

ORDINANCE NO. 2017-06

ORDINANCE OF THE CITY OF FRIENDSVILLE, TENNESSEE, AUTHORIZING AND SETTING FORTH GUIDELINES FOR THE PROTECTION OF THE PUBLIC WATER SYSTEM FROM POSSIBLE CONTAMINATION.

WHEREAS, the purpose of this Ordinance is to protect the City of Friendsville water supply from contamination or pollution from any cross-connections, existing or potential, and

WHEREAS, the purpose of this Ordinance is further to assure that approved back flow prevention of assemblies are tested when put into service and then tested at least annually thereafter, and

WHEREAS, this Ordinance sets forth uniform requirements for protection of the public water system for the City of Friendsville from possible contamination, and

WHEREAS, this Ordinance enables the City to comply with all applicable local, state and federal laws, regulations, standards, and requirements, and

NOW THEREFORE, be it Ordained by the Board of Commissioners of the City of Friendsville as follows:

Section 1. Definitions.

- (1) **Air-gap** shall mean a vertical, physical separation between a water supply and the overflow rim of a non-pressurized receiving vessel. An approved air-gap separation shall be at least twice the inside diameter of the water supply line, but in no case less than six (6") inches. Where discharge line serves as receiver, the air-gap shall be at least twice the diameter of the discharge line, but not less than six (6") inches.
- (2) **Atmospheric vacuum breaker** shall mean a device, which prevents backsiphonage by creating an atmospheric vent when there is either a negative pressure or sub-atmospheric pressure in the water system.
- (3) **Auxiliary intake** shall mean any water supply, on or available to a premises, other than that directly supplied by the public water system. These auxiliary waters may include water from another purveyor's public water system; any natural source, such as a well, spring, river, stream, and so forth; used, reclaimed or recycled waters; or industrial fluids.
- (4) **Backflow** shall mean the undesirable reversal of the intended direction of flow in a potable water distribution system as a result of a cross connection.
- (5) **Backpressure** shall mean any elevation of pressure in the downstream piping system (caused by pump, elevated tank or piping, steam and/or air pressure)

ORDINANCE NO. 2017-06

above the water supply pressure at the point which would cause, or tend to cause, a reversal of the normal direction of flow.

- (6) **Bypass** shall mean any system of piping or other arrangement whereby water from the public water system can be diverted around a backflow prevention device.
- (7) **Cross connection** shall mean any physical connection or potential connection whereby the public water system is connected, directly or indirectly, with any other water supply system, sewer, drain, conduit, pool, storage reservoir, plumbing fixture or other waste or liquid of unknown or unsafe quality, which may be capable of imparting contamination to the public water system as a result of backflow or backsiphonage. Bypass arrangements, jumper connections, removable sections, swivel or changeover devices, through which or because of which backflow could occur, are considered to be cross connections.
- (8) **Hazard Assessment** a detailed inspection of the facilities within a water customer's plumbing system.
- (9) **Reduced pressure principle backflow prevention device** shall mean an assembly consisting of two (2) independently operating approved check valves with an automatically operating differential relief valve located between the two check valves, tightly closing resilient seated shut-off valves, plus properly located resilient seated test cocks for the testing of the check valves and the relief valve.

Section 2. Regulation.

Under no circumstance will a cross-connection, auxiliary intake, bypass, or interconnection be allowed unless approved by the City of Friendsville upon proof of compliance with the criteria set forth by the Tennessee Department of Environment and Conservation, Division of Water Supply and the provisions of this chapter. All commercial cross-connections will require backflow prevention assembly installation.

Authorized employees of the City of Friendsville, with proper identification, shall have free access to all areas of a premise or building to which potable water is supplied for the purpose of conducting Hazard Assessments.

If a customer refuses access to their premises, the plumbing system shall be classified as a high hazard connection and appropriate protection shall be required at the service connection based on potential health hazards in accordance with regulations of the Tennessee Department of Environmental and Conservation, Division of Water Supply. In this event the City will give the customer 24 hrs. to

ORDINANCE NO. 2017-06

allow access to their facility prior to such action being taken. Customers who do not comply to provide timely access within the time limit set forth shall have all water services terminated until compliance is met.

Section 3. Approved Backflow Prevention Assemblies.

All backflow prevention assemblies used in the City of Friendsville water system shall be fully approved and listed as acceptable by the Tennessee Department of Conservation, Division of Water Supply as to manufacturer, model, size, application, orientation and alterations. The assembly shall have a status of **Passed** determined by performance evaluations to suffice as an approved backflow prevention assembly.

There are four categories for hazards for potential cross-connections:

- (1) High Hazard
- (2) Moderate Hazards
- (3) Low Hazard
- (4) Fire Safety

Reduced Pressure Principle assembly may be used for High hazards and Moderate hazards. Double Check Valve Assemblies may be used for Moderate hazards and is limited to Class 1-3 fire systems only.

The following assemblies will meet recommendations and requirements for protection of the water system, depending on the degree of hazard:

- (1) Reduced Pressure Principle Assembly
- (2) Reduced Pressure Principle Detector Assembly
- (3) Double Check Valve Assembly; and
- (4) Double Check Valve Detector Assembly.

ORDINANCE NO. 2017-06

Section 4. Installation and Maintenance Requirements for Backflow Prevention Assemblies.

Acceptable installation of backflow prevention assemblies shall meet the criteria of the State of Tennessee and the following requirements:

- (1) All backflow prevention assemblies installed on fire protection systems must be performed by person(s) possessing a Fire Sprinkler Contractor License.
- (2) All assemblies shall be installed in accordance with the manufacturer's installation instructions and by the State of Tennessee's installation guide unless such instances are in conflict with the ordinance set forth by the City, in which case the City ordinance shall control. All assemblies shall possess all test cocks and fittings required for testing the assembly.
- (3) Reduced pressure principle backflow prevention assemblies installed inside a premises shall be located so that the relief valve discharge port is a minimum of twenty four (24) inches, plus nominal diameter of the supply line, above the finished floor level. The maximum height above the finished floor level shall not exceed seventy-two (72) inches and be positioned where discharge from a relief port will not create any adverse or undesirable conditions.
- (4) Any backflow prevention assembly(s) installed inside a premises (i.e., basements, closets, fire riser rooms, mechanical rooms, etc.) shall have adequate lighting to provide for inspections and/or repairs.
- (5) Backflow prevention assemblies installed outside a premises (i.e., irrigation devices, domestic assemblies located outside a facility or fire protection system assemblies) shall be located so that the relief valve discharge port of reduced pressure principle backflow prevention assemblies or lowest point of double check valve assemblies is a minimum of fourteen (14) inches, plus nominal diameter of the supply line, above the finished grade level/surface. The maximum height above the finished grade level shall not exceed seventy-two (72) inches.
- (6) All reduced pressure principle backflow assemblies installed inside a premises shall have adequate drainage and be equipped with a drain line from the relief valve that is a minimum of two (2) times the nominal diameter of the supply line of the backflow assembly.
- (7) Clearance from wall surfaces or other obstructions for backflow prevention assemblies shall be a minimum of six (6) inches. However, if a person must enter an enclosure to repair or test, the minimum distance shall be twenty-four (24) inches.

ORDINANCE NO. 2017-06

- (8) Backflow prevention assemblies devices shall be adequately protected from freezing, vandalism, theft, and mechanical abuse, overgrowth of vegetation and from any corrosive, sticky, greasy, abrasive or other damaging substances.
- (9) Backflow prevention assemblies devices shall be accessible to the City at all times. Assemblies shall not be installed in areas such as locked enclosures, fenced areas, backyards, pool houses, garages, under decks, porches, or in heavy shrubbery that could be damaged due to the testing process.
- (10) An approved air gap shall separate the relief port from any drainage system. Such air gap shall not be altered without the specific approval of the City.
- (11) Backflow prevention assemblies devices shall be located in an area free from submergence or flood potential and cannot in any circumstance be located in a pit or hole.
- (12) All backflow prevention assemblies devices shall be adequately supported to prevent sagging or swaying.
- (13) An approved strainer shall be installed immediately upstream of all backflow prevention assemblies or shutoff valve, except on fire lines, using only noncorrosive fittings in the device's assembly.
- (14) Where the use of water is critical for the continuance of normal operations, the protection of life, property and/or equipment, including but not limited to, apartment or residential housing building, barber shops or beauty salons with four (4) or more chairs, dental or medical facilities, multi-tenant buildings served by a single water service line or restaurants, duplicate backflow prevention assemblies shall be provided to avoid the necessity of discontinuing water service to test or repair the backflow prevention assembly(s).
- (15) A device for the control of thermal expansion shall be installed on the customer's water system where the thermal expansion of the water in the system will cause the water pressure to exceed the pressure setting of the pressure relief valve of the water heater. The thermal expansion device shall control the water pressure to prevent the pressure relief valve of the water heater from discharging.
- (16) Full-open valves, followed by a drain plug, shall be installed on the supply line of every irrigation system whether supplied off the customer's main domestic service line or by its own separate City public water supply meter prior to the irrigation backflow prevention assembly.

ORDINANCE NO. 2017-06

- (17) Full-open valves shall also be installed on the discharge side of every irrigation backflow prevention assembly.
- (18) Where compressed air is used to winterize irrigation systems, proper fittings must be installed downstream of the irrigation backflow prevention assembly for that purpose.
- (19) Irrigation backflow prevention assemblies must be installed and have water service up to the number two shutoff valve of the assembly, whether or not the irrigation system is activated or in use, no later than May 1st of each year and remain in service until September 30th of each year to allow for required annual inspection and testing of the backflow prevention assembly. Irrigation systems with backflow prevention assemblies not installed or not in service during said period will be viewed as a failure of the annual inspection.
- (20) Installation and testing shall be at the sole expense of the owner or occupant of the premises.

Section 5. Fire Protection Systems.

- (1) An approved backflow prevention assembly shall be installed on each fire service line at the property line where possible. Alternatively, the approved backflow prevention assemblies shall be installed immediately inside the building served before the first branch line leading off the service line.
- (2) Class 1, 2 and 3 fire protection systems shall require at minimum a double check valve assembly.
- (3) Class 4, Class 5, Class 6 fire protection systems shall require an air gap or a reduced pressure principle assembly as determined by the City.
- (4) Where a fire sprinkler system is installed on the premises, a minimum of a double check valve assembly shall be required.
- (5) Where a fire sprinkler system uses chemicals, such as liquid foam, to enhance fire suppression a reduced pressure principle assembly shall be required.
- (6) In any premises with an auxiliary water supply for fire protection, the City's public water system shall be protected by an air gap separation or a reduced pressure principle assembly.
- (7) In the case of any premises where toxic substances are used for fire protection that could pose an undue health hazard, the City may require an air gap separation or reduced pressure principle assembly at the service connection to protect the City's public water system.

ORDINANCE NO. 2017-06

Section 6. Lawn Irrigation Systems

- (1) For all public water systems to protect their distribution system, lawn irrigation systems will be protected by a reduced principle assembly or reduced pressure principle detector assembly.
- (2) Double check valves cannot be used for lawn irrigation systems for either public or well water users.

Section 7. Assembly Evaluations and testing

- (1) All backflow prevention assemblies used to protect the City's public water supply system must be inspected and tested on every new and repaired assembly before its acceptance by the city and before use.
- (2) All backflow prevention assemblies must be tested no less than once every twelve (12) months or more often as deemed necessary by the city.
- (3) All backflow prevention assemblies will be tested by persons possessing a valid Certification of Competency in Testing and Evaluation of Backflow Prevention Assemblies issued by the Tennessee Department of Conservation, Division of Water Supply and using a valid Test Kit Certification.
- (4) Proof of annual Test Kit Certifications and Tester's Certifications must be sent with each test report submitted to the City. Test reports must be compiled and accurately documented.
- (5) If any test does not meet the minimum requirements set forth in the approved testing procedure, the assembly shall be deemed as **Failed**. Should conditions around the assembly not allow the assembly to be tested, the assembly shall be deemed as **Failed**.
- (6) Documentation of backflow prevention assemblies, along with any assembly's location, make, model, size and serial number will be maintained by the City. If an existing assembly is replaced, the City shall be notified so that initial testing and documentation can be completed to ensure the protection of the City's public water supply system.

Section 8. Existing Assemblies

- (1) All backflow prevention assemblies which were installed prior to the adoption of this ordinance and which met with the standards of the Tennessee

ORDINANCE NO. 2017-06

Department of Conservation, Division of Water Supply, may at the sole discretion of the City, remain in service. However, if the condition of the assemblies constitutes a health hazard or replacement is required of the assembly, such assembly will be brought up to current requirements as set forth in this ordinance.

- (2) Location or space requirements shall not be cause for re-location or replacement of any backflow prevention assembly that is installed as of the date of the adoption of this ordinance so long as the location or spacing of the backflow assembly is installed in a safe location for testing and inspection purposes.

Section9. Additional Water Source

Any person whose premises are supplied with water from the City's public water system who also has on the same premises a separate source of water, such as a well or an uncovered or unsanitary storage reservoir where water is circulated through a piping system, shall have the City's water source protected with an approved backflow prevention assembly.

Section10. Plumbing

Prior to any new installation(s), alteration(s) or change(s) of any backflow prevention assembly connected to the City's public water supply, fire protection or any other purpose, a cross connection permit from the City is required.

Section11. Corrections of Violations

- (1) Where cross-connections, auxiliary intakes, bypasses, interconnections, or failed assemblies are in violation of this ordinance, the premises shall be classified as a High Risk Hazard. The customer will be given a time certain by which to come into compliance.
- (2) Failure to maintain a backflow prevention assembly or the removal, bypass or alteration of a protective device or installation without the approval of the City, shall be cause for the denial, discontinuance, or termination of water service. The City shall give the customer written notification within (5) business days that water services are to be discontinued. If necessary, the public water system shall be physically separated from the customer's system at the customer's expense to be added to the customer's water bill.
- (3) Any repairs to backflow prevention assemblies shall be inspected and/or tested by persons possessing a Certification of Competency in Testing and Evaluation of Backflow Prevention Assemblies.

ORDINANCE NO. 2017-06

- (4) All expenses relating to correction of violations shall be borne by the customer.

Section 12. Penalty

- (1) Any person who fails to comply with any of the provisions of this ordinance shall be subject to discontinuance, or termination of water service after proper notification. In addition, the City may recover reasonable attorney's fees, court costs, court reporters' fee and any and all other expenses of litigation by appropriate suit of law against the violator of this ordinance.

Section 13. This Ordinance shall take effect upon final passage, the public welfare requiring it.

Passed on First Reading August 3, ,2017

Passed on Second Reading September 7, ,2017

Andy Lawhorn

Mayor Andy Lawhorn

Janet Ledbetter

City Recorder Janet Ledbetter