

CHAPTER 300
CROSS CONNECTION CONTROL REGULATIONS

DIVISION 1
SCOPE AND ADMINISTRATION

PART 1 – SCOPE AND APPLICATION

SECTION 9.300.101
GENERAL

~~Sec. 9.300.010~~ 101.1. General provisions Title.

These regulations shall be known and cited as the Cross Connection Control Regulations of the City of Gladstone, Clay County, Missouri hereinafter referred to as “this chapter”.

~~(a)~~ 9.300.101.2 Scope.

The provisions of this chapter are to protect the water main and ~~public~~ water supply system from introduction of contaminants or pollutants, by containing within the consumer's internal distribution system, contaminants which could backflow into the water main and ~~public~~ water supply system.

~~(b)~~ 9.300.101.3 Intent.

The purpose of this chapter is to provide for the maintenance of a continuing program of cross connection control which will systematically and effectively prevent the contamination or pollution of the water main and ~~public~~ water supply system.

~~Sec. 9.300.020. Applicability.~~

~~(a) This chapter shall apply to all buildings or premises served by the public water system of the city.~~

~~(b) Exceptions:~~

~~(1) This chapter does not apply to buildings or premises used solely for residential purposes unless a cross connection is specifically identified or this chapter indicates otherwise.~~

~~(2) The state department of natural resources (DNR) may issue an exemption from the requirements of this chapter if the customer can demonstrate to DNR and the city that the activities taking place at the customer's facility and the materials used in connection with these activities or stored on the premises cannot endanger the health of customers or degrade the water quality of the public water system should backflow occur, or that any potential risk posed by these materials or activities is isolated from the public water system. Those customers granted an exemption in accordance with this subsection (2) shall report to the city any proposed changes in process, plumbing, or materials used or stored at the exempted~~

~~facility at least 14 days prior to making the change. Any exemption granted under this subsection (2) shall be void if DNR or the city determines that the customer facility has become an actual or potential backflow hazard, or if the customer fails to provide notice at least 14 days prior to making changes in process, plumbing, or materials used or stored at the facility.~~

SECTION 9.300.102

APPLICABILITY

9.300.102.1 General.

Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall be applicable. Where, in any specific case, different sections of this chapter specify requirements, most restrictive shall govern.

9.300.102.2 Existing installations.

Plumbing systems lawfully in existence at the time of the adoption of this chapter shall be permitted to have their use and maintenance continued if the use, maintenance or repair is in accordance with the original design and hazard to life, health or property is not created by such plumbing system.

9.300.102.3 Maintenance.

Plumbing systems, materials and appurtenances, both existing and new and parts thereof, shall be maintained in proper operating condition in accordance with the original design in a safe and sanitary condition. Devices or safeguards required by this code shall be maintained in compliance with the edition of the code under which they were installed.

The owner or the owner's authorized agent shall be responsible for maintenance of plumbing systems. To determine compliance with this provision, the *building official* shall have the authority to require any *plumbing system* to be reinspected.

9.300.102.4 Additions, alterations or repairs.

Additions, alterations, renovations or repairs to any plumbing system shall conform to that required for a new plumbing system without requiring the existing plumbing system to comply with all the requirements of this code. Additions, alterations or repairs shall not cause an existing system to become unsafe, insanitary or overloaded.

Minor additions, alterations, renovations and repairs to existing plumbing systems shall meet the provisions for new construction, unless such work is done in the same manner and arrangement as was in the existing system, is not hazardous and is *approved*.

9.300.102.5 Referenced codes and standards.

The codes and standards referenced in this chapter shall be considered as part of the requirements of this code to the prescribed extent of each such reference and as further regulated in Sections 9.300.102.5.1 and 9.300.102.5.2.

9.300.102.5.1 Conflicts.

Where conflicts occur between provisions of this chapter and the referenced standards, the provisions of this chapter shall apply.

9.300.102.5.2 Provisions in referenced codes and standards.

Where the extent of the reference to a referenced code or standard includes subject matter that is within the scope of this chapter, the provisions of this chapter, as applicable, shall take precedence over the provisions in the referenced code or standard.

9.300.102.6 Requirements not covered by code.

Any requirements necessary for the strength, stability or proper operation of an existing or proposed plumbing system, or for the public safety, health and general welfare, not specifically covered by this chapter shall be determined by the *building official*.

9.300.102.7 Other laws.

The provisions of this chapter shall not be deemed to nullify any provisions of local, state, or federal law.

9.300.102.8 Application of references.

Reference to division or section numbers, or to provisions not specifically identified by number, shall be construed to refer to such chapter, section or provision of this chapter.

9.300.102.9 Partial invalidity.

In the event that any part or provision of this chapter is held to be illegal or void, this shall not have the effect of making void or illegal any of the other parts or provisions.

Sec. 9.300.030. Policy.

~~This chapter shall apply to all matters affecting or relating to backflow. Where, in any specific case, different sections of this chapter specify different materials, methods of construction or other requirements, the most restrictive shall govern. Where this chapter conflicts with adopted codes of the city, this chapter and its sections shall govern. This chapter will be reasonably interpreted by the city manager. It is the city manager's intent to recognize the varying degrees of hazards and to apply the principle that the degree of protection shall be commensurate with the degree of hazard. The city manager shall be primarily responsible for the containment of contaminants or pollutants that may backflow into the public water distribution system. The cooperation of the consumers is required to implement and maintain the program to control cross connections. The city manager and consumers are jointly responsible for preventing contamination of the public water system. If, in the judgment of the city manager, cross connection protection is required through either piping modification or installation of an approved backflow assembly, due notice shall be given to the consumer. The consumer shall, within 60 days of written notice by the city, comply by providing the required protection at the consumer's own expense; failure, refusal, or inability on the part of the consumer to provide such protection shall constitute~~

~~grounds for discontinuing water service to the building and/or premises until such protection has been provided.~~

PART 2 – ADMINISTRATION AND ENFORCEMENT

SECTION 9.300.103 **DUTIES AND POWERS OF BUILDING OFFICIAL**

9.300.103.1 General.

The *building official* is hereby authorized and directed to enforce the provisions of this chapter. The *building official* shall have the authority to render interpretations of this chapter and to adopt policies and procedures in order to clarify the application of its provisions. Such interpretations, policies, and procedures shall be in compliance with the intent and purpose of this chapter. Such policies and procedures shall not have the effect of waiving requirements specifically provided for in this chapter.

9.300.103.2 Applications and permits.

The *building official* shall receive applications, review construction documents and issue permits for the installation and alteration of *plumbing systems*, inspect the premises for which such permits have been issued, and enforce compliance with the provisions of this chapter.

9.300.103.3 Inspections.

The *building official* shall make all of the required inspections, or shall accept reports of inspection by *approved agencies* or individuals. Reports of such inspections shall be in writing and be certified by a reasonable officer of such *approved agency* or by the responsible individual. The *building official* is authorized to engage such expert opinion as deemed necessary to report on unusual technical issues that arise, subject to the approval of the appointing authority.

9.300.103.4 Right of entry.

Where it is necessary to make an inspection to enforce the provisions of this chapter, or where the *building official* has reasonable cause to believe that there exists in any building or on any premises any conditions or violations of this chapter that make the building or premises unsafe, insanitary, dangerous or hazardous, the *building official* shall have the authority to enter the building or premises at all reasonable times to inspect or to perform the duties imposed upon the *building official* by this chapter. If such building or premises is occupied, the *building official* shall present credentials to the *occupant* and request entry. If such building or premises is unoccupied, the *building official* shall first make a reasonable effort to locate the *owner*, the owner's authorized agent or other *person* having charge or control of the building or premises and request entry. If entry is refused, the *building official* shall have recourse to every remedy provided by law to secure entry.

Where the *building official* shall have first obtained a proper inspection warrant or other remedy provided by law to secure entry, the *owner*, owner's authorized agent, *occupant* or *person* having charge, care or control of any building or premises shall not fail or neglect, after proper request is made as herein provided, to promptly permit entry therein by the *building official* for the purpose of inspection and examination pursuant to this chapter.

9.300.103.5 Identification.

The *building official* shall carry proper identification when inspecting premises in the performance of duties under this chapter.

9.300.103.6 Notices and orders.

The *building official* shall issue all necessary notices or order to ensure compliance with this chapter.

9.300.103.7 Department records.

The *building official* shall keep official records of all business and activities of the department specified in the provisions of this chapter. Such records shall be retained in the official records for the period required for retention of public records.

SECTION 9.300.104 **NOTICES AND ORDERS**

9.300.104.1 Notice to person responsible.

Whenever the *building official* determines that there has been a violation of this chapter or has grounds to believe that a violation has occurred, notice shall be given in the manner prescribed in Sections 9.300.104.2 and 9.300.104.3 to the *owner*, owner's authorized agent and/or *person(s)* responsible for the violation as specified in this chapter.

9.300.104.2 Form.

Such notice prescribed in Section 9.300.104.1 shall be in accordance with the following:

1. Be in writing.
2. Include a description of the real estate sufficient for identification.
3. Include a statement of the violation or violations and why the notice is being issued.
4. Include a correction order allowing a reasonable time to make the repairs and improvements required to bring the premises or private property into compliance with the provisions of this chapter.
5. Inform the property *owner* or owner's authorized agent of the right to appeal.
6. Include a statement of the right to file a lien in accordance with Section 9.300.105.3.

9.300.104.3 Method of service.

Such notice shall be deemed to be properly served if a copy thereof is:

1. Delivered personally;
2. Sent by certified or first-class mail addressed to the last known address; or
3. Posted in a conspicuous place in or about the *premises* affected by such notice.

9.300.104.4 Unauthorized tampering.

Signs, tags, or seals posted or affixed by the *building official* shall not be mutilated, destroyed or tampered with, or removed without authorization from the *building official*.

9.300.104.5 Penalties.

Penalties for noncompliance with orders and notices shall be as set forth in Section 9.300.105.4.

9.300.104.6 Transfer of ownership.

It shall be unlawful for the *owner* of any *premises* or private property thereof, who has received a compliance order upon whom a notice of violation or order has been served, to sell, transfer, mortgage, lease or otherwise dispose of such *premises* or private property thereof to another until the provisions of the compliance order or notice of violation have been complied with, or until such *owner* or the owner's authorized agent shall first furnish the grantee, transferee, mortgagee or lessee a true copy of any compliance order or notice of violation issued by the *building official* and shall furnish to the *building official* a signed and notarized statement from the grantee, transferee, mortgagee or lessee, acknowledging the receipt of such compliance order or notice of violation and fully accepting the responsibility without condition for making the corrections or repairs required by such compliance order or notice of violation.

SECTION 9.300.105 **VIOLATIONS**

9.300.105.1 Unlawful act.

It shall be unlawful for any *person*, firm or corporation to erect, construct, alter, repair, remove, demolish or utilize any plumbing system, or cause same to be done, in conflict with or in violation of any of the provisions of this chapter.

9.300.105.2 Notice of violation.

The *building official* shall serve a notice of violation or order to the person responsible for the erection, installation, alteration, extension, repair, removal or demolition of plumbing work in violation of the provisions of this chapter, or in violation of a detail statement or the *approved* construction documents thereunder, or in violation of a permit or certificate issued under the provisions of this chapter. Such order shall direct the discontinuance of the illegal action or condition and the abatement of the violation.

9.300.105.3 Prosecution of violation.

Any person failing to comply with a notice of violation or order, served in accordance with Section 9.300.104, shall be deemed guilty of a misdemeanor or civil infraction as determined by this jurisdiction, and the violation shall be deemed a strict liability offense. If the notice of violation is not complied with, the *building official* shall institute the appropriate proceeding at law or in equity to restrain, correct, or abate such violation, or to require the removal or termination of the unlawful condition in violation of the provisions of this chapter or of the order or direction made pursuant thereto. Any action taken by this jurisdiction on such premises shall be charged against the real estate upon which the violation is located and shall be a lien upon such real estate.

9.300.105.4 Violation; penalties.

Any person, firm, or corporation who violates a provision of this chapter or fails to comply with any order made thereunder, and from which no appeal has been taken, or who shall fail to comply with such order affirmed or modified by the Uniform Code Board of Appeals, or by a court of competent jurisdiction, within the time fixed herein, shall severally, for each such violation and noncompliance respectively, be guilty of a misdemeanor, punishable as provided in Section 1.100.140 of the City of Gladstone, Clay County, Missouri's Code of Ordinances. The imposition of one (1) penalty for any violation shall not excuse the violation, or permit it to continue; and all such person, firm, or corporation shall be required to correct or remedy such violations or defects within a reasonable time; and when not otherwise specified, each day that a prohibited condition is maintained shall constitute a separate offense.

SECTION 9.300.106 **APPEALS**

9.300.106.1 General.

In order to hear and decide appeals of orders, decisions, or determinations made by the *building official* relative to the application and interpretation of this chapter; the Code Board of Appeals is hereby authorized to conduct said appeals.

9.300.106.2 Application for appeal.

Persons directly affected by a decision of the *building official* or a notice issued under this chapter shall have the right to appeal to the Uniform Code Board of Appeals, provided that a written application is filed on a form furnished by the Community Development Department for that purpose. The application for appeal shall be submitted to the *building official* within ten (10) days of orders, decisions, or determinations therefore made by the *building official*.

9.300.106.3 Authority on appeals.

See Title I, Chapter 110, Article 4 of the City of Gladstone's Code of Ordinances.

DIVISION 2 DEFINITIONS

SECTION 9.300.201 GENERAL

9.300.201.1 Scope.

Unless otherwise expressly stated, the following words and terms shall, for the purpose of this chapter, have the meaning shown in this division.

9.300.201.2 Interchangeability.

Words used in the present tense include the future; words stated in the masculine gender include the feminine and neuter; the singular number includes the plural and the plural the singular.

9.300.201.3 Terms defined in other codes.

Where terms are not defined in this chapter and are defined in other International Codes as adopted by the jurisdiction, such terms shall have the meanings ascribed to them as in those codes.

9.300.201.4 Terms not defined.

Where terms are not defined through the methods authorized by this section, such terms shall have ordinarily accepted meanings such as the context implies.

SECTION 9.300.040202 GENERAL DEFINITIONS

~~The following words, terms and phrases, when used in this chapter, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning. Where terms are not defined in this chapter and are defined in the plumbing code, such terms shall have the meanings ascribed to them as in that code. Where terms are not defined through the methods authorized by this chapter, such terms shall have ordinarily accepted meanings as the context implies.~~

AIR GAP (Water distribution system). ~~means~~ The unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet supplying water to a tank, *plumbing fixture*, or other device and the *flood level rim* of the receptacle.

ANTISIPHON. ~~is~~ A term applied to valves or mechanical devices that eliminate siphonage.

Approved. Acceptable to the *building official*.

~~*Auxiliary intake* means any piping, connection, or device whereby water may be secured from a source other than the primary source.~~

~~Auxiliary water supply means any water source or system, other than the public water supply, that may be available in the building or premises.~~

BACKFLOW. ~~means the undesirable reversal of flow of water or mixtures of water and other liquids, gases or other substances into the public water system from any source.~~ Pressure created by any means in the water distribution system which by being in excess of the pressure in the water supply mains causes a potential backflow condition.

~~—— (1) Backpressure means pressure created by any means in the water distribution system, which by being in excess of the pressure in the water supply mains causes a potential backflow condition.~~

~~—— (2) Backsiphonage, low head, means a pressure less than or equal to 4.33 psi (29.88 kPa) or the pressure exerted by a ten-foot (3,048 mm) column of water.~~

~~—— (3) Backsiphonage means the backflow of potentially contaminated water into the potable water system as a result of the pressure in the potable water system falling below atmospheric pressure of the plumbing fixtures, pools, tanks or vats connected to the potable water distribution piping.~~

~~—— (4) Water supply system means the flow of water or other liquids, mixtures or substances into the distribution pipes of a potable water supply from any source except the intended source.~~

BACKFLOW CONNECTION. ~~means~~ Any arrangement whereby backflow is possible.

~~Backflow hazard means any facility which, because of the nature and extent of activities on the premises or the materials used in connection with the activities or stored on the premises, would present an immediate or potential health hazard to customers of the public water system or would threaten to degrade the water quality of the public water system, should backflow occur.~~

~~—— (1) Class I backflow hazard means a backflow hazard which presents an immediate or potential health hazard to customers of the public water system should backflow occur.~~

~~—— (2) Class II backflow hazard means a backflow hazard which would threaten to degrade the water quality of the public water system should backflow occur.~~

BACKFLOW PREVENTER. ~~Means A device or means to prevent~~ backflow prevention assembly, a backflow prevention device, or any other means or methods to prevent backflow into the potable water supply.

~~Backflow prevention assembly means an assembly that has been investigated and approved by the state department of natural resources (DNR).~~

~~—— (1) Air gap separation means a physical separation between the free-flowing discharge end of a public water system pipeline and an open or non-pressurized receiving vessel. An approved air gap separation shall be at least twice the diameter of the system pipe measured vertically above the overflow rim of the vessel; in no case shall the distance be less than one inch (25 mm).~~

~~(2) Double checkvalve assembly means an assembly composed of two single, independently acting, internally loaded, approved checkvalves including tightly closing shutoff valves located at each end of the assembly and fitted with properly located test cocks.~~

~~(3) Reduced pressure principle backflow prevention assembly means a device containing two independently acting, internally loaded, approved checkvalves together with a hydraulically operating, mechanically independent pressure relief valve located between the checkvalves and at the same time below the first checkvalve. The unit shall include properly located test cocks and tightly closing shutoff valves at each end of the assembly.~~

~~Backflow prevention assembly tester, certified, means any person who has satisfactorily completed a written and performance (hands on) examination (including questions specific to Missouri backflow prevention rules) provided by the American Backflow Prevention Association (ABPA) Tester Certification Program or the American Society of Sanitary Engineering (ASSE), and ensures that ABPA or ASSE notifies the state department of natural resources (DNR) that the tester has passed the examination.~~

~~Bathroom means a room containing plumbing fixtures including a bathtub or shower.~~

~~Boiler room means any room containing a steam or hot water boiler.~~

BUILDING. ~~means~~ Any structure ~~used~~ utilized or intended for supporting or sheltering any ~~use or~~ occupancy.

BUILDING OFFICIAL. ~~means~~ The official who is charged with the administration and enforcement of this chapter, or any duly authorized representative.

~~**Cistern.** means a small covered tank for storing water for a home or farm. Generally, this tank stores rainwater to be utilized for purposes other than in the potable water supply, and such tank is placed underground in most cases.~~

~~City manager means the city manager or the city manager's authorized representative.~~

~~Consumer means the owner or person in control of any premises supplied by or in any manner connected to the public water system of the city.~~

~~Containment means the protection of the public water supply by the installation of a backflow assembly or air gap on the main service line to a facility.~~

CONTAMINATION. ~~means~~ An impairment of the quality of the *potable water* which creates an actual hazard to the public health through poisoning or through the spread of disease by sewage, industrial fluids, or waste.

~~**Critical level (C-L).** means an elevation (height) reference point that determines the minimum height at which a backflow preventer or vacuum breaker is installed above the flood level rim of the fixture or receptor served by the device. The critical level is the elevation level below which there is a potential for backflow to occur. If the critical level marking is not indicated on the device, the bottom of the device shall constitute the critical level.~~

CROSS CONNECTION. ~~means~~ Any physical connection or arrangement between two otherwise separate piping systems, one of which contains *potable water* and the other either water of unknown or questionable safety or steam, gas or chemicals, whereby there exists the possibility for flow from one system to the other, with the direction of flow depending on the pressure differential between the two systems. (See "Backflow.")

~~*Customer* means any person who receives water from a public water system.~~

~~*Customer's authorized representative* means a person in control of any premises supplied by or in any manner connected to the public water system of the city.~~

~~*Customer water system* means all piping, fixtures and appurtenances, including auxiliary water systems, used by a customer to convey water on the customer's premises.~~

DOUBLE CHECK BACKFLOW PREVENTER. A backflow prevention device composed of two (2) single, independently acting, internally loaded, *approved check valves* including tightly closing shutoff valves located at each end of the device.

~~*Effective opening* means the minimum cross sectional area at the point of water supply discharge, measured or expressed in terms of the diameter of a circle or, if the opening is not circular, the diameter of a circle of equivalent cross-sectional area. For faucets and similar fittings, the effective opening shall be measured at the smallest orifice in the fitting body or in the supply piping to the fitting.~~

~~*Essentially nontoxic transfer fluids* means fluids having a Gosselin rating of 1, including: propylene glycol; mineral oil; polydimethylsiloxane; hydrochlorofluorocarbon, chlorofluorocarbon and hydrofluorocarbon refrigerants; and FDA approved boiler water additives for steam boilers.~~

~~*Essentially toxic transfer fluids* means soil, waste or gray water and fluids having a Gosselin rating of 2 or more, including ethylene glycol, hydrocarbon oils, ammonia refrigerants and hydrazine.~~

~~*Facility* means something that is built, constructed, installed, or established to perform some particular function.~~

~~*Faucet* means a valve end of a water pipe by means of which water is drawn from or held within the pipe.~~

~~Fixture. See "Plumbing fixture."~~

~~Fixture fitting.—~~

~~Supply fitting means a fitting that controls the volume and/or direction flow of water and is either attached to or accessible from a fixture, or is used with an open or atmospheric discharge.~~

~~Fixture supply means the water supply pipe connecting a fixture to a branch water supply pipe or directly to a main water supply pipe.~~

FLOOD LEVEL RIM. means The edge of the receptacle from which water overflows.

~~Flow pressure means the pressure in the water supply pipe near the faucet or water outlet while the faucet or water outlet is wide open and flowing.~~

~~Flushometer valve means a valve attached to a pressurized water supply pipe and so designed that when activated it opens the line for direct flow into the fixture at a rate and quantity to operate the fixture properly, and then gradually closes to reseal fixture traps and avoid water hammer.~~

~~Free water surface means a water surface that is at atmospheric pressure.~~

~~Frostproof closet means a hopper with no water in the bowl and with the trap and water supply control valve located below frost line.~~

~~Hot water means water at a temperature greater than or equal to 110 degrees Fahrenheit (43 degrees Celsius).~~

~~Hot water heating boiler means a boiler having a volume exceeding 120 gallons (454.2 L), or a heat input exceeding 200,000 Btu/h (149,540 kW), or an operating temperature exceeding 210 degrees Fahrenheit (99 degrees Celsius) that provides hot water to be used externally to itself.~~

Individual water supply. means a water supply except an approved public water supply that serves one or more families.

~~Isolation means the protection of a facility service line by installing a backflow assembly, device or air gap on an individual fixture, appurtenance or system.~~

~~Low pressure hot water heating boiler means a boiler furnishing hot water at pressures not exceeding 160 psi (1,102.4 kPa) and at temperatures not exceeding 250 degrees Fahrenheit (121 degrees Celsius).~~

~~Low-pressure steam-heating boiler means a boiler furnishing steam at pressures not exceeding 15 psi (103.4 kPa).~~

~~**Nonpotable water.** means water not safe for drinking, personal, or culinary utilization.~~

~~**Occupancy.** means the purpose for which a building or portion thereof is utilized or occupied.~~

~~**Occupant** means any individual living or sleeping in a building, or having possession of a space within a building.~~

~~**Operator** means any person who has charge, care or control of a structure or premises which is let or offered for occupancy.~~

OWNER. ~~means~~ Any person, agent, operator, firm, or corporation having legal or equitable interest in the property; or recorded in the official records of the state, county or municipality as holding title to the property; or otherwise having control of the property, including the guardian of the estate of any such person, and the executor or administrator of the estate of such person if ordered to take possession of real property by a court.

PERSON. ~~means~~ An individual, heirs, executors, administrators or assigns, and also includes, firms, corporation, partnership or corporation, its or their successors or assigns, or the agent of any of the aforesaid ~~other group acting as a unit.~~

PLUMBING. ~~means~~ The practice, materials, and fixtures utilized in the installation, maintenance, extension and alteration of all piping, fixtures, plumbing appliances and plumbing appurtenances, within or adjacent to any structure, in connection with sanitary drainage or storm drainage facilities; venting systems; and public or private water systems.

~~**Plumbing appliance** means any one of a special class of plumbing fixtures intended to perform a special function. Included are fixtures having the operation or control dependent on one or more energized components, such as motors, controls, heating elements, or pressure or temperature-sensing elements. Such fixtures are manually adjusted or controlled by the owner or operator, or are operated automatically through one or more of the following actions: a time cycle, a temperature range, a pressure range, a measured volume or weight.~~

~~**Plumbing appurtenance** means a manufactured device, a prefabricated assembly or an on-the-job assembly of component parts that is an adjunct to the basic piping system and plumbing fixtures. An appurtenance demands no additional water supply and does not add any discharge load to a fixture or to the drainage system.~~

~~**Plumbing code.** means the International Plumbing Code promulgated by the International Code Council, as adopted by this jurisdiction.~~

PLUMBING FIXTURE. ~~means~~ A receptacle or device that is ~~either permanently or temporarily~~ connected to the water ~~distribution~~ supply system ~~of the premises and demands a supply of water therefrom; or~~ discharges ~~wastewater, liquid-borne waste materials or sewage either directly or indirectly to the~~ a drainage system ~~of the premises; or requires both. Such receptacles or devices require a~~ water supply of water; or discharge liquid waste or liquid-borne solid waste; or require a supply of water connection and a discharge to the waste to a drainage system ~~of the premises.~~

PLUMBING SYSTEM. ~~means~~ A system that includes the water ~~supply and~~ distribution pipes; plumbing fixtures and traps; water-treating or water-using equipment; soil waste and vent pipes; ~~and sanitary and storm sewers~~ and building drains; in addition to their respective connections, devices and appurtenances within a structure or premises; ~~and the water service, building sewer and building storm sewer serving such structures or premises.~~

POLLUTION. ~~(pollutant) means~~ An impairment of the quality of the *potable 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 *potable waters* ~~from~~ for domestic use.

POTABLE WATER. ~~means~~ Water free from impurities present in amounts sufficient to cause disease or harmful physiological effects and conforming in bacteriological and chemical quality to the requirements of the Public Health Service Drinking Standards or the regulations of the public health authority having jurisdiction.

PREMISES. A lot, plot, or parcel of land, easement, or public way, including any structures thereon.

~~*Private.* In the classification of plumbing fixtures, the term "private" applies to fixtures in residences and apartments, and to fixtures in nonpublic toilet rooms of hotels and motels and similar installations in buildings where the plumbing fixtures are intended for utilization by a family or an individual.~~

~~*Public or public utilization.* In the classification of plumbing fixtures, the term "public" applies to fixtures in general toilet rooms of schools, gymnasiums, hotels, airports, bus and railroad stations, public buildings, bars, public comfort stations, office buildings, stadiums, stores, restaurants, and other installations where a number of fixtures are installed so that their utilization is similarly unrestricted.~~

~~*Public water main.* See "Water main."~~

PREMISES. ~~means~~ a lot, plot or parcel of land, easement or public way, including any structures thereon.

~~*Property.* See "Premises."~~

~~Quick-closing valve means a valve or faucet which closes automatically when released manually, or which is controlled by a mechanical means for fast-action closing.~~

REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER. means A backflow prevention assembly consisting of two (2) independently acting ~~checkvalves~~ 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 between two (2) tightly closing shutoff valves and with means for testing for tightness of the checks and opening of relief means.

~~Relief valve.—~~

~~—— (1) Pressure relief valve means a pressure-actuated valve held closed by a spring or other means and designed to relieve pressure automatically at the pressure at which such valve is set.~~

~~—— (2) Temperature and pressure relief (T&P) valve means a combination relief valve designed to function as both a temperature relief and pressure relief valve.~~

~~—— (3) Temperature relief valve means a temperature-actuated valve designed to discharge automatically at the temperature at which such valve is set.~~

~~Restroom means a room containing a water closet or urinal but not a bathtub or shower.~~

~~Rim means an unobstructed open edge of a fixture.~~

~~Riser. See "Water pipe, riser."~~

~~Secondary contaminant levels means those contaminant levels established by the state department of natural resources (DNR) for contaminants which may affect the taste, odor, color, staining and scale-forming tendencies of water.~~

~~Service connection means any water line or pipe connected to a water distribution main or pipe for the purpose of conveying water to a point of use.~~

~~Structure means that which is built or constructed, an edifice or building of any kind, or any piece of work artificially built up or composed of parts joined together in some definite manner.~~

~~Supplier of water means any person who owns, controls, and/or operates a public water main.~~

~~Swimming pool means any structure, basin, chamber or tank containing an artificial body of water for swimming, diving or recreational bathing having a depth of two feet (610 mm) or more at any point.~~

~~Tempered water means water ranging in temperature from 85 degrees Fahrenheit (29 degrees Celsius) to 110 degrees Fahrenheit (43 degrees Celsius).~~

~~Tenant means a person, corporation, partnership or group, whether or not the legal owner of record, occupying a building or portion thereof as a unit.~~

~~Third-party certification agency means an approved agency operating a product or material certification system that incorporates initial product testing, assessment and surveillance of a manufacturer's quality control system.~~

~~Third-party certified means certification obtained by the manufacturer indicating that the function and performance characteristics of a product or material have been determined by testing and ongoing surveillance by an approved third party certifications agency. Acceptation of certification is in the form of identification in accordance with the requirements of the third party certification agency.~~

~~Third-party tested means a procedure by which an approved testing laboratory provides documentation that a product, material or system conforms to specified requirements.~~

~~Treated water means water which is handled or processed in any manner to change the physical, chemical, biological or radiological content and includes water exposed to the atmosphere by aeration.~~

~~Toilet room means a room containing a water closet or urinal but not a bathtub or shower.~~

VACUUM. means Any **absolute** pressure less than that exerted by the atmosphere.

VACUUM BREAKER. means A type of *backflow preventer* installed on openings subject to normal atmospheric pressure ~~and which~~ that prevents backflow by admitting atmospheric pressure through ports to the discharge side of the device.

~~Water hammer arrestor means a device utilized to absorb the pressure surge (water hammer) that occurs when water flow is suddenly stopped in a water supply system.~~

~~Water heater means any heating appliance or equipment that heats potable water and supplies such water to the potable hot water distribution system.~~

WATER MAIN. means A water supply pipe or system of pipes, installed and maintained by a city, township, county, public utility company or other public entity, on public property, in the street or in an *approved* dedicated easement of public or community use.

~~Water outlet means A discharge opening through which water is supplied to a fixture, into the atmosphere (except into an open tank which is part of the water supply system), to a boiler or heating system, or to any devices or equipment requiring water to operate but which are not part of the plumbing system.~~

~~Water pipe.—~~

- ~~(1) Riser means a water supply pipe that extends one full story or more to convey water to branches or to a group of fixtures.—~~
- ~~(2) Water distribution pipe (line) means a pipe within the structure or on the premises which conveys water from the water service pipe, or from the meter when the meter is at the structure, to the points of utilization.—~~
- ~~(3) Water service pipe (line) means the pipe from the water main or other source of potable water supply, or from the meter when the meter is at the public right-of-way, to the water distribution system of the building served.—~~

WATER SUPPLY SYSTEM. ~~means~~ The water service pipe, the water-distributing pipes, and the necessary connection pipes, fittings, control valves, and all appurtenances in or adjacent to the structure or *premises*.

~~Water system means all sources from which water is derived for drinking or domestic use by the public, also all structures, conduits and appurtenances by means of which water for such use is treated, stored or delivered to consumers, except service connections from water distribution systems to buildings and plumbing within or in connection with buildings served.—~~

- ~~(1) Water supply source means all sources of water supply including wells, springs, reservoirs, lakes, streams or rivers from which water is derived for public water systems, including the structures, conduits, pumps and appurtenances used to withdraw water from the source or to store or transport water to the water treatment facility or water distributions system.—~~
- ~~(2) Water treatment facility means a facility which uses specific processes such as sedimentation, coagulation, filtration, disinfection, aeration, oxidation, ion exchange, fluoridation or other processes which serve to add, alter or remove contaminants from a water supply source.—~~
- ~~(3) Water distribution system means all piping, conduits, valves, hydrants, storage facilities, pumps and other appurtenances, excluding service connections, which serve to deliver water from a water treatment plant or water supply source to the public.—~~

~~Well.—~~

- ~~(1) Bored means a well constructed by boring a hole in the ground with an auger, and installing a casing.—~~
- ~~(2) Drilled means a well constructed by making a hole in the ground with a drilling machine of any type, and installing a casing and screen.—~~
- ~~(3) Driven means a well constructed by driving a pipe in the ground. The drive pipe is usually fitted with a well point and screen.—~~
- ~~(4) Dug means a well constructed by excavating a large diameter shaft and installing a casing.—~~

~~Sec. 9.300.050. Cross connections prohibited.~~

~~No water service connection shall be installed or maintained at any building or premises where actual or potential cross connections to the public water supply system exist, unless such actual or potential cross connections are protected by an approved backflow prevention assembly.~~

~~Sec. 9.300.060. Survey and inspection.~~

~~When it is necessary to make a survey and/or inspection to enforce the provisions of this chapter, or when the building official has reasonable cause to believe that there exists in a building or upon a premises a condition which is contrary to or in violation of this chapter, the building official may enter the building or premises at all reasonable times to survey and/or inspect or to perform the duties imposed by this chapter. If such building or premises is occupied, the building official shall present credentials to the occupant and request entry. If such building or premises is unoccupied, the building official shall make a reasonable effort to locate the owner or other person having charge or control of the building or premises and request entry. If entry is refused, the building official shall have recourse to the remedies provided by law to secure entry.~~

DIVISION 3 BACKFLOW CONTROL BY CONTAINMENT

SECTION 9.300.301 CROSS CONNECTION

~~Sec. 9.300.050~~301.1. ~~Cross-connections~~ Prohibited.

No water service connection shall be installed or maintained at any *building* or *premises* where actual or potential *cross connections* to the ~~public~~ water supply system exist, unless such actual or potential *cross connections* are protected by an *approved backflow prevention assembly preventer*.

SECTION 9.300.070302. **BACKFLOW ~~control by containment.~~ HAZARDS**

~~(a)~~ 9.300.302.1 Class I ~~backflow~~ hazards.

A Class I backflow hazard presents an actual or potential health hazard to customers of the *water main and public water supply* system should *backflow* occur. The customer or the customer's authorized representative shall construct a State *of* Missouri Department of Natural Resources (DNR) *approved* air gap *separation* or install a *reduced pressure principle backflow prevention assembly preventer* on the customer's water service line, in accordance with Sections ~~9.300.090~~402 and ~~9.300.100~~, when:

1. An actual or potential Class I ~~backflow~~ hazard exists at any *facility building or premises*;
2. Modification is made to the customer's water system at an existing facility which is designated an actual or potential *backflow* hazard in ~~subsection (b)~~ *Section 9.300.302.2 of this section*. If an addition or modification requiring a separate customer water service line is made to an existing *facility building or premises*, the new water service line, as well as the existing customer's water service line, shall be equipped with a DNR *approved backflow prevention assembly preventer*;
3. A new customer water service line connection is made to a *facility building or premises* listed in ~~subsection (b)~~ *Section 9.300.302.2 of this section*; or
4. *A backflow* incident occurs which introduces a contaminant into the public or customer water system which may create a health hazard.

~~(b)~~ 9.300.302.2 Class I ~~hazard~~ types. The following is a list, not all inclusive, of actual or potential Class I backflow hazards:

1. Aircraft and missile manufacturing plants;

2. Automotive plants including, but not limited to, those plants which manufacture motorcycles, automobiles, trucks, recreational vehicles and construction and agricultural equipment;
3. *Potable water* dispensing stations which are serviced by a public water system;
4. Beverage bottling plants including, but not limited to, dairies, soft drink bottlers and breweries;
5. Canneries, packinghouses and reduction plants;
6. Car washes;
7. Chemical, biological and radiological laboratories including, but not limited to, those in high schools, trade schools, colleges, universities and research institutions;
8. Hospitals, clinics, medical buildings, autopsy facilities, morgues, mortuaries, veterinary facilities, dental clinics and other medical facilities;
9. Metal or plastic manufacturing, fabrication, cleaning, plating or processing facilities;
10. Plants manufacturing paper and paper products;
11. Plants manufacturing, refining, compounding or processing fertilizer, film, herbicides, natural or synthetic rubber, pesticides, petroleum or petroleum products, pharmaceuticals, radiological materials or any chemical which would be a contaminant to the public water system;
12. Commercial facilities that use herbicides, pesticides, fertilizers or any chemical which would be a contaminant to the public water system;
13. Plants processing, blending or refining animal, vegetable or mineral oils;
14. Commercial laundries and dye works;
15. Sewage, stormwater and industrial waste treatment plants and pumping stations;
16. Waterfront facilities including piers, docks, marinas and shipyards;
17. Industrial facilities which recycle water;
18. Restricted or classified facilities or other facilities closed to the city or DNR;
19. Fire sprinkler systems using any chemical additives;

20. Auxiliary water systems, including but not limited to alternative water sources;
21. Irrigation systems with facilities for injection of pesticides, herbicides or other chemicals or with provisions for creating backpressure. The *backflow assembly preventer* may be installed between the customer's water service line and the irrigation system;
22. Portable tanks for transporting water taken from a public water system;
23. Facilities which have pumped or repressurized cooling or heating systems that are served by a public water system; and
24. Facilities which contain any boiler system and are served by a public water system. The *backflow assembly preventer* may be installed on the water service line to the boiler.

(e) 9.300.302.3 Class II ~~backflow hazards~~.

A Class II backflow hazard threatens to degrade the water quality of the public water system should backflow occur. The customer or the customer's authorized representative shall install, as minimum protection for Class II backflow hazards, a State of Missouri Department of Natural Resources (DNR) *approved double check valve assembly backflow preventer* on the customer ~~water~~ service line in accordance with sections 9.300.~~090~~402 and ~~9.300.100~~, when:

1. An actual or potential Class II backflow hazard exists at any ~~facility~~ *building or premises*;
2. Modification is made to the customer's water system at an existing ~~facility building or premises~~ which is designated an actual or potential backflow hazard in ~~subsection (d) Section 9.300.302.4 of this section~~. If an addition or modification requiring a separate customer water service line is made to an existing facility, the new water service line, as well as the existing customer's water service line, shall be equipped with a DNR *approved backflow prevention assembly preventer*;
3. A new customer water service line connection is made to a new ~~facility building or premises~~ listed in ~~subsection (d) Section 9.300.302.4 of this section~~; or
4. A *backflow* incident occurs in any situation described in ~~subsection (d) or (e) Section 9.300.302.4 or Section 9.300.302.5 of this section~~.

(d) 9.300.302.4 Class II ~~hazard~~ types.

The following is a list, not all inclusive, of actual or potential Class II backflow hazards:

1. Tanks to store water from the public water system for firefighting only, unless the tanks meet the requirements of DNR for construction to maintain bacteriological quality of the water;

2. Fire sprinkler systems not using chemical additives. This only applies to new fire sprinkler systems or fire sprinkler systems scheduled for modifications;
3. Irrigation systems without facilities for injections of pesticides, herbicides or other chemicals. The *backflow assembly preventer* may be installed between the customer's ~~water~~ service line and the irrigation system; and
4. *Cross connections* that could permit introduction of contaminants into the public or customer water system and create a nuisance, be aesthetically objectionable or cause minor damage to the public water system or its appurtenances.

(e) 9.300.302.5 Designating Class I or II ~~backflow hazards~~.

Customer ~~facilities~~ *buildings or premises* not designated a backflow hazard by ~~subsection (b) or (d) Section 9.300.302.2 and 9.300.302.4 of this section~~ may be designated a Class I or Class II backflow hazard by written notification from the *city supplier of water* or ~~the state department of natural resources~~ (DNR) to the customer. The notice shall specify the nature of the customer's activity which necessitates designation of the *facility building or premises* as a backflow hazard, the type of backflow protection required and the date by which the customer shall install or construct this *assembly backflow preventer* on the customer's ~~water~~ service line to the *facility building or premises*.

~~Sec. 9.300.080~~302.6. Approved backflow ~~prevention assemblies~~ *preventers*.

The following are types of *backflow preventers* approved by DNR:

(a) 9.300.302.6.1 List of approved assemblies.

~~The state department of natural resources (DNR)~~ maintains a current list of *approved backflow prevention assemblies preventers*.

(b) 9.300.302.6.2 Air gaps.

The discharge pipe of an *approved air gap* shall terminate a minimum of two (2) pipe diameters of the discharge pipe above the *flood level rim* of the receiving vessel; in no case shall the distance be less than one (1) inch ~~(25.4 mm)~~.

(c) 9.300.30.6.3 Double check ~~valve~~ and reduced pressure principle ~~assemblies~~.

Only those models of *double check valve assemblies backflow preventers* and *reduced pressure principle backflow prevention assemblies preventers* which are *approved* by the Foundation of Cross Connection Control and Hydraulic Research of the University of Southern California and are on the *approved* list maintained by DNR are acceptable.

DIVISION 4 INSTALLATION, TESTING, SURVEY AND INSPECTION

SECTION 9.300.~~060~~401 **SURVEY AND INSPECTION**

9.300.401.1 General.

When it is necessary to make a survey and/or inspection to enforce the provisions of this chapter, or when the *building official* has reasonable cause to believe that there exists in a building or upon a premises a condition which is contrary to or in violation of this chapter, the building official may enter the building or premises at all reasonable times to survey and/or inspector to perform the duties imposed by this chapter. If such building or premises is occupied, the building official shall present credentials to the occupant and request entry. If such building or premises is unoccupied, the building official shall make a reasonable effort to locate the owner or other person having charge or control of the building or premises and request entry. If entry is refused, the building official shall have recourse to the remedies provided by law to secure entry

SECTION 9.300.402 **CONSTRUCTION AND INSTALLATION**

Sec. 9.300.~~090~~402.1. Standards of construction and installation.

Backflow preventers shall be installed in accordance with Sections 9.300.402.1.1 through 9.300.402.1.4

(a) 9.300.402.1.1 Installation location.

Backflow ~~prevention assemblies~~ preventers shall be installed on the customer water system as close as possible to the point of service connection and prior to any other connection or branch line. If it is not possible to install the *backflow prevention assembly preventer* as described, then installation shall be at the approval of the ~~state~~ Missouri department of Natural Resources (DNR).

(b) 9.300.402.1.2 Reduced pressure principle backflow preventer.

Reduced pressure principle backflow ~~prevention assemblies~~ preventer shall be installed with no plug or additional piping affixed to the pressure differential relief valve port (except for specifically designed funnel apparatus available from the manufacturer) and with the pressure differential relief valve port a minimum of 12 inches ~~(304.8 mm)~~ above floor level. Additionally, the ~~assembly~~ backflow preventer shall be installed at a location where any leakage from the pressure differential relief valve port will be noticed, that allows easy access to the ~~assembly~~ backflow preventer for maintenance and testing, and that will not subject the ~~assembly~~ backflow preventer to excessive heat or freezing.

(c) 9.300.402.1.3 Double check ~~valve assembly~~ backflow preventer.

All double check ~~valve-assemblies~~ backflow preventers shall be installed at a location that allows easy access to the ~~assembly~~ backflow preventer for maintenance and testing and that will not subject the ~~assembly~~ backflow preventer to excessive heat or freezing.

(d) 9.300.402.1.4 Bypass.

No bypass piping shall be allowed around a backflow ~~prevention-assembly~~ backflow preventer unless the bypass is equipped with the same degree of backflow prevention protection.

~~Sec. 9.300.100~~402.2. Backflow prevention-assembly preventer testing and inspection.
Backflow preventers shall be tested and inspected in accordance with Sections 9.300.402.2.1 through 9.300.402.2.5.

(a) 9.300.402.2.1 Generally.

~~All Backflow prevention-assemblies~~ preventers shall be inspected and tested by testers certified in accordance with ~~the requirements and procedures set forth by the state department of natural resources~~ DNR's requirements and procedures set forth in 10 CSR 60-11.030.

(b) 9.300.402.2.2 Air gaps.

Air gaps shall be inspected each year by a date which is no later than 30 days past the anniversary date established by the City of Gladstone to ensure that they continue to meet the requirements of Section 9.~~700.080(b)~~300.302.6.2.

(c) 9.300.402.2.3 Reduced pressure principle ~~assemblies~~ backflow preventers.

Reduced pressure principle backflow ~~prevention-assemblies~~ preventers shall be tested by a certified backflow prevention assembly tester each year by a date which is no later than 30 days past the anniversary date established by the City of Gladstone to ensure that:

1. The pressure differential relief valve operates to maintain the zone between the two (2) check valves at least two pounds per square inch (2.0 psi) (13.79 kPa) less than the supply pressure;
2. The #2 check valve is leak tight against reverse flow under all pressure differentials; and
3. The static pressure drop across the #1 check valve is at least three pounds per square inch (3.0 psi) (20.68 kPa) greater than the pressure differential between the supply pressure and the pressure in the zone required to open the pressure differential relief value.

(d) 9.300.402.2.4 Double check ~~valve assemblies~~ backflow preventers.

~~Double check valve assemblies~~ backflow preventers shall be tested each year by a certified backflow prevention assembly tester by a date which is no later than 30 days past the anniversary date established by the City of Gladstone to ensure that the #1 and #2 check valves maintain at least one pound per square inch (1.0 psi) ~~(6.89 kPa)~~ differential in the direction of flow and are leak-tight against reverse flow under all pressure differentials.

(e) 9.300.402.2.5 Test reports.

All certified backflow prevention assembly testers shall report to the City of Gladstone, to the customer, and, if requested, to DNR the results of inspections or tests conducted in compliance with this ~~section~~ chapter. Reports of tests shall contain the signature of the certified backflow prevention assembly tester attesting to the compliance (or noncompliance) of the assembly with established operational requirements. Routine reports shall be submitted within thirty (30) days after making the inspection or test.

SECTION 9.300.~~403~~403
CUSTOMER RESPONSIBILITIES

(a) 9.300.403.1 Generally.

The customer shall furnish, install, and maintain in working order at all times, any ~~backflow prevention assembly~~ preventer required by this chapter.

(b) 9.300.403.2 Inspections and tests.

To ensure that each ~~backflow prevention assembly~~ preventer required by this chapter is in working order, the customer shall have each ~~assembly~~ backflow preventer inspected and tested by a certified backflow prevention assembly tester at the time of construction or installation and at the frequency specified in section 9.300.~~400~~402.2.

(c) 9.300.403.3 Access.

The customer shall permit access to the *premises* by the certified backflow prevention assembly tester, the City *building official* and ~~state~~ Missouri Department of Natural Resources (DNR) representatives, at reasonable times and upon presentation of identification, for inspection of the customer's water system or testing of ~~backflow prevention assemblies~~ preventer installed in accordance with this chapter.

SECTION 9.300.404
CITY'S RESPONSIBILITIES

~~Sec. 9.300.120~~404.1. Water purveyor's responsibilities; Removal of water meter.

Because *backflow* may cause a health hazard through transmission of contaminants via the water supply system, the City shall remove the water meter or otherwise sever the water main and water supply system from the customer's water service line serving a ~~facility~~ building or premises when the City:

1. Has knowledge that the customer is causing or maintaining an unprotected cross connection;
2. Has knowledge that the customer is failing or refusing to proceed without delay to correct any violation of the provisions of this chapter after having been notified to do so; or
3. Is so ordered by the ~~state~~ Missouri Department of Natural Resources (DNR).

9.300.404.2 Record retention.

The City shall retain records of the reports of inspections, tests, and repairs on backflow prevention assemblies for a period of five (5) years.

9.300.404.3 Recording initial inspection or test.

The City shall record the date of the initial inspection or test of backflow preventers required under Section 9.300.302 and shall require that an annual inspection or test report be submitted by a certified backflow prevention assembly tester. The City shall establish an annual anniversary date for these inspections or test reports. If these reports are not received by the City on or before sixty (60) days following this anniversary date, the City shall notify the customer and DNR.

9.300.404.4 Notification.

The City shall notify DNR within forty-eight (48) hours whenever a cross-connection problem has occurred which resulted in *contamination* of the *water main* and *water supply system*.

Sec. 9.300.130. Violations.

~~(a) *Unlawful acts.* It shall be unlawful for any person, firm or corporation to install, alter, repair, move, remove or tamper with any backflow assembly regulated by this chapter, or cause same to be done, in conflict with or in violation of the provisions of this chapter.~~

~~(b) *Violation; penalties.* Any person who violates a provision of this chapter or fails to comply with any order made thereunder shall have such person's water meter removed or the city shall otherwise sever the water service line, serving the facility in violation, from the water supply system.~~