ORDINANCE NO.

AN ORDINANCE REPEALING AND REPLACING CITY CODE CHAPTER 15-1 (*CROSS-CONNECTION REGULATIONS*) TO ADOPT REGULATIONS TO PREVENT CONTAMINATION OF DRINKING WATER BY ESTABLISHING REQUIREMENTS FOR BACKFLOW PREVENTION ASSEMBLIES AND BACKFLOW PREVENTION DEVICES AND ASSOCIATED TESTING REQUIREMENTS; ESTABLISHING CUSTOMER DUTIES FOR BACKFLOW PREVENTION ASSEMBLIES AND BACKFLOW PREVENTION DEVICES; REQUIRING IDENTIFICATION OF POTABLE AND NON-POTABLE WATER SYSTEMS; CREATING REQUIREMENTS FOR TESTERS ; CREATING OFFENSES; AND CONTAINING OTHER PROVISIONS RELATED THERETO.

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF AUSTIN:

PART 1. City Code Chapter 15-1 *(Cross-Connection Regulations)* is repealed and replaced to read as follows:

CHAPTER 15-1. CROSS-CONNECTION REGULATIONS

ARTICLE 1. GENERAL PROVISIONS.

§ 15-1-1 APPLICABILITY.

This chapter applies to a person or public water system receiving potable water from the City.

§ 15-1-2 DEFINITIONS.

In this chapter:

(1) AIR GAP means the unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet conveying water to the flood level rim of a tank, fixture, receptor, sink, or other appurtenance.

(2) ALTERNATE WATER SUPPLY or ALTERNATE WATER SOURCE means a water supply from a source other than the City's potable water supply.

(3) BACKSIPHONAGE means the flowing back of used, contaminated, or polluted water from a plumbing fixture or vessel into a water supply pipe due to a pressure less than atmospheric in such pipe.

(4) BACKFLOW means the flow of water or other liquids, mixtures, gases, or substances into the distribution pipes of a potable supply of water from sources other than its intended source.

(5) BACKFLOW PREVENTION ASSEMBLY means an aggregation of devices, as defined by the Manual of Cross-Connection Control, designed to prevent backflow into the potable water system or the public water system, including a reduced pressure principle backflow assembly, reduced pressure principle detector backflow prevention assembly type 1 and 2, double-check valve backflow prevention assembly, double check valve detector backflow prevention assembly type 1 and 2, pressure vacuum breaker assembly, or spill-resistant pressure vacuum breaker backflow prevention assembly.

(6) BACKFLOW PREVENTION DEVICE means a device designed to prevent backflow into the potable water system.

(7) BACKPRESSURE means hydraulic or atmospheric pressure higher than the supply pressure.

(8) COMMISSION means the Texas Commission on Environmental Quality.

(9) CONTAINMENT PROTECTION means an approved backflow prevention assembly or air gap installed on the customer's water supply line immediately downstream of the water meter.

(10) CONTAMINATION means an impairment of the quality of the potable water that creates an actual hazard to the public health through poisoning or through the spread of disease by sewage, industrial fluids, or waste. This includes high hazard or health hazard.

(11) CROSS-CONNECTION means a physical connection to a potable water system through which it is possible to introduce a health hazard or a non-health hazard.

(12) CUSTOMER means:

(a) an individual, partnership, association, firm, public or private corporation, governmental authority, or other legal entity that receives City utility service at a service address;

(b) an owner of property that is connected to the City's utility service at a service address, or

(c) a person who receives the benefit of the City's utility service.

(13) DIRECTOR means the director of Austin Water or their designee.

(14) FLOW-THROUGH means a hydraulic condition on sites with interconnected water service connections that results in any interconnected meter registering reverse flow.

(15) MANUAL OF CROSS-CONNECTION CONTROL means the latest edition of the University of Southern California's Manual of Cross-Connection Control.

(16) ONSITE WATER RESUSE SYSTEM means an onsite water reuse system that collects, treats and uses alternative water sources for non-potable uses at the building to district or neighborhood scale, generally at a location near the point of generation.

(17) PLUMBING SYSTEM means all:

(a) potable water, building supply, and distribution pipes;

(b) plumbing fixtures and traps;

(c) drainage and vent pipes; and

(d) building drains and building sewers, including their respective joints and connections, devices, receptors, and appurtenances within the property lines of the premises and includes potable water piping, alternate water source systems, irrigation systems, potable water treating or using equipment, medical gas and medical vacuum systems, liquid and fuel gas piping, and water heaters and vents for same.

(18) POLLUTION means a cross-connection or other situation involving any substance that generally will not be a health hazard, but will constitute a nuisance, or be aesthetically objectionable, if introduced into the potable drinking water supply. This includes a low hazard or non-health hazard.

(19) POTABLE ALTERNATE WATER SYSTEM means a plumbing system that has an alternate water as its source and meets the standard of potable water.

(20) POTABLE RAINWATER SYSTEM means a potable alternate water system that collects, stores, uses, and treats rainwater from a rooftop or other manmade aboveground collection surface and meets the standard of potable water.

(21) POTABLE WATER means water that complies with the rules of the Commission and Austin Public Health for human consumption and other domestic uses.

(22) PUBLIC WATER SYSTEM means a system for the provision of piped water for human consumption as defined in 30 T.A.C. Section 290.38 (*Definitions*).

(23) RECLAIMED WATER means domestic or municipal wastewater which has been treated to a quality suitable for a beneficial use, pursuant to the provisions of 30 T.A.C. Chapter 321 and other applicable rules and permits.

(24) SERVICE CONNECTION means the point of connection between the public water system and the customer's water system.

(25) SINGLE-CHECK VALVE means an independently acting internally loaded check valve.

(26) TESTABLE CHECK VALVE means a single check valve installed after the meter and property owner’s cut off valve with a test port installed between the check valve and the property owner’s cut off valve.

(27) TESTER means a person licensed by the State of Texas and registered with Austin Water as a backflow prevention assembly tester, customer service inspector, plumbing inspector or water supply protection specialist.

(28) USED WATER means water supplied by a public water system to a customer's water system that has passed through the service connection and is no longer under the control of the water purveyor.

(29) UTILITY means Austin Water.

§ 15-1-3 RULEMAKING.

The director may adopt rules under Chapter 1-2 (*Adoption of Rules*) to implement and interpret this chapter that are not in conflict with this chapter, the Plumbing Code, the Commission's rules and regulations for public water systems and applicable state and federal law.

§ 15-1-4 FEES.

Council shall set the fees authorized by this chapter by separate ordinance.

ARTICLE 2. CROSS CONNECTION CONTROL PROGRAM.

§ 15-1-11 CROSS CONNECTIONS PROHIBITED.

(A) A person shall not:

(1) install, maintain, or allow to exist a potable water supply, plumbing fixture, equipment, mechanism, or construction device that creates a cross-connection, or allows reclaimed, contaminated, or polluted water, mixtures or other substances, or gases, to enter the private or public potable water system by backsiphonage, backpressure, or other means;

(2) connect an alternate water supply to the City's public water system or a private plumbing system unless a backflow prevention assembly or air gap is installed as required by this chapter;

(3) use a chemical or substance that may cause pollution or contamination of the public or private potable water system without installing a backflow prevention assembly or backflow prevention device as required by this chapter;

(4) connect a reclaimed water system to the City's public water system or to the potable water system of a customer who receives potable water service from the City's public water system; or

(5) connect a vehicle or equipment capable of producing backsiphonage or backpressure without installing a backflow prevention assembly or device as required by this chapter.

(B) A person shall not install a backflow prevention assembly in a private plumbing system, fire protection system, process water system, irrigation system, or other water distribution system connected to the City's public water system unless:

(1) the assembly complies with Table 15-1-14-A;

(2) the assembly has been tested and listed as an approved backflow prevention assembly by the most recent listing from the University of Southern California Foundation for Cross Connection Control and Hydraulic Research; and

(3) the installation complies with this chapter and the Plumbing Code.

(C) A person shall not install a backflow prevention device unless the installation complies with this chapter and the Plumbing Code.

(D) A person shall not connect the public water system or a plumbing system to any other source of potable or non-potable water without approval by the director.

(E) The director may not install or authorize the installation of a permanent water or reclaimed water meter unless the customer's tester has submitted a test and maintenance report for each backflow prevention assembly installed on a site and all inspections are final as required by the Building Code.

(F) A person shall not use a backflow prevention assembly or backflow prevention device unless:

(1) the backflow prevention assembly or backflow prevention device was lawfully installed before April 21, 2025;

(2) the use, maintenance, or repair of the backflow prevention assembly or device is in accordance with the original design and location; and

(3) no hazard to life, health, or property has been created by such installation.

§ 15-1-12 CUSTOMER DUTIES.

(A) A customer shall install a new, replacement, or reconditioned backflow prevention assembly or backflow prevention device in accordance with this chapter and the Plumbing Code.

(B) A customer shall have a new, replacement, or reconditioned backflow prevention assembly tested upon installation by a tester.

(C) A customer shall maintain current contact information with Austin Water.

(D) Backflow prevention assemblies shall be tested in accordance with this subsection.

(1) A customer whose site has a backflow prevention assembly shall have a tester test the backflow prevention assembly at least once a year on or before the date established by the director if the backflow prevention assembly protects:

(a) the potable water against a health hazard; or

(b) the potable water against the following non-health hazards:

(i) building isolation;

(ii) fire hose cabinets;

(iii) private fire hydrant;

(iv) fire sprinkler; or

(v) suite isolation.

(2) If necessary to protect the City's public water system, the director may require more frequent testing of backflow prevention assemblies by a tester.

(3) Each backflow prevention assembly shall be tested and reported in accordance with the procedures of the Manual of Cross-Connection Control.

(4) After a new, replacement, or reconditioned backflow prevention assembly is tested, the customer's tester shall immediately submit the backflow prevention assembly test and maintenance report into Austin Water's electronic database. The tester shall provide a copy of the test and maintenance report to the customer.

(E) A customer is responsible for the general maintenance and upkeep of a backflow prevention assembly or backflow prevention device and shall pay the cost of installation, replacement, general maintenance, testing, and upkeep of a backflow prevention assembly or backflow prevention device as necessary to comply with the requirements of this chapter.

(F) A customer shall repair or replace a backflow prevention assembly that fails a test before returning the backflow prevention assembly to service. The repaired assembly shall be retested by a tester immediately after repairs.

(G) If a backflow prevention assembly protecting against a high hazard fails, the customer is prohibited from turning on the downstream water until the backflow prevention assembly is repaired. This prohibition does not apply to fire sprinklers or critical care facilities.

(H) A customer may not remove from use, relocate, or substitute another backflow prevention device or backflow prevention assembly without the approval of the

director. A replacement backflow prevention assembly must comply with this chapter.

(I) A customer shall replace a backflow prevention assembly or backflow prevention device that:

(1) is removed or relocated from an existing installation;

(2) the director determines cannot be repaired to pass any required testing; or

(3) constitutes a hazard to life, health, or safety.

(J) A person using a water-hauling vehicle to take water from the City's public water system must obtain a water meter under Chapter 15-3 (*Fire Hydrant Regulation*); and

(1) permanently install an air gap or a reduced pressure principle backflow prevention assembly on the vehicle; or

(2) install a reduced pressure principle backflow prevention assembly on the fire hydrant or other connection to the City's public water supply.

(K) On or before the date established by the director, a person using a water-hauling vehicle to take water from the City's public water system must annually:

(1) have the vehicle inspected and permitted by the utility as required by Chapter 15-3 (*Fire Hydrant Regulation*); and

(2) test the backflow prevention assembly and report the results of the test as required by this chapter.

(L) Except as otherwise provided in Subsection (M), customers whose sites have multiple interconnected water service connections shall install an approved backflow prevention assembly appropriate for the site at each service connection

(M) For sites with existing service connections that complied with applicable regulations when the service connections were installed and do not have backflow prevention assemblies, the customer may install a testable check valve system at any meter registering reverse flow in lieu of installing a backflow prevention assembly. The customer shall test the check valve any time the meter registers

reverse flow. If the check valve fails to hold, the customer shall replace or repair the check valve.

(N) Before taking potable water from a fire hydrant for use at a site, a customer must obtain an operational permit required by Chapter 15-3 (*Fire Hydrant Regulation*) and install and test a reduced pressure principle backflow prevention assembly unless the customer is utilizing truck mounted water meters that complies with this section.

§ 15-1-13 IDENTIFICATION OF POTABLE AND NON-POTABLE WATER SYSTEMS

(A) Except as provided in Subsection (B), if potable water and non-potable water systems are installed on the same site, the customer shall label and identify each system in accordance with the following requirements:

(1) Each water system shall be identified with a colored pipe or sleeve and coated with paints, wraps, and materials that are compatible with the piping.

(2) Potable water system pipes shall be identified with a green background and white lettering.

(3) Except as otherwise provided by Subsections (A)(6), (7) and (8), a non-potable water system shall have a yellow background with black uppercase lettering and be marked with the words: “CAUTION: NON-POTABLE WATER, DO NOT DRINK”.

(4) Potable or non-potable water systems shall be identified in a manner that designates the liquid being conveyed and shows the direction of normal flow. The minimum size of the letters and length of the color field shall comply with Table 15-1-13-A.

(5) For piping above grade, the background color and the required information shall be indicated every 20 feet (6,096 mm), on both sides of a wall or partition penetrated by the piping, and at least once in every story height traversed by the risers. The labeling shall be visible from the floor level. For piping below grade, the background color and the required information must be indicated every five feet (1,524 mm).

(6) All reclaimed water piping or onsite water reuse system piping inside a building shall be purple pipe or painted purple (Pantone colors No. 5-12, 5-22C or equivalent).

(7) All buried reclaimed water piping or onsite water reuse system water piping must be either manufactured in purple, painted purple, taped with purple metallic tape, or bagged in purple.

(8) An alternate water source system shall have a purple (Pantone colors No. 5-12, 5-22C or equivalent) background with uppercase black lettering and shall be field or factory marked as follows:

(a) An onsite water reuse system shall be marked with the words: "CAUTION: NON-POTABLE ONSITE WATER REUSE SYSTEM, DO NOT DRINK" in uppercase black letters.

(b) A reclaimed water system shall be marked with the words: "CAUTION: NON-POTABLE RECLAIMED WATER SYSTEM, DO NOT DRINK" in uppercase black letters.

(c) Other alternate water systems shall be marked with the words: "CAUTION: NON-POTABLE ALTERNATE WATER SOURCE, DO NOT DRINK" in uppercase black letters.

(B) A water system is not required to be labeled if:

(1) the system is for potable water inside a building and the non-potable system does not enter the building; or

(2) the below grade pipe and components of an existing irrigation system are converted to a reclaimed, onsite water reuse system water source, or other water sources and have not been disturbed.

(C) Any repair, addition or alteration to an irrigation system, and all pipe and components located above grade or accessible within a subsurface vault of an existing irrigation system converted to alternate water, must be identified consistent with Subsection (A) and 30 T.A.C. Section 344.65(3).

(D) Identification of the discharge side is not required for vacuum breakers or backflow preventers installed with fixtures listed in Chapter 17 of the adopted Plumbing Code .

(E) Each outlet on a non-potable water line that is used for special purposes shall be posted with a sign with black uppercase lettering as follows: "CAUTION: NON-POTABLE WATER, DO NOT DRINK".

TABLE 15-1-13-A MINIMUM LENGTH OF COLOR FIELD AND SIZE OF LETTERS

OUTSIDE DIAMETER OF PIPE OR COVERING (inches)	**MINIMUM LENGTH OF COLOR FIELD** (inches)	**MINIMUM SIZE OF LETTERS** (inches)
½ to 1 ¼	8	½
1 ½ to 2	8	¾
2 ½ to 6	12	1 ¼
8-10	24	2 ½
OVER 10	32	3 ½

§ 15-1-14 CROSS CONNECTION CONTROL. ASSEMBLIES, DEVICES AND METHODS.

(A) The following types of backflow prevention devices, assemblies, and methods can be used for cross connection:

(1) Air Gap: If used to provide backflow protection, the minimum air gap shall be designed in accordance with Table 15-1-14-B.

(2) Atmospheric Vacuum Breaker: A body, a checking member, and an atmospheric port.

(3) Hose Connection Backflow Preventer: Two independent check valves with an independent atmospheric vent in between and a means of field testing and draining.

(4) Double Check Valve Backflow Prevention Assembly: Two independently acting internally loaded check valves, four properly located test ports, and two isolation valves.

(5) Pressure Vacuum Breaker Backflow Prevention Assembly (PVB): A loaded air inlet valve, an internally loaded check valve, two properly located test ports, and two isolation valves. This device shall be permitted to be installed indoors where provisions for spillage are provided.

(6) Spill-Resistant Pressure Vacuum Breaker: One check valve force loaded closed and an air inlet vent valve force loaded open to atmosphere, positioned downstream of the check valve and located between and including two tightly closing shutoff valves and test ports.

(7) Reduced Pressure Principle Backflow Prevention Assembly: Two independently acting internally loaded check valves, a differential pressure relief valve, four properly located test ports, and two isolation valves.

(8) Double Check Detector Fire Protection Backflow Prevention Assembly: A double check valve assembly with a parallel detector assembly consisting of a water meter and a double check valve backflow prevention assembly.

(9) Double Check Detector Fire Protection Backflow Prevention Assembly Type II (DCDA II): A double check valve assembly with a parallel bypass consisting of two shutoff valves, two test ports, a meter, and a single check valve. This bypass assembly connects upstream and downstream of the main second check valve.

(10) Reduced Pressure Detector Fire Protection Backflow Prevention Assembly (RP): A reduced pressure principle backflow prevention assembly with a parallel detector assembly consisting of a water meter and a reduced pressure principle backflow prevention assembly.

(11) Reduced Pressure Detector Fire Protection Backflow Prevention Assembly Type II: Two shutoff valves, two test ports, a meter, and a single check valve. This bypass assembly connects upstream and downstream of the main second check valve and utilizes the reduced pressure zone and relief valve of the main assembly.

(12) Dual Check Backflow Preventer: Two independently acting check valves, force loaded to a normally closed position.

(13) Laboratory Faucet Backflow Preventer can be used if it complies with ASSE 1035.

(14) Backflow Preventer with Intermediate Atmospheric Vent: Two independently acting check valves, force loaded to a normally closed position and an intermediate chamber with a means for automatically venting to the atmosphere, force loaded to a normally open position.

(B) The following requirements apply to backflow prevention devices, assemblies and methods used in cross connection:

(1) Where more than one backflow prevention valve is installed on a single premise, and the valves are installed in one location, each separate valve shall be permanently identified in a manner satisfactory to the utility.

(2) Backflow prevention devices, assemblies, and methods shall be constructed with adequate access and clearance, in accordance with the manufacturer's instructions, and with not less than 12 inches (305 mm) between the lowest portion of the assembly and the grade, floor, or platform. Elevated installations of backflow prevention devices, assemblies, and methods that exceed five feet (1,524 mm) above the floor or grade shall be required to provide a platform capable of supporting a technician.

(3) Direct connection between potable water piping and sewer-connected wastes is prohibited. If potable water is discharged to the drainage system, it can only be discharged through an approved air gap of two pipe diameters of the supply inlet, but in no case shall the gap be less than one inch (25.4 mm). Connection shall be permitted to be made to the inlet side of a trap provided that an approved vacuum breaker is installed not less than six inches (152 mm) or the distance according to the backflow prevention device's listing, above the flood-level rim of such trapped fixture, so that at no time will such device be subjected to backpressure.

(4) Backflow preventers for hot water exceeding 110°F (43°C) shall be designed to operate at temperatures above 110°F (43°C) without rendering a portion of the assembly inoperative.

(5) Fixtures, appliances, or appurtenances with integral backflow preventer or integral air gaps manufactured as a unit shall be installed in accordance with their listing requirements and the manufacturer's installation instructions.

(6) Backflow assemblies and devices shall be protected from freezing with an outdoor enclosure that complies with ASSE 1060 or by a method acceptable to the utility.

(7) Drain lines serving backflow devices or assemblies shall be sized in accordance with the discharge rates of the manufacturer's flow charts for such devices or assemblies.

(8) Backflow prevention devices with atmospheric vents or ports shall not be installed in pits, underground, or submerged locations. A backflow preventer shall not be located in an area containing fumes that are toxic, poisonous, or corrosive.

(9) Except for potable water supplied to carbonators, a separate backflow prevention assembly or device shall be installed on a high hazard appurtenance or fixture in high hazard situations when water or product is intended for contact with humans either directly (consumption, bathing, medical uses, dental chairs, pharmaceuticals, etc.) or indirectly (sterilization, autoclaves, washing dishes or bottles, canning, etc.).

(10) Potable water supplied to carbonators shall be protected with a listed reduced pressure principle backflow preventer that is approved by the utility for that specific use. A single reduced pressure principle backflow prevention assembly may be installed for multiple carbonators that are located in the same immediate physical area if all water piping from the backflow preventer to the carbonator is exposed. Piping downstream of backflow protection for carbonators cannot be affected by carbon dioxide gas.

(11) If no human contact is intended for a water line downstream of a backflow prevention assembly or backflow prevention device, then a single backflow prevention assembly or backflow prevention device may be installed for multiple high hazard appurtenances or fixtures. Each water line downstream of the backflow protection must be labeled consistent with Section 15-1-13(A)(3).

(12) In low hazard situations that service multiple low hazards of the same type and are located in the same immediate physical area, a single backflow prevention assembly or device may be installed if all piping downstream of the backflow preventer is exposed. Each water line downstream of the backflow protection must be labeled consistent with the requirements for non-potable water piping.

(C) Additional Requirements for backflow prevention: In addition to the requirements of Subsection (B), the following will apply depending on the type of device being installed, as outlined below:

(1) Atmospheric Vacuum Breakers. Water closet and urinal flushometer valves shall be protected against backflow by an atmospheric vacuum breaker installed on the discharge side of the flushometer valve with the critical level not less than six inches (152 mm), or the distance according to its listing, above the overflow rim of a water closet bowl or the highest part of a urinal.

(2) Ballcock. Water closet and urinal tanks shall be equipped with a ballcock installed with the critical level not less than one inch (24.4 mm) above the full opening of the overflow pipe. In cases where the ballcock has no hush tube, the bottom of the water supply inlet shall be installed one inch (24.4 mm) above the full opening of the overflow pipe.

(3) Water Closet Flushometer Tanks. Water closet flushometer tanks shall be protected against backflow by an approved backflow prevention assembly, device, or method.

(4) Heat Exchangers. Heat exchangers used for heat transfer, heat recovery, or solar heating shall protect the potable water system from being contaminated by the heat-transfer medium. Single wall heat exchangers used in indirect-fired water heaters shall meet the requirements for single-wall heat exchangers in Section 505.4.1 of the Plumbing Code.

(5) Water Supply Inlets. Water supply inlets to tanks, vats, sumps, and other receptors shall be protected by an air gap, a listed vacuum breaker installed on the discharge side of the last valve with the critical level not less than six inches (152mm) above all downstream piping and the flood level rim of the receptor, or a backflow prevention assembly suitable for the degree of hazard.

(6) Lawn Sprinklers and Irrigation Systems. Potable water to lawn sprinklers and irrigation systems that lack pumps or connections for pumping equipment and lack chemical injection or the provisions for chemical injection must be protected from backflow using one of the following:

(a) pressure vacuum breaker backflow prevention assembly;

(b) spill-resistant pressure vacuum breaker;

(c) reduced pressure principle backflow prevention assembly; or

(d) double check valve assembly.

(7) Systems with Pumps. If sprinkler and irrigation systems have pumps, or connections for pumps, auxiliary air tanks, or are otherwise capable of creating backpressure, the potable water supply shall be protected by a reduced pressure principle backflow prevention assembly or double check valve located upstream of the source of backpressure.

(8) Systems with Backflow Devices. The backflow device installed downstream from a potable water supply pump or a potable water supply pump connection must be a:

(a) pressure vacuum breaker backflow prevention assembly;

(b) spill-resistant pressure vacuum breaker;

(c) reduced pressure principle backflow prevention assembly or

(d) double check valve assembly.

(9) Systems with chemical injectors. The potable water supply shall be protected by a reduced pressure principle backflow prevention assembly in a system with a chemical injector or provisions for chemical injection.

(10) Outlets with Hose Attachments. Potable water outlets with hose attachments, other than water heater drains, boiler drains, and clothes washer connections, shall be protected by a nonremovable hose bib type backflow preventer, a nonremovable hose bib vacuum breaker, or an atmospheric vacuum breaker installed not less than six inches (152 mm) above the highest point of usage

located on the discharge side of the last valve. The customer shall install protective measures to mitigate outside outlets from freezing.

(11) Water Cooled Equipment. Water cooled compressors, degreasers, or other equipment shall be protected with appropriate backflow prevention based on the type of hazard present.

(12) Aspirators. Water inlets to water-supplied aspirators shall be equipped with a vacuum breaker installed in accordance with its listing requirements and this chapter. The discharge shall drain through an air gap. The air gap shall be located above the flood-level rim of the fixture if a fixture tailpiece is to be used to receive the discharge of an aspirator.

(13) Steam or Hot Water Boilers. Potable water connections to residential steam or hot water boilers shall be protected from backflow by a double check valve assembly, backflow preventer with intermediate atmospheric vent and pressure reducing valve, or reduced pressure principle assembly in accordance with Table 15-1-14-A. A reduced pressure principle assembly shall be provided if chemicals are to be introduced into the system.

(14) Non-Potable Water Piping. Outlets on non-potable water lines shall be posted with a sign: "CAUTION: NON-POTABLE WATER, DO NOT DRINK."

(15) Beverage Dispensers. Except as otherwise provided in Subsection (C)(17), the potable water supply to a beverage dispenser or coffee machine shall be protected by an air gap, double check valve assembly, or vented backflow preventer consistent with ASSE 1022, installed and maintained per the manufacturer's requirements.

(16) Carbonated Beverage Dispenser. The potable water supply to a carbonated beverage dispenser shall be protected by an air gap or a reduced pressure principle assembly. The piping material installed downstream of the backflow preventer cannot be affected by carbon dioxide gas.

(17) Beverage Dispenser in Healthcare Facilities. The potable water supply to a beverage dispenser or coffee machine that is located within a healthcare facility subject to NFPA 99 shall be protected by a testable backflow prevention assembly.

(18) Deck-Mounted and Equipment Mounted Vacuum Breakers. Deck-mounted or equipment-mounted vacuum breakers shall be installed in accordance with their listing and the manufacturer's installation instructions, with the critical level not less than one inch (25.4 mm) above the flood-level rim.

(19) Protection from Fire Systems.

(a) Potable water supplies to fire protection systems that are not normally under pressure shall be protected from backflow and shall be in accordance with the requirements of the appropriate standards referenced in the Plumbing Code.

(b) Except as provided in Subsections (C)(20) and (21), potable water supplies to fire protection systems that are normally under pressure including standpipes and automatic sprinkler systems shall be protected from backpressure and backsiphonage by:

(i) a double check valve backflow prevention assembly;

(ii) a double check detector fire protection backflow prevention assembly type 1 and 2;

(iii) a reduced pressure principle backflow prevention assembly; or

(iv) a reduced pressure detector fire protection backflow prevention assembly type 1 and 2.

(20) Fire Department Connection. Where fire protection systems supplied from a potable water system include a fire department (Siamese) connection that is located less than 1700 feet (518.2 m) from a non-potable water source that is capable of being used by the fire department as a secondary water supply, the potable water supply shall be protected by a reduced pressure principle backflow prevention assembly or a reduced pressure detector fire protection backflow prevention assembly. In this subdivision, non-potable water sources include fire department vehicles carrying water of unknown quality or water that is treated with antifreeze, corrosion inhibitors, or extinguishing agents.

(21) Chemicals. If antifreeze, corrosion inhibitors, or other chemicals are added to a fire protection system supplied from a potable water supply, the potable

water system shall be protected by a reduced pressure principle backflow prevention assembly or a reduced pressure detector fire protection backflow prevention assembly.

(22) Types of Residential Systems. This subdivision applies to a stand-alone or multipurpose wet-pipe sprinkler system that does not use antifreeze. A multipurpose fire sprinkler system must provide potable water to both fire sprinklers and plumbing fixtures. A stand-alone sprinkler system must be separate and independent from the potable water system. A double check backflow prevention assembly must separate a stand-alone sprinkler system from the potable water supply.

(23) Hydraulic Design. If a backflow prevention assembly is installed in the potable water supply to a fire protection system, the hydraulic design of the system shall account for the pressure drop through the backflow assembly. If such assemblies are retrofitted for an existing fire protection system, the hydraulics of the sprinkler system design shall be checked to verify that there will be sufficient water pressure available for satisfactory operation of the fire sprinklers.

(24) Protection of Potable Mains. Private fire hydrants located at a distance from a private potable water main such that the volume of water in the hydrant lead is more than 100 gallons shall have double check backflow prevention assembly protection.

(25) Health Care or Laboratory Areas. Vacuum breakers for washer-hose bedpans shall be located not less than five feet (1524 mm) above the floor. Hose connections in health care or laboratory areas shall be not less than six feet (1829 mm) above the floor.

(26) Special Equipment. Portable cleaning equipment and dental vacuum pumps shall be protected from backflow by an air gap, an atmospheric vacuum breaker, a spill-resistant vacuum breaker, or a reduced pressure principle backflow preventer.

(27) Potable Water Outlets and Valves. Potable water outlets, freeze-proof yard hydrants, combination stop-and-waste valves, or other fixtures that incorporate a stop and waste feature that drains into the ground shall not be installed underground.

(28) Pure Water Process Systems. The water supply to a pure water process system, such as dialysis water systems, semiconductor washing systems, and similar process piping systems, shall be protected from backpressure and backsiphonage by a reduced pressure principle backflow preventer. However, the individual connections of the dialysis related equipment to the dialysis pure water system shall not require additional backflow protection.

(29) Garbage Can Washers. If garbage can washers are connected to a potable water supply system, the connection shall be protected against backflow with a reduced pressure principle backflow prevention assembly.

(30) Plumbing Fixture Fittings. Plumbing fixture fittings with integral backflow protection shall comply with ASME A 112.18.1/CSA B 125.1.

(31) Swimming Pools, Spas, and Hot Tubs. Potable water supply to swimming pools, spas, and hot tubs shall be protected by an air gap or a reduced pressure principle backflow preventer if the unit is equipped with a submerged fill line, or the potable water supply is directly connected to the unit circulation system.

(32) Chemical Dispensers. The water supply to chemical dispensers shall be protected against backflow as follows:

(a) If the installation of a chemical dispenser with internal backflow prevention that complies with IAPMO 1055 involves a water source from a faucet with an integrated vacuum breaker device, then a pressure bleed device conforming to IAPMO PS 104 shall be used to protect the vacuum breaker device.

(b) For all other chemical dispensers, the following assemblies, devices, or methods can be used:

(i) air gap

(ii) atmospheric vacuum breaker

(iii) pressure vacuum breaker

(iv) spill-resistant pressure vacuum breaker or

(v) reduced pressure principle backflow prevention assembly

(33) Site Containment Backflow Prevention Requirements.

(a) A site that utilizes an alternate water source shall provide an air gap or an appropriate backflow prevention assembly located immediately downstream of all potable City water meters and City service lines to private fire lines in accordance with Table 15-1-14-C.

(b) A site that contains an actual or potential contamination hazard shall provide an air gap or an appropriate backflow prevention assembly located immediately downstream of all potable City water meters and City service lines to private fire lines in accordance with Table 15-1-14-D.

(c) A non-potable rainwater catchment or non-potable condensate collection system of 500 gallons or less does not require backflow prevention at the potable water meter.

(34) Cooling Tower Reservoirs. A water supply outlet that terminates inside the envelope of a cooling tower shall be protected with a reduced pressure principle backflow prevention assembly. A water supply outlet that terminates outside the envelope of a cooling tower shall be protected by an air gap or a reduced pressure principle backflow prevention assembly.

(35) Commercial Dishwashing Machine. The water supply to a commercial dishwashing machine shall be protected by an air gap, an atmospheric backflow preventer, a pressure vacuum breaker, a spill resistant vacuum breaker, or a device that complies with ASSE 1004.

(36) Personal Hygiene Devices. Water closets with integral personal hygiene devices shall comply with ASME A112.4.2/CSA B45.16.

TABLE 15-1-14-A
BACKFLOW PREVENTION DEVICES, ASSEMBLIES, AND METHODS

		DEGREE OF HAZARD		
		LOW HAZARD	HIGH HAZARD	INSTALLATION[2,3]

DEVICE, ASSEMBLY, OR METHOD[1]	APPLICABLE STANDARDS	BACK-SIPHONAGE	BACK-PRESSURE	BACK-SIPHONAGE	BACK-PRESSURE	
Air gap	ASME A112.1.2	X	—	X	—	See Table 15-1-14-B.
Air gap fittings for use with plumbing fixtures, appliances, and appurtenances	ASME A112.1.3	X	—	X	—	Air gap fitting is a device with an internal air gap, and typical installation includes plumbing fixtures, appliances, and appurtenances. The critical level shall not be installed below the flood level rim.
Atmospheric vacuum breaker (consists of a body, checking member and atmospheric port)	ASSE 1001 or CSA B64.1.1	X	—	X	—	Upright position. No valve downstream. Minimum of six inches or listed distance above all downstream piping and flood level rim of receptor.[4,5]
Antisiphon fill valve (ballcocks) for gravity water closet flush tanks and urinal tanks	ASSE 1002/ ASME A112.1002/ CSA B125.12	X	—	X	—	Installation of gravity water closet flush tank and urinal tanks with the fill valve installed with the critical level not less than 1 inch above the opening of the overflow pipe.[4,5]
Vacuum breaker wall hydrants, hose bibbs, freeze resistant, automatic draining type	ASSE 1019 or CSA B64.2.1.1	X	—	X	—	Installation includes wall hydrants and hose bibbs. Such devices are not for use under continuous pressure conditions (means of shutoff downstream of device is prohibited).[4,5]

Hose connection vacuum breakers	ASSE 1011	X	—	X	—	Such devices are not for use under continuous pressure conditions. No valve downstream.[4,6]
Hose connection back-flow preventers	ASSE 1052	X	—	X	—	Such devices are not for use under continuous pressure conditions.[4,6]
Dual check backflow preventer wall hydrants, freeze resistant	ASSE 1053	X	—	X	—	Such devices are not for use under continuous pressure conditions.[4]
Freeze resistant sanitary yard hydrants	ASSE 1057	X	—	X	—	Such devices are not for use under continuous pressure conditions.[4]

TABLE 15-1-14-A
BACKFLOW PREVENTION DEVICES, ASSEMBLIES, AND METHODS
(continued)

DEGREE OF HAZARD						
DEVICE, ASSEMBLY, OR METHOD[1]	APPLICABLE STANDARDS	(LOW HAZARD)		(HIGH HAZARD)		INSTALLATION[2,3]
		BACK-SIPHONAGE	BACK-PRESSURE	BACK-SIPHONAGE	BACK-PRESSURE	
Backflow preventer with intermediate atmospheric vent	ASSE 1012	X	X	—	—	Installation of potable water connections to residential water boilers. No high-hazard chemicals shall be introduced into the system using such devices. Designed to operate under continuous pressure conditions. May discharge water.
Backflow preventer with intermediate atmospheric vent and pressure reducing valve	ASSE 1081	X	X	—	—	Installation of potable water connections to residential water boilers. No high-hazard

						chemicals shall be introduced into the system using such devices. Designed to operate under continuous pressure conditions. May discharge water.
Backflow preventer for beverage dispensers (two independent check valves with a vent to the atmosphere)	ASSE 1022	X	—	—	—	Installation does not include carbonated beverage machines or dispensers. Installation and maintenance must comply with manufacturer's requirements. These devices operate under intermittent or continuous pressure conditions.
Spill-Resistant Pressure Vacuum Breaker (single check valve with air inlet vent and means of field testing)	USC FCCHR[7]	X	—	X	—	Upright position. Minimum of 12 inches or listed distance above all downstream piping and flood-level rim of receptor.[5]
Double Check Valve Backflow Prevention Assembly (two independent check valves and means of field testing)	USC FCCHR[7]	X	X	—	—	Horizontal unless otherwise listed. Access and clearance shall be in accordance with the manufacturer's instructions, and not less than a 12-inch clearance at the bottom for maintenance. May need platform/ladder for test and repair. Does not discharge water.

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TABLE 15-1-14-A
BACKFLOW PREVENTION DEVICES, ASSEMBLIES, AND METHODS
(continued)

DEGREE OF HAZARD						
DEVICE, ASSEMBLY, OR METHOD[1]	APPLICABLE STANDARDS	POLLUTION (LOW HAZARD)		CONTAMINATION (HIGH HAZARD)		INSTALLATION[2,3]
		BACK-SIPHONAGE	BACK-PRESSURE	BACK-SIPHONAGE	BACK-PRESSURE	
Double Check Detector Fire Protection Backflow Prevention Assembly Type 1 & 2 (two independent check valves with a parallel detector assembly consisting of a water meter and a double check valve backflow prevention assembly and means for field testing)	USC FCCHR[7]	X	X	—	—	Horizontal unless otherwise listed. Access and clearance shall be in accordance with the manufacturer's instructions, and not less than a 12-inch clearance at the bottom for maintenance. May need platform/ladder for test and repair. Does not discharge water. Installation includes a fire protection system and is designed to operate under continuous pressure conditions.
Pressure Vacuum Breaker Backflow Prevention Assembly (loaded air inlet valve, internally loaded check valve, and means for field testing)		X	—	X	—	Upright position. May have valves down-stream. Minimum of 12 inches above all downstream piping and flood-level rim of the

						receptor. May discharge water.
Reduced Pressure Principle Backflow Prevention Assembly (two independently acting loaded check valves, a differential pressure relief valve and means for field testing)	USC FCCHR[7]	X	X	X	X	Horizontal unless otherwise listed. Access and clearance shall be in accordance with the manufacturer's instructions, and not less than a 12-inch clearance at the bottom for maintenance. May need platform/ladder for test and repair. May discharge water.
Reduced Pressure Detector Fire Protection Back-flow Prevention Assembly Type 1 & 2 (two independently acting loaded check valves, a differential pressure relief valve, with a parallel detector assembly consisting of a water meter and a reduced-pressure principle backflow prevention assembly, and means for field testing)	USC FCCHR[7]	X	X	X	X	Horizontal unless otherwise listed. Access and clearance shall be in accordance with the manufacturer's instructions, and not less than a 12-inch clearance at the bottom for maintenance. May need platform/ladder for test and repair. May discharge water. Installation includes a fire protection system and is designed to operate under continuous pressure conditions.

TABLE 15-1-14-A
BACKFLOW PREVENTION DEVICES, ASSEMBLIES, AND METHODS (continued)

DEGREE OF HAZARD						
DEVICE, ASSEMBLY, OR METHOD[1]	APPLICABLE STANDARDS	POLLUTION (LOW HAZARD)		CONTAMINATION (HIGH HAZARD)		INSTALLATION[2,3]
		BACK-SIPHONAGE	BACK-PRESSURE	BACK-SIPHONAGE	BACK-PRESSURE	
Laboratory faucet back-flow preventer	ASSE 1035	—	—	X	X	Installation includes laboratory faucets. Such devices are not for use under continuous pressure conditions. No valve downstream.[4]

For SI units: 1 inch = 25.4 mm

Table Notes:

1 See the description of devices and assemblies in this chapter.
2 Installation in pit or vault requires previous approval by the utility.
3 Refer to the general and specific requirement for installation.
4 Not to be subjected to operating pressure for more than 12 hours in a 24 hour period.
5 For deck-mounted and equipment-mounted vacuum breaker, see Section 15-1-14(C)(18)
6 Shall be installed in accordance with Section 15-1-14(C)(10)
7 Current list of approved backflow prevention assemblies, University of Southern California Foundation for Cross-Connection Control and Hydraulic Research.

TABLE 15-1-14-B
MINIMUM AIR GAPS FOR WATER DISTRIBUTION[4]

FIXTURES	NOT AFFECTED BY SIDEWALLS[1] (inches)	AFFECTED BY SIDEWALLS[2] (inches)
Effective openings[3] not greater than ½ of an inch in diameter	1	1½
Effective openings[3] not greater than ¾ of an inch in diameter	1½	2¼

Effective openings[3] not greater than 1 inch in diameter	2	3
Effective openings[3] greater than 1 inch in diameter	Two times the diameter of the effective opening	Three times the diameter of the effective opening

Notes:

1. Sidewalls, ribs, or similar obstructions do not affect air gaps if spaced from the inside edge of the spout opening a distance exceeding three times the diameter of the effective opening for a single wall, or a distance exceeding four times the effective opening for two intersecting walls.

2. Vertical walls, ribs, or similar obstructions extending from the water surface to or above the horizontal plane of the spout opening other than specified in Footnote 1 above affect air gaps. The effect of three or more such vertical walls or ribs has not been determined. In such cases, the air gap shall be measured from the top of the wall.

3. The effective opening shall be the minimum cross-sectional area at the seat of the control valve or the supply pipe or tubing that feeds the device or outlet. If two or more lines supply one outlet, the effective opening shall be the sum of the cross-sectional areas of the individual supply lines or the area of the single outlet, whichever is smaller.

4. Air gaps less than one inch (25.4 mm) shall be approved as a permanent part of a listed assembly that has been tested under actual backflow conditions with vacuums of 0 to 25 inches of mercury (85 kPa).

TABLE 15-1-14-C

ALTERNATE WATER SITE CONTAINMENT BACKFLOW PREVENTION

List of Auxiliary Water Sources and Uses[1]		Backflow prevention required at potable water connection			Backflow protection required at point of interconnection with potable water
		Domestic water meter[2]	Irrigation water meter[2]	City service to private fire mains [2,3,4,5]	
Lake/River water		RP	RP	DC	RP
Well water		RP	RP	DC	RP
Condensate water	Gravity	-	DC[5]	DC	RP
	Pumped	RP	RP	DC	RP
Rainwater	Gravity	-	DC[5]	DC	RP
	Pumped	RP	RP	DC	RP
Assemblies Gray water	Gravity	-	DC[5]	DC	AG
	Pumped	RP	RP	DC	AG
Reclaimed water[6]		RP	RP	DC	AG
Other water supply[7]		RP	RP	DC	AG

Table Notes:
RP: reduced pressure zone backflow prevention assembly.
DC: double check backflow prevention assembly
AG: air gap.
1 If multiple sources of alternate water are used, all backflow protection must meet the most stringent requirements of the sources used.
2 A backflow prevention assembly installed at the potable service connection of a site served by an alternate water source must have an annual operational test.
3 A new backflow prevention assembly installed in an existing fire system may result in the need to re-calculate fire system design specifications due to backflow preventer pressure losses.

List of Auxiliary Water Sources and Uses[1]	Backflow prevention required at potable water connection			Backflow protection required at point of interconnection with potable water
	Domestic water meter[2]	Irrigation water meter[2]	City service to private fire mains [2,3,4,5]	

4 A backflow prevention assembly installed in an un-metered fire system is required to be a detector assembly.
5 These backflow prevention assemblies are required regardless of the presence of alternate water.
6 When a chemical addition system is used (e.g., fertigation) a DC will be required on the reclaimed water service connection.
7 Other water supply includes all other alternate waters not listed in the table.

TABLE 15-1-14-D
SITE CONTAINMENT FOR PREMISES ISOLATION

Description of Premises requiring site containment[3]	Hazard Assessment	Required backflow prevention at meter/s[1]	Required backflow prevention at private unmetered fire mains[1,2]
Aircraft, automotive and missile plants	Health	RP or AG	DCDA
Animal feedlots	Health	RP or AG	DCDA
Breweries	Health	RP or AG	DCDA
Canneries, packing houses, rendering plants, slaughterhouses	Health	RP or AG	DCDA
Commercial car washes	Health	RP or AG	DCDA
Commercial laundries	Health	RP or AG	DCDA
Cold storage facilities	Health	RP or AG	DCDA
Dairies	Health	RP or AG	DCDA
Docks, dockside facilities, marinas	Health	RP or AG	DCDA
Dye works	Health	RP or AG	DCDA
Food and beverage processing plants	Health	RP or AG	DCDA

Hospitals, morgues, mortuaries, medical clinics, dental clinics, veterinary clinics, autopsy facilities, sanitariums, and medical labs	Health	RP or AG	DCDA
Metal manufacturing, cleaning, processing, and fabrication plants	Health	RP or AG	DCDA
Microchip fabrication facilities	Health	RP or AG	DCDA
Paper and paper products plants	Health	RP or AG	DCDA
Petroleum processing or storage facilities	Health	RP or AG	DCDA
Plants using radioactive material	Health	RP or AG	DCDA
Plating or chemical plants	Health	RP or AG	DCDA
Power plants	Health	RP or AG	DCDA
Restricted, classified, or other closed facilities	Health	RP or AG	DCDA
Rubber plants	Health	RP or AG	DCDA
Sewage lift stations	Health	RP or AG	DCDA
Sewage treatment plants	Health	RP or AG	DCDA
Steam plants	Health	RP or AG	DCDA
Sites where highest outlet is 80’ or more above the meter	Nonhealth	DC	DCDA

Table Notes:
RP: reduced pressure principle backflow prevention assembly.
DC: double check backflow prevention assembly
AG: air gap.
1 Backflow preventers shall be tested annually.
2 A backflow prevention assembly installed on an existing fire system may result in the need to re-calculate fire design specifications due to pressure loss through the backflow preventer.
3 This table lists many common hazards. It is not an all-inclusive list of the hazards which may be found connected to public water systems.

§ 15-1- 15 CROSS CONNECTION SURVEY.

(A) The director may conduct a cross-connection survey of the customer’s potable water system as a condition of service to prevent or eliminate cross connections between the customer’s potable water system and contamination or pollution sources.

(B) The director shall inspect:

(1) a building and surrounding property for potential cross connections;

(2) the availability of an alternate or reclaimed water supply;

(3) the use of a pollutant, contaminant, and other liquid, solid, or gaseous substance;

(4) installation of backflow prevention assemblies or backflow prevention devices; and

(5) backflow prevention assembly certification and test records.

(C) The director shall require a customer to eliminate possible cross connections between the customer's potable water systems and the public water supply as provided in Article 5 (*Enforcement*).

§ 15-1- 16 RETENTION OF RECORDS.

(A) A customer or any person installing, testing, or maintaining a backflow prevention device or assembly shall retain and make available for inspection and copying by the director backflow prevention assembly test and maintenance records, cross-connection test and inspection records, customer service inspection records, and any other information required by this chapter.

(B) Unless federal or state law requires information to be retained for a longer period, a person described in Subsection (A) shall retain all backflow and cross-connection test and inspection records under this chapter for at least three years from the date the record is created, and all customer service inspection records under this chapter for at least 10 years from the date the record is created.

(C) The records retention period is automatically extended for:

(1) the duration of compliance litigation under this chapter; or

(2) a longer period set by an enforcement order issued under this chapter.

(D) All records required by this chapter shall be on forms approved by the director.

§ 15-1-17 CUSTOMER SERVICE INSPECTIONS.

(A) A customer service inspection shall be performed in accordance with the commission's rules when:

(1) there is new construction;

(2) there is material improvement, correction, or addition to the potable plumbing system or the alternate water system; or

(3) the director believes that a cross-connection or other potential health or non-health hazard exists.

(B) A customer service inspection shall be performed by:

(1) a plumbing inspector licensed by the Texas State Board of Plumbing Examiners;

(2) a journeyman or master plumber licensed with the Texas State Board of Plumbing Examiners with a water supply protection specialist endorsement; or

(3) a customer service inspector licensed by the commission.

§ 15-1-18 ALTERNATE METHOD OF COMPLIANCE.

(A) A customer or any person desiring to use alternate methods of compliance to a requirement of this chapter shall submit an application to the director on a form provided for that purpose, including technical documentation to demonstrate the equivalency of the proposed method, system, or device.

(B) The director shall have the authority to approve an alternate method, system, or device for the intended purpose, if the director determines that the method, system, or device will provide equivalent or superior effectiveness and safety over those prescribed by this chapter.

(C) The director shall have the authority to require tests as proof of equivalency. Tests shall be made in accordance with approved or applicable standards, by an approved testing agency at the expense of the applicant. In the absence of such standards, the director shall have the authority to specify the test procedure.

(D) The director shall have the authority to require tests to be made or repeated, at the applicant's expense, if there is reason to believe that a method no longer meets the equivalency the approval was based on.

(E) An alternate method approved under this section shall not be considered to be in accordance with the requirements, intent, or both of this chapter for a purpose other than that granted by the director.

§ 15-1-19 ALTERNATE WATER SOURCES FOR NON-POTABLE APPLICATIONS.

(A) Registration required. Except as provided under Subsection (B), an alternate water system must be registered with Austin Water by a customer or their authorized representative. Registration shall be on a form approved by the director. Registration includes:

(1) site address for the alternate water system;

(2) storage capacity for the alternate water system;

(3) type of alternate water system; and

(4) intended use for the alternate water.

(B) A residential non-potable rainwater catchment or non-potable condensate collection system that is 500 gallons or less and used for outdoor applications is not required to be registered.

(C) Inspection and testing.

(1) Alternate water source systems shall be inspected and tested:

(a) for cross-connections in accordance with this chapter; and

(b) to determine compliance with provisions in the Plumbing Code related to potable water piping.

(D) Cross Connection Inspection and Testing. Except as provided under subdivisions (1) and (2), initial and subsequent inspections and tests shall be performed on both

the potable and alternate water source systems. The potable and alternate water source system shall be isolated from each other and independently inspected and tested to ensure there is no cross-connection in accordance with Section 15-1-19(F). The following types of systems are not required to have cross-connection testing:

(1) gravity type exterior non-potable condensate collection systems; and

(2) non-potable condensate collection systems with less than a 500-gallon capacity and used for outdoor applications.

(E) Visual system inspection. Before commencing the cross-connection testing, a dual system inspection shall be conducted by a licensed professional, registered with the utility. A dual system inspection requires checking:

(1) meter locations of the alternate water source and potable water lines to verify that no modifications were made and that no cross-connections are visible;

(2) pumps and equipment, equipment room signs, and exposed piping in equipment rooms;

(3) valves to ensure that the valve lock seals are still in place and intact; and

(4) valve control door signs to verify that no signs have been removed.

(F) Cross Connection Test. To determine whether a cross-connection has occurred, a licensed professional, registered with the utility, must follow the procedures described in this section. These procedures shall be followed for all non-potable alternate water sources requiring cross connection tests. The results of the test shall be submitted on a form approved by the director.

(1) The potable water system shall be activated and pressurized; and the alternate water source system shall be shut down, depressurized, and drained.

(2) The potable water system shall remain pressurized for a minimum period specified by the utility while the alternate water source is empty. The minimum period the alternate water source system is to remain depressurized shall be determined on a case-by-case basis, considering the

size and complexity of the potable and the alternate water source distribution systems, but in no case shall be less than one hour.

(3) The drain on the alternate water source system shall be checked for flow during the test, and fixtures, and potable and alternate water sources shall be tested and inspected for flow. Flow from an alternate source system outlet indicates a cross connection. No flow from a potable water outlet shall indicate that it is connected to the alternate water source system.

(4) The potable water system shall then be depressurized and drained.

(5) The alternate water source system shall then be activated and pressurized.

(6) The alternate water source system shall remain pressurized for a minimum period specified by the utility while the potable water system is empty. The minimum period the potable water system is to remain depressurized shall be determined on a case-by-case basis, but in no case shall that period be less than one hour.

(7) Fixtures, potable, and alternate water source shall be tested and inspected for flow. Flow from a potable water system outlet indicates a cross connection. No flow from an alternate water source outlet will indicate that it is connected to the potable water system.

(8) The drain on the potable water system shall be checked for flow during and at the end of the test.

(9) If there is no flow detected in the fixtures which would indicate a cross connection, the potable water system shall be re-pressurized.

(G) Discovery of Cross Connection. If a cross connection is discovered, the following procedure, in the presence of the utility employee, shall be activated immediately:

(1) the alternate water source piping to the building shall be shut down at the meter or source, and the alternate water source system shall be drained;

(2) potable water piping to the building shall be shut down at the meter;

(3) the cross-connection shall be uncovered and disconnected;

(4) the building shall be retested in accordance with Section 15-1-19(E);

(5) the potable water system shall be chlorinated with 50 parts-per-million (ppm) chlorine for 24 hours; and

(6) the potable water system shall be flushed after 24 hours, and a standard bacteriological test shall be performed. If test results are acceptable, the potable water system shall be permitted to be recharged.

(H) Alternate Cross Connection Test Methods. Alternate cross connection test procedures may be authorized by the utility. For an alternate method to be approved, an Austin Water Alternate Method of Compliance form shall be submitted before construction of an alternate water system begins.

(I) License Required. An alternate water system inspection and cross connection test shall be performed by:

(1) a plumbing inspector licensed by the Texas State Board of Plumbing Examiners;

(2) a journeyman or master plumber licensed with the Texas State Board of Plumbing Examiners with a water supply protection specialist endorsement; or

(3) a customer service inspector licensed by the commission.

(J) Reoccurring Inspection and Testing. Reoccurring inspections and cross-connection testing of the alternate water source system, consistent with Sections 15-1-19 (C), (D), (E), and (F), or approved alternate test, are required unless site conditions do not require it. Inspections and testing for black water sourced alternate water systems shall occur annually. Inspections and cross connection testing for all other alternate water systems for multi-family, industrial, institutional, or commercial sites shall occur once every four years. Cross-connection testing is required at any time the potable water system or alternate water system is altered or when required by the Utility. Test results shall be submitted on a form approved by the director.

(K) Connections to Potable Water. Alternate water source systems shall be permitted to have potable water makeup with the following requirements:

(1) Gray water systems shall have no direct connection to a potable water supply. Potable water is permitted to be used as makeup water for a non-pressurized storage tank provided the connection is protected by an air gap in accordance with this chapter. On-site treated non-potable water, and reclaimed water may be used as makeup water.

(2) Reclaimed water systems are prohibited from connecting to a potable water supply system. Potable water is permitted to be used as makeup water for a reclaimed water storage tank if the water supply inlet is protected by an air gap. An alternate water source may be used if adequate backflow protection is installed.

(3) Makeup water to other alternate systems requires an air gap or reduced pressure zone backflow preventer.

(L) Initial Inspection and Cross Connection Test for Reclaimed Water Sites. Before a building is occupied or the system is activated, an inspection, and cross-connection test that complies with Sections 15-1-19(C)-(F), or an approved alternate test, is required. Final approval cannot be granted until the test is deemed successful by the Utility. An annual inspection and cross-connection test shall occur.

(M) Initial Inspection and Cross Connection Test for On-site Water Reuse System Sites. Before a building is occupied or the system is activated, an inspection and cross-connection test that complies with Sections 15-1-19(C)-(F), or an approved alternate, is required. Final approval cannot be granted until the test is deemed successful by the Utility. An inspection and cross-connection test shall occur once every four years for multi-family, industrial, institutional, or commercial sites.

(N) Initial Inspection and Cross Connection Test for Other Alternate Water Systems. Before a building is occupied or the system is activated, an inspection and cross-connection test that complies with Sections 15-1-19(C)-(F), or an approved alternate, is required. Final approval cannot be granted until the test is deemed successful by the Utility. An inspection and cross-connection test shall occur once every four years for multi-family, industrial, institutional, or commercial sites.

(O) Initial Inspection and Cross Connection Test for Non-Potable Rainwater Catchment Sites. Except as provided in subdivision (1) and (2), before a building is occupied or the system is activated, a cross-connection test that complies with Sections 15-1-19 (C)-(F), or an approved alternate test, is required. Final approval cannot be granted until the test is deemed successful by the Utility. An inspection

and cross-connection test shall occur once every four years. Test results shall be submitted on a form approved by the director.

(1) The following type of rainwater catchment systems are not required to have cross-connection testing: A non-potable rainwater catchment system of 500 gallons or less and used for outdoor applications; or

(2) Gravity type exterior non-potable rainwater catchment systems.

(P) Hose Bibs. Hose bibs shall not be allowed on reclaimed water piping systems. Access to reclaimed water shall be through a quick-disconnect device that differs from those installed on the potable water system. Such outlets supplying reclaimed water shall be marked with the words: "CAUTION: NON-POTABLE RECLAIMED WATER, DO NOT DRINK" and the symbol below. Hose bibs on other alternate water systems shall be allowed and shall be marked with the words: "CAUTION: NON-POTABLE WATER, DO NOT DRINK" and the symbol below.

Q) Changes to Potable Water or Alternate Water Systems. On sites utilizing alternate water, no changes or connections to either the alternate water system or the potable water system shall be made without first obtaining approval from the director and any other authority having jurisdiction.

§ 15-1-20 RAINWATER CATCHMENT SYSTEMS FOR POTABLE USE.

(A) At each residence or facility where water from a rainwater catchment system is used for potable purposes and there is a connection to the City's public water system, the customer shall ensure that the rainwater catchment system is installed and maintained by a master plumber or journeyman plumber licensed by the Texas State Board of Plumbing Examiners who holds an endorsement issued by the Texas State Board of Plumbing Examiners as a water supply protection specialist.

(B) A person who intends to connect a rainwater catchment system to a public water system must give written notice of that intention to Austin Water.

(C) The public water system used as a back-up supply for the potable rainwater catchment system shall be connected only to the water storage tank and may not be connected to the plumbing of a structure. The connection to the tank shall be protected by a reduced pressure principle backflow assembly.

ARTICLE 3. TESTER REGISTRATION.

§ 15-1-31 LICENSED TESTER.

(A) A person shall register with the director before the person conducts a test or repair of a backflow prevention assembly or performs a customer service inspection or cross-connection test at a site connected to the City's public water system. The registrant shall complete a form approved by the director.

(B) An applicant shall apply for registration as a licensed tester on a form approved by the director.

(1) The director shall determine whether an applicant is eligible for registration.

(2) An applicant is required to obtain a license from the commission to be eligible as a tester.

(C) Once registered, a tester is responsible for:

(1) conducting themselves in a professional manner; in accordance with the applicable rules of the commission, the Texas State Board of Plumbing Examiners, and this chapter;

(2) compliance with the City's rules and regulations;

(3) ensuring that original manufacturer replacement parts are used when replacing any part in a backflow prevention assembly;

(4) conducting testing and inspections only when assured that all safety procedures have been observed and that all necessary individuals involved have been appropriately notified;

(5) maintaining current contact and license information with Austin Water; and

(6) maintaining the confidentiality of the secured password into Austin Water's electronic database.

(C) A registration remains in effect unless:

(1) the tester fails to maintain eligibility for registration; or

(2) the director revokes the registration.

(D) A tester must re-establish eligibility if the tester's license is revoked.

§ 15-1-32 PROOF OF EQUIPMENT.

(A) A tester shall furnish evidence to show that they have the necessary tools and equipment to properly test and certify backflow prevention assemblies.

(B) A tester shall register each test gauge to be used by providing: the manufacturer, model number, serial number, and current accuracy certification of each test gauge on a form approved by the director.

(C) A tester shall, on or before the date established by the director, have gauges registered with the Utility tested for accuracy annually in accordance with the commission's requirement and submit the results to the director. The tester shall list the registered serial numbers of test gauges on test and maintenance reports submitted to the director. Any failed gauges shall be re-calibrated to meet commission requirements. If a gauge cannot be re-calibrated, then the gauge shall be deactivated by Austin Water.

§ 15-1-33 QUALITY CONTROL.

(A) A tester must perform a competent and accurate certification of each backflow prevention assembly tested.

(B) A tester must leave a copy of the test and maintenance report with the customer and inform the customer if the backflow prevention assembly failed a test.

(C) The director may take the following quality control measures relating to a certified tester:

(1) retest a certified backflow prevention assembly;

(2) send written notice of test discrepancies to the tester who certified a backflow prevention assembly; and

(3) use other necessary investigative methods.

§ 15-1-34 REVOCATION.

(A) The director may revoke a tester's registration for:

(1) failure to register the serial number of a gauge used to test backflow prevention assemblies;

(2) use of a gauge that does not have a current gauge accuracy certification to test backflow prevention assemblies;

(3) three testing or reporting discrepancies within a two-year period, beginning with the first discrepancy, including:

(a) false, incomplete, or inaccurate reporting of any test completion or certification of a backflow prevention assembly performed;

(b) use of inaccurate gauges;

(c) improper operational certification methods; or

(d) incomplete backflow test and maintenance reports;

(4) failure to maintain licensure with the commission as required by this chapter;

(5) conviction of a violation of this chapter; or

(6) failure to submit reports to the director within a three-year period.

§ 15-1-35 DESIGN CHANGES.

A tester may not change the design or operational characteristics of a backflow prevention assembly during installation, repair, or maintenance unless the director approves the change.

§ 15-1-36 UTILITY PERSONNEL.

A City employee who inspects, tests, or surveys a backflow prevention system under Section 15-1-16 (*Cross Connection Survey*), 15-1-33 (*Quality Control*), or 15-1-61 (*Inspections*) must be licensed by the Texas State Board of Plumbing Examiners and be licensed by the commission as a backflow prevention assembly tester.

ARTICLE 4. CONNECTION BY OTHER PUBLIC WATER SYSTEM.

§ 15-1-51 REQUIRED PREVENTION METHODS FOR A PUBLIC WATER SYSTEM WITH A PRE-EXISTING CONNECTION.

(A) A public water system with a water service connection to the City's public water system on January 12, 2004, shall:

(1) comply with the inspection requirements of 30 T.A.C. Section 290.44 (Water Distribution);

(2) adopt and enforce a plumbing code or service regulation no less stringent than a plumbing code approved for use in the state of Texas;

(3) conduct inspections to ensure that its customers comply with the requirements of Subsections (A)(1) and (2); and

(4) provide records of its cross connection or backflow prevention program and enforcement action to the director upon request;

(5) install one or more gravity overflows at a receiving vessel or reservoir with a minimum capacity equal to or greater than the maximum possible fill rate at 60 pounds per square inch at the base of the vessel or reservoir; or

(6) install an air gap external to a tank or receiving vessel at a service connection.

(B) A public water system that purchases or obtains water from the City as a sole source through a connection to the City's public water system made on or before January 12, 2004, may:

(1) comply with Subsections (A)(1) through (4);

(2) comply with Subsection (A)(5);

(3) comply with Subsection (A)(6); or

(4) install, test, and maintain a backflow prevention assembly at each service connection to the City's public water system.

(C) A public water system that purchases or obtains water from the City through a connection to the City's public water system made on or before January 12, 2004, and purchases or obtains water from an auxiliary water supply on or before January 12, 2004, may:

(1) comply with Subsections (A)(1) through (4);

(2) comply with Subsection (A)(5);

(3) comply with Subsection (A)(6); or

(4) install, test, and maintain a reduced pressure backflow prevention assembly at each service connection to the City's public water system.

(D) A public water system that fails to comply with this section by January 12, 2009, commits an offense.

§ 15-1-52 CONSTRUCTION REQUIREMENTS FOR SOLE SOURCE PURCHASER.

A public water system that purchases or obtains water from the City as a sole source through a connection made after January 12, 2004, shall, before using the connection:

(1) install, test, and maintain a backflow prevention assembly at each service connection to the City's public water system;

(2) install one or more gravity overflows at a receiving vessel or reservoir with a minimum capacity equal to or greater than the maximum possible fill rate at 60 pounds per square inch at the base of the vessel or reservoir; or

(3) install an air gap external to a tank or receiving vessel at a service connection.

§ 15-1-53 CONSTRUCTION REQUIREMENTS FOR NON-SOLE SOURCE PURCHASER.

A public water system that purchases or obtains water from the City through a connection made after January 12, 2004, and purchases or obtains water from another source shall, before using the connection:

(1) install, test, and maintain a reduced pressure backflow prevention assembly at each service connection to the City's public water system;

(2) install one or more gravity overflows at a receiving vessel or reservoir with a minimum capacity equal to or greater than the maximum possible fill rate at 60 pounds per square inch at the base of the vessel or reservoir; or

(3) install a physical air gap external to a tank or receiving vessel at a service connection.

§ 15-1-54 CERTIFICATION.

(A) A public water system must obtain certification by a tester for each double check valve assembly and reduced pressure principle backflow prevention assembly installed as prescribed by Section 15-1-52 (*Construction Requirements For Sole Source Purchaser*) or Section 15-1-53 (*Construction Requirements For Non-Sole Source Purchaser*):

(1) on installation; and

(2) annually during use, on or before the date established by the director.

(B) A public water system must provide a copy of a certification issued under this section to the director not later than the fifth day after the certification is completed.

ARTICLE 5. ENFORCEMENT.

§ 15-1-61 INSPECTIONS.

The director may inspect or require an inspection of property or facilities, real property, or buildings connected to the public water system. An inspection may include:

(1) a survey of the property or facilities, real property, or buildings for cross connections;

(2) inspection of existing backflow prevention assembly installation; and

(3) annual testing and certification of assemblies by a licensed backflow prevention assembly tester, on or before the date established by the director.

§ 15-1-62 RIGHT OF ENTRY.

(A) The director may enter a customer's property or facility, including an easement or private property where a public or private potable water system is located, to gain access to a cross connection, backflow prevention assembly, or piping. The director's right of entry is a condition of a customer's water service or connection to the City's public water system.

(B) The director may inspect a customer's potable water system, piping, or the records required under this chapter or the rules of a public water system with which the City has an agreement for wholesale water service.

(C) A customer shall promptly remove, at the customer's sole expense, a security barrier or other obstacle to access by the director to the customer's property or facility.

(D) In connection with action by the director under this chapter, a customer with water service provided by the utility commits an offense if the person:

(1) denies the director right of entry;

(2) fails to remove a barrier or obstacle to access by the director; or

(3) unreasonably delays access by the director.

§ 15-1-63 SEARCH WARRANT.

(A) The director may apply to the municipal court or other court of competent jurisdiction for a search warrant if:

(1) a customer denies the director access to a building, structure, property, or a public or private potable system connected to the City's public water system; or

(2) the director has probable cause to believe there is:

(a) a violation of this chapter or other enforcement order;

(b) a need to conduct a cross connection inspection or cross connection survey; or

(c) a threat to public health or safety.

(B) The director may inspect without a warrant to remedy an imminent danger to the public health and safety.

§ 15-1-64 OFFENSES.

A person commits an offense if the person:

(1) commits or assists in the commission of a violation of this chapter;

(2) is the customer, owner, occupant, lessee, or manager of property or facilities that are the source of a violation of this chapter; or

(3) obstructs or delays the director's access to a customer's property or facilities.

§ 15-1-65 NOTICE OF VIOLATION.

(A) The director may serve a written notice of violation on a person who has violated:

(1) the conditions of registration as a tester;

(2) a plumbing permit;

(3) installation requirements of a backflow prevention assembly or device; or

(4) a requirement of this chapter.

(B) The director may take any enforcement action without first issuing a notice of violation.

(C) A notice of violation issued under this chapter shall, at a minimum, contain:

(1) the name of the responsible person;

(2) the address of the alleged violation; and

(3) a description of the alleged violation.

§ 15-1-66 CRIMINAL PENALTY.

(A) A person violating this chapter commits a Class C misdemeanor, punishable in accordance with Section 1-1-99 (*Offenses; General Penalty*) of the Code by a fine not to exceed $2,000. Each occurrence of a violation of this chapter is a separate offense.

(B) Proof of a culpable mental state is not required and need not be proved, for fines of $500 or less.

§ 15-1-67 CIVIL REMEDIES.

(A) The city attorney may enforce this chapter by injunction, declaratory relief, or other action at law or in equity.

(B) The city attorney may initiate a suit against the owner, occupant, tenant, manager, or water customer of property or facility that is the source of a violation of this

chapter, to recover a civil penalty not to exceed $5,000 for each violation. Each day that a violation continues constitutes a separate violation.

§ 15-1-68 LIABILITY.

(A) A person or public water system may be held liable for a violation of this chapter if the person:

(1) commits or assists in the commission of a violation;

(2) is an authorized representative under this chapter; or

(3) is the owner, occupant, tenant, manager, or water customer of premises, property or a facility that is the source of pollution or contamination of the potable or reclaimed water system in violation of this chapter.

(B) A person who violates this chapter is liable to the City for expenses, loss, or damage incurred by the City.

§ 15-1-69 TERMINATION OF SERVICE.

(A) The director may terminate water or wastewater service in accordance with this section.

(B) The director may terminate water or wastewater service if the customer, owner, tenant, lessee, or water customer does not correct a violation within five days after the person becomes aware of the violation.

(C) The director may refuse or terminate water or wastewater service if a backflow prevention assembly is not installed, certified for operation, repaired, or replaced as required by this chapter.

(D) The director may terminate water or wastewater service if a customer fails to terminate a connection between a potable water system and a reclaimed or alternate water system.

(E) The director may terminate water or wastewater service to a customer who does not pay a billing by the due date.

§ 15-1-70 EMERGENCY SUSPENSION.

(A) On receipt of informal written or verbal notice, the director may suspend water service and disconnect a private or public water system from the City's public water system without a hearing if the director determines that contamination or pollution due to a cross connection:

(1) presents an imminent threat to the City's public water system;

(2) presents an imminent danger to public health or safety;

(3) presents a threat to the environment; or

(4) threatens to interfere with the operation of the City's public water system.

(B) A person notified of the suspension of the person's service shall immediately stop use of the City's public water system water and the director shall disconnect the City's public water system from the person's private or public water system.

(C) If a person fails to immediately comply with an emergency suspension order, the director may take action the director determines is necessary to prevent contamination or pollution, or to minimize damage to the City's public water system, the public, property, or the environment.

(D) The director may take action under this section even if termination proceedings have been initiated under Section 15-1-69 (*Termination of Service*).

(E) A suspension under this section is not affected by evidence that the danger caused by the contamination or pollution due to a cross connection has ceased.

§ 15-1-71 CUMULATIVE REMEDIES.

The remedies authorized under this chapter are cumulative unless specifically prohibited by state or federal law.

§ 15-1-72 VOLUNTARY COMPLIANCE.

(A) The director may accept from a person responsible for a violation under this chapter a written agreement for voluntary compliance, or issue a consent order that establishes an agreement for voluntary compliance.

(B) An agreement under this section must:

(1) describe the violation;

(2) describe the specific action the person must take to correct the violation;

(3) specify the time period for the person to complete the corrective action;

(4) be signed and dated by the person responsible for compliance; and

(5) be judicially enforceable.

(C) The director may take action to enforce compliance with an agreement under this section.

§ 15-1-73 SHOW CAUSE HEARING.

(A) The director may order a person responsible for a violation of this chapter or an enforcement order to appear before the director and show cause why a proposed enforcement action should not be taken.

(B) The director shall serve notice to a person under this section including:

(1) the time and place for a hearing;

(2) the nature of the violation;

(3) the proposed enforcement action;

(4) the reasons for the enforcement action; and

(5) a request that the person show cause why the proposed enforcement action should not be taken.

(C) The director shall serve notice under this section in person or by certified mail, return receipt requested, no later than the third day before the hearing. Notice may be served on an employee, agent or other authorized representative of a person responsible for a violation.

(D) The director may take immediate enforcement action following a noticed show cause hearing.

§ 15-1-74 COMPLIANCE ORDER.

(A) If the director determines that a person has violated this chapter or an enforcement order, the director may issue an order to the person directing the person to correct the violation within a specified period.

(B) If a person does not comply within the period provided, the director may disconnect water or wastewater service to the non-compliant premises until the person installs an operational facility, device, or equipment to correct the violation.

§ 15-1-75 CEASE AND DESIST ORDER.

(A) If the director determines that a person is violating this chapter or an enforcement order, or that a past violation committed by the person is likely to recur, the director may issue an order directing the person to:

(1) immediately cease and desist the violation;

(2) immediately comply with this chapter or an enforcement order; and

(3) take necessary remedial or preventive action to address a present, continuing, or threatened violation, including halting operation.

PART 2. This ordinance takes effect on _____, 2025.

PASSED AND APPROVED

§
§
_____, 2025 § _____
Kirk Watson
Mayor

APPROVED: _____ **ATTEST:** _____
Deborah Thomas
Interim City Attorney
Myrna Rios
City Clerk