts:

(1) The Water Purveyor's System shall include all facilities of the water system under the complete control of the purveyor, to the point where the consumer's system begins, and shall consist of the following:

(i) *Source Facilities* shall include all components of the facilities utilized in the production, treatment, storage, and delivery of water to the distribution system; and

(ii) *Distribution system* shall include the network of pipes and conduits used for the delivery of water from the source to the consumer's system.

(2) The Consumer's System shall include those parts of the facilities beyond the termination of the water purveyor's distribution system, which are utilized in conveying potable water to points of use.

20A-105 **Policy.**

(a) In addition to the policies set forth below, the Backflow Prevention by Containment Program, attached as Attachment "8", is hereby referenced and incorporated herein. The Backflow Prevention by Containment Program, which includes the text of this Ordinance, contains a more comprehensive statement of the rules and regulations to be followed by the Director of Utilities, employees of the Director, and other individuals and business entities whose activities fall within the scope of this Ordinance.

(b) No water service connection to any premise shall be installed or maintained by the water purveyor unless the water supply is protected as required by the Georgia Environmental Protection Division laws and regulations, the State of Georgia Plumbing Code and this Ordinance for the Control of Backflow and Cross Connections. An approved backflow prevention assembly shall be installed on each service line to a consumer's water system and is to be located immediately downstream of the water meter or as close as physically feasible to the water meter. The type of device is commensurate to the degree of hazard, which is determined by the Director of Utilities or his designee. Any installation other than that specified in this section shall be approved by the Director of Utilities or his designee. Service of water to any premise shall be discontinued by the water purveyor if a backflow prevention assembly is required by this Ordinance and is not installed, tested and maintained, or if it is found that a backflow prevention assembly 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.

(c) The consumer's system should be open for inspection at all reasonable times to authorized representatives of the City of Lawrenceville Water Department to determine whether unprotected cross connections or other structural or sanitary hazards, including violations of these regulations, exist. When such a condition becomes known, the Director of Utilities shall deny or immediately discontinue service to the premises by providing for a physical break in the service line until the consumer has corrected the condition(s) in conformance with the State of Georgia statutes relating to plumbing and water supplies and the regulations adopted pursuant thereto.

(d) An approved backflow prevention assembly shall also be installed on each service line to a consumer's water system immediately downstream of the water meter or as close as physically feasible to the water meter; but, in all cases, before the first branch line leading off the service line wherever the following conditions exist:

(1) In the case of premises having an auxiliary water supply which is not or may not be of safe bacteriological or chemical quality and which is not acceptable as an additional source by the Director of Utilities, the public water system shall be protected against backflow from the premises by installing an approved backflow prevention assembly in the service line commensurate with the degree of hazard.

(2) In the case of premises on which any industrial fluids or any other objectionable substance is handled in such a fashion as to create an actual or potential hazard to the public water system, the public system shall be protected against backflow from the premises by installing an approved backflow prevention assembly in the service line commensurate with the degree of hazard. This shall include the handling of process waters and waters originating from the water purveyor's system which have been subject to deterioration in quality.

(3) In the case of premises having one of the following:

- (i) internal cross connections that cannot be permanently corrected or protected against, or intricate plumbing and piping arrangements or where entry to all portions of the premises is not readily accessible for inspection purposes;
- (ii) intricate plumbing and piping arrangements;

where entry to all portions of the premises is not readily accessible for inspection purposes making it impracticable or impossible to ascertain whether or not dangerous cross connections exist; or the public water system shall be protected against backflow from the premises by installing an approved backflow prevention assembly in the service line.

(e) The type of protective assembly required under subsections 20A-105(a), (b), and (c) shall depend upon the degree of hazard which exists as follows:

(1) In the case of any premise where there is an auxiliary water supply as stated in subsection 3.2.3a of this section and it is not subject to any of the following rules, the public water system shall

be protected by an approved air gap or an approved reduced pressure principle backflow prevention assembly.

(2) In the case of any premise where there is water or substance that would be objectionable but not hazardous to health, if introduced into the public water system, the public water system shall be protected by an approved double check valve backflow prevention assembly.

(3) In the case of any premises where there is any material dangerous to health which is handled in such a fashion as to create an actual or potential hazard to the public water system, the public water system shall be protected by an approved air gap or an approved reduced pressure principle backflow prevention assembly. Examples of premises where these conditions will exist include sewage treatment plants, sewage pumping stations, chemical manufacturing plants, hospitals, mortuaries and plating plants.

(4) In the case of any premise where there are unprotected cross connections, either actual or potential, the public water system shall be protected by an approved air gap or an approved reduced pressure principle backflow prevention assembly at the service connection.

(5) In the case of any premise where, because of security requirements or other prohibitions or restrictions, it is impossible or impractical to make a complete in-plant cross connection survey, the public water system shall be protected against backflow from the premises by either an approved air gap or an approved reduced pressure principle backflow prevention assembly on each service to the premise.

(f) It shall be the duty of the consumer at any premise where backflow prevention assemblies are installed to have a field test performed by a certified backflow prevention assembly tester upon installation, after any repairs and at least once per year. In those instances where the Director of Utilities deems the hazard to be great enough he may require field tests at more frequent intervals. These tests shall be at the expense of the water user and shall be performed by a certified tester listed on the City of Lawrenceville Certified Backflow Prevention Testers List. It shall be the duty of the Director of Utilities or his designee to see that these tests are made in a timely manner. These assemblies shall be repaired, overhauled or replaced at the expense of the consumer whenever said assemblies are found to be defective. All repairs, overhauls or replacements shall be performed by a licensed plumber in the State of Georgia. Records of such tests, repairs and overhauls shall be kept and a copy shall be sent to the Director of Utilities or his designee.

(g) All presently installed backflow prevention assemblies which do not meet the requirements of this section but were approved devices for the purposes described herein at the time of installation and which have been properly maintained, shall, except for the testing and maintenance requirements under subsection 3.2.6, be excluded from the requirements of these rules so long as the Director of Utilities or his designee is assured that they will satisfactorily protect the water purveyor's system. Whenever the existing device is moved from the present location or requires more than the minimum maintenance or when the Director of Utilities finds that the maintenance constitutes a hazard to health, the unit shall be replaced by an approved backflow prevention assembly meeting the requirements of this section.

20A-106 **Preventing Access or Obstructing Valves Prohibited.**

No person shall remove or cover a water valve box with dirt or other material so that the cover or top of the valve box is not visible or direct access to the valve is denied to the Lawrenceville personnel.

20A-107 **Unauthorized Operation of Valves or Other Water System Control or Regulating Devices.**

No person shall operate or change the adjustment of any water system valve, pressure regulating device, or other water system control device without first obtaining written approval from the Director of Utilities.

20A-108 **Damage of Any Appurtenances to Water Distribution System Prohibited.**

No person shall damage, destroy, deface, impair the function of, or otherwise vandalize any portion of the City's Water Distribution System.

20A-109 **Penalties.**

The violation of any provision of this chapter shall be punishable by a fine for each offense or violation not to exceed \$1,000.00 and imprisonment not to exceed six (6) months for each offense or violation. Additionally, any person violating any provision of this chapter may be liable to pay restitution in the discretion of the City Recorder's Court for:

(a) The total cost incurred by the City to repair or replace facilities damages as a result of the city violation;

(b) Any injury or damage to person or property or loss of services resulting from the violation.

20A-110 **Conflicting Parts.**

All Ordinances or parts of Ordinances in conflict with this Ordinance are hereby repealed.

¹*Ordinance to Amend Penalty Provisions and to make Technical Revisions within Certain Sections of the City of Lawrenceville's 2005 Lawrenceville Code of Ordinances was adopted on September 10, 2007.*
²*Ordinance to Amend Section 20A of the General Code of Ordinances was adopted on November 12, 2007.*