

CROSS CONNECTION POLICY

ADOPTION DATE March 20, 2008

EFFECTIVE DATE March 20, 2008

RESPONSIBLE FOR ADMINISTERING POLICY:
MANAGER, GOVERNING BOARD

BACKGROUND AND PURPOSE:

This policy sets forth uniform requirements for the protection of the public water system for the River Road Utility District from possible contamination, and enables the River Road Utility District to comply with all applicable local, State and Federal laws, regulations, standards or requirements, including the Safe Drinking Water Act of 1996, TCA 68-221-701 to 68-221-720 and the Rules and Regulations for Public Water Systems and Drinking Water Quality issued by the Tennessee Department of Environment and Conservation, Division of Water Supply.

Objectives.

The objectives of this policy are to:

- (1) To protect the public potable water system of River Road Utility District from the possibility of contamination or pollution by isolating within the customer's internal distribution system, such contaminants or pollutants that could backflow or backsiphon into the public water system;
- (2) To promote the elimination or control of existing cross connections, actual or potential, between the customer's in-house potable water system and non-potable water systems, plumbing fixtures, and industrial piping system;
- (3) To provide for the maintenance of a continuing program of cross connection control that will systematically and effectively prevent the contamination or pollution of all potable water systems.

Definitions:

The following words, terms, and phrases shall have the meanings ascribed to them in this section, when used in the interpretation and enforcement of this article.

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 a 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. **Annually** shall mean 12 months
3. **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.
4. **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.

5. **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.
6. **Backpressure** shall mean any elevation of pressure in the downstream piping system (caused by pump, elevated tank or piping, steam and/or air pressure) above the water supply pressure at the point which would cause, or tend to cause, a reversal of the normal direction of flow.
7. **Backsiphonage** shall mean the flow of water or other liquids, mixtures or substances into the potable water system from any other source other than its intended source, caused by the reduction of pressure in the potable water system.
8. **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.
9. **Contamination**: The introduction or admission of any foreign substances that causes illness or death.
10. **Contaminant**: Any substance introduced into the public water system that will cause illness or death
11. **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.
12. **Double check valve assembly** shall mean an assembly of two (2) independently operating, approved check valves with tightly closing resilient seated shut-off valves on each side of the check valves, fitted with properly located resilient seated test cocks for testing each check valve.
13. **Double check detector assembly** shall mean an assembly of two (2) independently operating, approved check valves with an approved water meter (protected by another double check valve assembly) connected across the check valves, with tightly closing resilient seated shut-off valves on each side of the check valves, fitted with properly located resilient seated test cocks for testing each part of the assembly.
14. **Failed**: The status of a backflow prevention assembly determined by a performance evaluation based on the failure to meet all minimums set forth by the approved testing procedure.
15. **Fire protection systems** shall be classified in six different classes in accordance with **AWWA Manual M14 – Second Edition 1990**. The six classes are as follows:

Class 1 shall be those with direct connections from public water mains only – no pumps, tanks, or Reservoirs; no physical connection from other water supplies; no antifreeze or other additives of any kind; all sprinkler drains discharging to the atmosphere, dry wells or other safe outlets.

Class 2 shall be the same as **Class 1**, except that booster pumps may be installed in the connections from the street mains.

Class 3 shall be those with direct connections from public water supply mains, plus one or more of the following: elevated storage tanks, fire pumps taking suction from above ground covered reservoirs or tanks, and/or pressure tanks (all storage facilities are filled from or connected to public water only, and the water in the tanks is to be maintained in a potable condition).

Class 4 shall be those with direct connection from the public water supply mains, similar to **Class 1 and Class 2** with an auxiliary water supply dedicated to fire department use and available to the premises, such as an auxiliary supply located within 1700 ft. of the pumper connection.

Class 5 shall be those directly supplied from public water mains and interconnected with auxiliary supplies, such as pumps taking suction from reservoirs exposed to contamination, or rivers and pond; driven wells, mills or other industrial water systems, or where antifreeze or other additives are used.

Class 6 shall be those with combined industrial and fire protection systems supplied from the public water mains only, with or without gravity storage or pump suction tanks.

16. **Hazard, Degree of:** A term derived from evaluation of the potential risk to public health and the adverse effect of the hazard upon the public water system.
17. **Hazard, Health:** A cross-connection or potential cross-connection involving any substance that could, if introduced in the public water supply, caused death, illness, and spread disease also known as a **High Hazard**.
18. **Hazard, Non-health:** A cross-connection or potential cross-connection involving any substance that would not be a health hazard but would constitute a nuisance or be aesthetically objectionable if introduced into the public water supply also known as **Low Hazard**.
19. **Interconnection** shall mean any system of piping or other arrangements whereby the public water supply is connected directly with a sewer, drain, conduit, pool, storage reservoir, or other device which does or may contain sewage or other waste or liquid which would be capable of imparting contamination to the public water system.
20. **Manager** shall mean the Manager of the River Road Utility District or his duly authorized deputy, agent or representative.
21. **Passed:** The status of a backflow prevention assembly determined by a performance evaluation in which the assembly meets all minimums set forth by the approved testing procedure.
22. **Performance Evaluation:** An evaluation of an approved Double Check Valve Assembly or Reduced Pressure Principle Assembly (including approved Detector Assemblies) using the latest approved testing procedures in determining the status of the assembly.
23. **Pollutant:** A substance in the public water system that would constitute a non-health hazard and would be aesthetically objectionable if introduced into the public water supply.
24. **Pollution:** The presence of a pollutant or substance in the public water system that degrades its quality so as to constitute a non-health hazard.
25. **Person** shall mean any and all persons, natural or artificial, including any individual, firm or Association, and any municipal or private corporation organized or existing under the laws of this or any other state or country.
26. **Potable water** shall mean water, which meets the criteria of the Tennessee Department of Environment and Conservation and the United States Environmental Protection Agency for human consumption.

27. **Pressure vacuum breaker** shall mean an assembly consisting of a device containing one (1) or two (2) independently operating spring loaded check valves and an independently operating spring loaded air inlet valve located on the discharge side of the check valve(s), with tightly closing shut-off valves on each side of the check valves and properly located test cocks for the testing of the check valves and relief valve.
28. **Public water supply** shall mean the River Road Utility District water system, which furnishes potable water to the public for general use and which is recognized as the public water supply by the Tennessee Department of Environment and Conservation.
29. **Reduced pressure principle backflow prevention device** shall mean any assembly consisting of two 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 valves.
30. **Survey**: An evaluation of a premise by a water system performed for the determination of actual or potential cross-connection hazards and the appropriate backflow prevention needed.
31. **Water System** shall be considered as made up of two (2) parts, the utility system and the customer system.
 - a. The utility system shall consist of the facilities for the storage and distribution of water and shall include all those facilities of the water system under the complete control of the utility system, up to the point where the customer's system begins (i.e. the water meter);
 - b. The customer system shall include those parts of the facilities beyond the termination of the utility system distribution system that are utilized in conveying domestic water to points of use.

Compliance with T.C.A.

The River Road Utility District shall be responsible for the protection of the public water system from contamination or pollution due to the backflow of contaminants through the water service connection. The River Road Utility District shall comply with Section 68-221-711(6) of the Tennessee Code Annotated, as well as the Rules and Regulations for Public Water Systems and Drinking Water Quality, legally adopted in accordance with this Code, which pertain to cross connections, auxiliary intakes, bypasses and inter-connections; and shall establish an effective, on-going program to control these undesirable water uses.

Regulated

- (1) No water service connection to any premise shall be installed or maintained by the River Road Utility District system unless the water supply system is protected as required by state laws and this policy. Service of water to any premises shall be discontinued by the utility system if a backflow prevention device required by this policy is not installed, tested, and/or maintained; or if it is found that a backflow prevention device has been removed, bypassed, or if an unprotected cross connection exists on the premises. Service shall not be restored until such conditions or defects are corrected.
- (2) It shall be unlawful for any person to cause a cross connection to be made or allow one to exist for any purpose whatsoever unless the construction and operation of same have been approved by the Tennessee Department of Environment and Conservation, and the operation of such cross connection is at all times under the direction of the manager of the River Road Utility District.
- (3) If, the judgment of the manager or his designated agent, an approved backflow prevention device is required at the water service connection to a customer's premises, or at any point (s) within the premises, to protect the potable water supply, the manager shall compel the installation, testing and maintenance of the required backflow prevention device(s) at the customer's expense.

Permit Required

New Installations

No installation, alteration, or change shall be made to any backflow prevention device connected to the public water supply for water service, fire protection or any other purpose without first contacting the River Road Utility District for approval.

An **Installation/Maintenance Tag** shall be installed on the device following installation and testing, and shall be removed only by personnel from the River Road Utility District at the time of inspection. One copy of the Cross-Connection Control Devices Test Report shall be submitted to the River Road Utility District upon completion of the installation and testing.

Existing Installations

No alteration, repair, testing or change shall be made of any existing backflow prevention device connected to the public water supply for water service, fire protection or any other purpose without first securing the appropriate approval and a **Cross Connection Control Devices Test Report and an installation /Maintenance Tag**. The Installation/Maintenance Tag shall be installed on the device following alteration, repair and /or testing, and shall only be removed by personnel from the River Road Utility District.

Inspections

The manager or his designated agent shall inspect all properties served by the public water supply where cross connections with the public water supply are deemed possible. The frequency of inspections and reinspection shall be based on potential health hazards involved, and shall be established by the River Road Utility District in accordance with guidelines acceptable to the Tennessee Department of Environment and Conservation. Non-Residential sites such as Markets and Restaurants shall be inspected every 5 years maximum or as need requires. Residential sites shall be inspected upon any suspicion of cross-connection.

Right of Entry for Inspections

The manager or his authorized representative shall have the right to enter, at any reasonable time, any property served by a connection to the River Road Utility District public water system for the purpose of inspecting the piping system therein for cross connection, auxiliary intakes, bypasses or interconnections, or for the testing of backflow prevention devices. Upon request, the owner, lessee, or occupant of any property so served shall furnish any pertinent information regarding the piping system(s) on such property. The refusal of such information or refusal of access, when requested, shall be deemed evidence of the presence of cross connections and shall be grounds for disconnection of water service.

Correction of Violations

- (1) Any person found to have cross connections, auxiliary intakes, bypasses or interconnections in violation of the provisions of this policy shall be allowed a reasonable time within which to comply with the provisions of this policy, normally 15 days for existing devices and 60 days for new installation. After a thorough investigation of the existing conditions and an appraisal of the time required to complete the work, an appropriate amount of time shall be assigned by the manager or his representative, but in no case shall the time for corrective measures exceed ninety (90) days.
- (2) Where cross connections, auxiliary intakes, bypasses or interconnections are found that constitute an extreme hazard, with the immediate possibility of contaminating the public water system, the River Road Utility District shall require that immediate corrective action to be taken to eliminate the threat to the public water system. Expedient steps shall be taken to disconnect the public water system from the on-site piping systems unless the imminent hazard is immediately corrected, subject to the right to a due process hearing upon timely request. The time allowed for preparation for a due process hearing shall be relative to the risk of hazard to the public health and may followed disconnection when the risk to the public health and safety, in the opinion of the manager, warrants disconnection prior to a due process hearing. Hazard examples: Swimming pools, irrigation, water tanks w/live bait, hoses connected to hazardous materials, etc.

- (3) The failure to correct conditions threatening the safety of the public water system as prohibited by this policy and Tennessee Code Annotated, Section 68-221-711, within the time limits established by the manager or his representative, (usually 15 days for existing devices and 60 days for new installation) shall be grounds for denial of water service. If proper protection has not been provided after a reasonable time, the manager shall give the customer legal notification that water service is to be discontinued, and shall physically separate the public water system from the customer's on-site piping in such a manner that the two systems cannot again be connected by an unauthorized person, subject to the right of a due process hearing upon timely request. The due process hearing may follow disconnection when the risk to the public health and safety, in the opinion of the manager, warrants disconnection prior to a due process hearing.

Required Devices

Where the nature of the use of water supplied to a premises by the River Road Utility District water system is such that it is deemed:

- a. Impractical to provide an effective air-gap separation;
- b. The owner/occupant of the premises cannot or is not willing to demonstrate to the utility that the water use and protection features of the plumbing are such as to pose no threat to the safety or potability of the water;
- c. The nature and mode of operation within a premises are such that frequent alternations are made to the plumbing;
- d. There is likelihood that protective measures may be subverted, altered or disconnected;
- e. The nature of the premises is such that the use of the structure may change to a use wherein backflow prevention is required.
- f. The plumbing from a private well enters the premises served by the public water system, then the utility shall require the use of an approved protective device on the water service line serving the premises to assure that any contamination that may originate in the customer's premises is contained therein.
- g. Establishments containing potential cross-connection hazards as listed in Appendix A.

The following establishments will require a Reduced Pressure Principle Assemblies (or Detector) as premises isolation:

1. Mortuaries, morgues, autopsy facilities
2. Hospitals, medical buildings, animal hospitals and control centers, doctor and dental offices
3. Sewage treatment facilities, water treatment, sewage and water treatment pump stations
4. Premises with auxiliary water supplies or industrial piping systems
5. Chemical plants (manufacturing, processing, compounding, or treatment)
6. Laboratories (industrial, commercial, medical research, school)
7. Packing and rendering houses
8. Manufacturing plants
9. Food and beverage processing plants
10. Automated car wash facilities
11. Extermination companies
12. Airports, railroads, bus terminals, piers, boat docks
13. Bulk distributors and users of pesticides, herbicides, liquid fertilizer, etc.
14. Metal plating, pickling, and anodizing operations
15. Greenhouses and nurseries
16. Commercial laundries and dry cleaners
17. Film Laboratories
18. Petroleum processes and storage plants
19. Restricted establishments
20. Schools and Educational Facilities
21. Animal feedlots, chicken houses, and CAFOs

- 22. Taxidermy facilities
 - 23. Establishments which handle, process, or have extremely toxic or large amounts of toxic chemicals or use water of unknown or unsafe quality extensively.
- (1) The protective devices shall be of the type approved by the Tennessee Department of Environment and Conservation and the utility, as to manufacture, model, size and application. The method of installation of backflow prevention devices shall be approved by the utility prior to installation and shall comply with the criteria set forth in this policy. The installation and maintenance of backflow prevention devices shall be at the expense of the owner or occupant of the premises.
 - (2) **Applications requiring backflow prevention devices** shall include, but shall not be limited to, domestic water service and/or fire flow connections for all commercial and educational buildings, construction sites, institutional and medical facilities, lawn irrigation systems and on all fire hydrants connections other than those by the fire department in combating fires.
 - (3) The manager or his representative may require additional and/or internal backflow prevention devices wherein it is deemed necessary to protect potable water supplies within the premises.

Approved Backflow Prevention Assemblies and Methods

- A. All backflow prevention assemblies shall be fully approved and listed as acceptable by the State of Tennessee as to manufacture, model, size, application, orientation, and alterations. The installed assembly must have a status of **Passed** determined by performance evaluations to suffice as an approved backflow prevention assembly. The method of installation of backflow prevention devices shall comply with installation criteria set forth by this policy/ordinance and the State of Tennessee. Installation shall be at the sole expense of the owner of the owner or occupant of the premises.
- B. The type of protective assembly required by this Policy shall depend on the degree of hazard that exists. Reduced Pressure Principle Assemblies (and/or Detector) may be used for health hazards and non-health hazards. Double Check Valve Assemblies (and/or Detector) may **only** be used for non-health hazards and is limited to Class 1-3 fire systems only.
- C. Pressure vacuum breakers, spill-resistant vacuum breakers, and atmospheric vacuum breaker are not allowed for premise isolation and will not satisfy the requirements of this Policy/Ordinance for adequate backflow prevention due in part to the inability to protect against backpressure.

Installation Criteria

The minimum acceptable criteria for the installation of reduced pressure backflow prevention devices, double check valve assemblies or other backflow prevention devices requiring regular inspection or testing shall include the following:

- a. All required devices shall be installed in accordance with the provisions of this policy, by a person certified by the Tennessee Department of Environment and Conservation, Division of Drinking Supply or its successor. Certification shall be for **completion of special training and demonstration of competency in the installation, maintenance and testing of backflow prevention devices**. Evidence of current shall be required at the time of permit application and installation. Only licensed sprinkler contractors may install, repair or test backflow prevention devices on fire protection systems.
- b. An approved backflow prevention assembly shall be installed on each service line to a customer's premises and in all cases, before the first branch line leading off the service line, if it is impractical or easily altered to provide an effective air gap separation, when any of the following conditions exist.
- c. All devices shall be installed in accordance with the manufacturer's instructions and shall possess appropriate test cocks, fittings and caps required for the testing of the device. All fittings shall be of brass construction, unless otherwise approved by the utility, and shall permit direct connection to department test equipment.

- d. The entire device, including valves and test cocks, shall be easily accessible for testing and repair.
- e. All devices shall be placed in the upright position in a horizontal run of pipe.
- f. Device shall be protected from freezing, vandalism, mechanical abuse and from any corrosive, sticky, greasy, abrasive or other damaging environment.
- g. Reduced Pressure Backflow Prevention devices shall be located a minimum of twelve (12") inches plus the nominal diameter of the device above either; 1) the floor, 2) the top of opening(s) in the enclosure or 3) maximum flood level, whichever is higher. Maximum height above the floor surface shall not exceed sixty (60") inches.
- h. Clearance from wall surfaces or other obstructions shall be at least six (6") inches. Devices located in non-removal enclosures shall have at least twenty-four (24") inches of clearance on each side of the device for testing and repairs.
- i. Devices shall be positioned where a discharge from the relief port will not create undesirable conditions. The relief port must never be plugged, restricted or solidly piped to a drain.
- j. An approved air-gap shall separate the relief port from any drainage system. An approved air-gap shall be at least twice the inside diameter of the supply line, but never less than one (1") inch.
- k. An approved strainer shall be installed immediately upstream of the backflow prevention device, **except in the case of a fire protection system.**
- l. Devices shall be located in an area free from submergence or flood potential, therefore never in a below grade pit or vault. All devices shall be adequately supported to prevent sagging.
- m. Adequate drainage shall be provided for all devices. Reduced Pressure Backflow Prevention devices shall be drained to the outside whenever possible.
- n. Fire hydrant drains shall not be connected to the sewer, nor shall fire hydrants be installed such that backflow/backsiphonage through the drain may occur.
- o. Enclosures for outside installations shall meet the following criteria:
 - 1. All enclosures for backflow prevention devices shall be as manufactured by a AWWA approved company or an approved equal.
 - 2. For backflow prevention devices up to and including two (2") inches, the enclosure shall be constructed of:

SAMPLE SPECIFICATION

5052-H32 aluminum, or an approved equal material, with a minimum of 1.5" factory manufactured polyisocyanurate insulation in the walls and roof. For backflow prevention devices 2-1/2" and larger, the enclosure shall be constructed of 5052-H32 aluminum, or an approved equal material, with a minimum of 1.5" factory manufactured polyisocyanurate insulation in the walls and 3" factory manufactured polyisocyanurate insulation in the roof.

The complete assembly, including valve stems and hand wheels, shall be protected by being inside the enclosure.

- 3. To provide access for backflow prevention devices up to and including two (2") inches, the enclosures shall be completely removable. Access for backflow prevention devices 2-1/2" and larger shall be provided through a minimum of two access panels. The access panels shall be of the same height as the enclosure and shall be completely removable. All access panels shall be provided with built-in locks.
 - 4. The enclosure shall be mounted to a concrete pad as specified by the manufacturer, but in no case less than four (4") inches thick. The enclosure shall be constructed, assembled and/or mounted in such a manner that it will remain locked and secured to the pad even if any outside fasteners are removed. All hardware and fasteners shall be constructed of 300 series stainless steel.
 - 5. Heating equipment, if required, shall be designed and furnished by the manufacturer of the enclosure to maintain an interior temperature of +40 degrees F with an outside temperature of -30 degrees F and a wind velocity of 115 miles per hour.
- p. Where the use of water is critical to the continuance of normal operations or the protection of life, property, or equipment, duplicate backflow prevention devices shall be provided to avoid the necessity of discontinuing water service to test or repair the protective device. Where it is found that only one device has been installed and the continuance of service is critical, the utility shall notify, in writing, the occupant of the premises of plans to interrupt water services and arrange for a mutually acceptable time to test the device. In such cases, the utility may require the installation

of a duplicate device.

- q. The utility shall require the occupant of the premises to keep any backflow prevention devices working properly, and to make all indicated repairs promptly. Repairs shall be made by qualified personnel, possessing valid certification from the Tennessee Department of Environment and Conservation, Division of Water Supply, acceptable to the utility. Expense of such repairs shall be borne by the owner or occupant of the premises. The failure to maintain a backflow prevention device in proper working condition shall be grounds for discontinuance of water service to premises. Likewise the removal, bypassing or alteration of a backflow prevention device or the installation thereof, so as to render a device ineffective shall constitute a violation of this policy and shall be grounds for discontinuance of water service. Water service to such premises shall not be restored until the customer has corrected or eliminated such conditions or defects to the satisfaction of the utility.

Testing of Devices. The Customer shall have Devices tested at least annually by a qualified person possessing a valid certification from the Tennessee Department of Environment and Conservation, Division of Water Supply for the testing of such devices. A record of this test shall be submitted to the Utility and to the customer. Water service shall not be disrupted to test a device without the knowledge of the occupant of the premises. Devices that fail testing shall be repaired and re-tested within 14 days for high risk high hazard, 90 days maximum for high risk and low hazards. Failure of this requirement will require termination of water service.

- a. All assemblies used to protect the public water system must be tested every 12 months. In those instances where the Cross-Connection Coordinator deems the hazard to be great enough (Criteria should be listed), performance evaluation may be required at more frequent intervals.
- b. Any assembly not tested with 12 month period will be deemed not approved and have a status of **Failed**. The customer will be sent notification of that the assembly is not in compliance with this policy.
- c. All assemblies must be deemed **Passed** for each initial and subsequent annual performance evaluations to satisfy as approved backflow prevention assembly.
- d. All assemblies will be tested by backflow prevention assembly tester possessing a **valid Certificate of Competency in Testing and Evaluation Backflow Prevention Assemblies** issued by the State of Tennessee.
- e. All performance evaluation must be performed with an annually certified test kit.
- f. Certifications for test kits are valid for one year after certification is performed. If the test kit is not recertified after one year, it is deemed expired.
- g. Test kits must be certified annually and the backflow prevention assembly tester must show proof of certification from manufacturer-approved entities. No performance evaluations will be accepted from a backflow prevention assembly tester with an expired test kit certification.
- h. Proof of annual test kit certification and Certificate of Competency must be kept on file for each tester by water provider.
- i. Backflow Prevention Assembly Testers must test and evaluate according to the latest Division of Water Supply's latest approved procedures for Reduced Pressure Principle Assembly and the Double Check Valve Assembly.

- j. If any test does not meet the minimum requirements set forth in the approved testing procedure, the assembly is deemed **Failed** and does not suffice as an approved backflow prevention device. If conditions around the assembly do not allow the assembly to be tested, the assembly fails the assembly performance evaluation and is marked **Failed** on test report. (Examples would include assembly is submerged, test cocks missing or plugged, relief valve continually discharging).
- k. Backflow Prevention Assemblies are deemed **Passed** if all parts of the performance evaluation meet the minimum requirements in the approved testing procedure.
- l. Each location requiring an assembly will have a documented backflow prevention assembly, if the assembly at the address cannot be identified or is not the same, the water provider will be notified and a determination of which assembly is used for protection of the water system. (All areas that need protection will be listed by address and location along with the serial no. of device)
- m. Test reports must be completely and accurately documented and the appropriate evaluation (**Passed** or **Failed**) determined from testing procedure. Any test report that is not recorded completely in the sections pertinent to the results of the performance evaluation tests will not be accepted by the Public Water System.
- n. All performance evaluations on file will be recorded on an (State and Water System) approved test report.
- o. Assemblies must be tested when installed and after every repair. Backflow prevention assemblies on lawn irrigation systems must be tested when assemblies are placed in service after winterization (To prevent testing just prior to winterization). If lawn irrigation backflow assemblies are taken removed to winterize the system, upon startup of the system, the assemblies must be retested.
- p. Failure to maintain a backflow prevention assembly that is deemed **Passed** shall be grounds for discontinuance of water service. The removal, bypassing, or altering of a protective device or installation, without the approval of the Cross-Connection Control Coordinator or designee, thereof so as to render a device ineffective shall constitute grounds for discontinuance of water service. Water service to such premises shall not be restored until the customer has corrected or eliminated such conditions or defects to the satisfaction this policy and the Cross-Connection Control Coordinator or designee.
- q. Community Water System shall require the occupant of the premises to keep the backflow prevention assembly working properly and a status of **Passed**. Repairs shall be made by qualified personnel acceptable to River Road Utility District within the time limits set forth by this policy. Expense of such repairs shall be borne by the owner or occupant of the premises. The failure to maintain a backflow prevention assembly in proper working order and a status of Passed shall be grounds for discontinuance of water service.
- r. The backflow prevention assembly must be tested after every repair and have a status of **Passed** to be in compliance with this policy.
- s. Cross-Connection Control Coordinator or designee shall have the right to inspect and test any assemblies whenever it is deemed necessary. Water service shall not be disrupted to the assembly without the knowledge of the occupant of the premises.

Nonpotable Supplies

The potable water supply made available to a premises served by the public water system shall be protected from contamination as specified in the provisions of this policy. Any water pipe or outlet which could be used for potable or domestic purposes and which is not supplied by the potable water system must be labeled in a conspicuous manner such as:

Conflicting Provisions

If any provision of this policy is found to conflict with any provision of any other policy, then the provision of this ordinance shall control. That should any part, or parts of this policy be declared invalid for any reason, no other part, or parts, of this ordinance shall be affected thereby.

Thermal Expansion Control

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.

Water Heater Temperature-Pressure Relief Valves

All storage water heaters operation above atmospheric pressure shall be provided with an approved, self-closing (levered) pressure relief and temperature valve or combination thereof, except for nonstorage instantaneous heaters. Such valves shall be installed in the shell of the water heater tank or may be installed in hot water outlet, provided the thermo-bulb extends into the shell of the tank. Temperature relief valves shall be so located in the tank as to be actuated by water in the top 1/8 of the tank served.

For installations with separate storage tank, said valve shall be installed on the tank and there shall not be any type of valve installed between the water heater and the storage tank. There shall not be a check valve or shut off valve between a relief valve and the heater or tank which it serves. The relief valve shall not be used as a means of controlling thermal expansion.

Safety Standards-Duplicate Equipment in Parallel Required

Where the use of water is critical to the continuation of normal operations or protection of life, property, or equipment, duplicate units shall be provided to avoid the necessity of discontinuing water service to test or repair a backflow prevention assembly. Until such time as a parallel unit has been installed where the continuance of service is critical, the Cross-Connection Control Manager/Coordinator or designee shall notify the occupant of the premises, in writing, of plans to interrupt water service and arrange for a mutually acceptable time to test or repair the assembly.

Existing Backflow Prevention Assemblies

- A. All presently installed backflow prevention assemblies which were previously acceptable to the State of Tennessee that complies with installation, testing, and maintenance requirements of this policy/ordinance and in the sole discretion of the Cross-Connection Control Coordinator or designee adequately protect the public water system from backflow and that were approved assemblies for the purpose described herein at the time of installation may be retained in service.
- B. Location or space requirements shall not be cause for re-location or replacement of any backflow prevention assembly that is presently installed in a vertical run of pipe shall be replaced, reinstalled, in an approved manner in a horizontal run of pipe.

- C. Wherever an existing assembly is moved from the present location, or when the inspector finds that the conditions of the assembly constitutes a health hazard, the unit shall be replaced by the backflow prevention assembly meeting the requirements of this policy.

WATER UNSAFE FOR DRINKING

The minimum acceptable sign shall have black letters at least one (1") inch high located on a red background. Color coding of pipelines, in accordance with (OSHA) Occupational safety and Health Act guidelines, shall be required in locations where in the judgment of the utility, such coding is necessary to identify and protect the potable water supply.

Statement Required

Any person whose premises are supplied with water from the public water system, and who also has on the same premises a well or other separate source of water supply, or who stores water in an uncovered or unsanitary storage reservoir from which the water is circulated through a piping system, shall file with the utility a statement of the nonexistence of unapproved or unauthorized cross connections, auxiliary intakes, bypasses or interconnections. Such statements shall contain an agreement that no cross connections, auxiliary intakes, bypasses or interconnections will be permitted upon the premises. Such statements shall also include the location of all additional water sources utilized on the premises and how they are used. Maximum backflow protection shall be required on all public water sources supplied to the premises.

Penalty; Discontinuance of water supply

- (1) Any person who neglects or refuses to comply with any of the provisions of this policy may be deemed guilty of a misdemeanor and subject to a fine.
- (2) Independent of and in addition to any fines or penalties imposed, the manager will discontinue the public water supply service to any premises upon which there is found to be a cross connection, auxiliary intake, bypass or interconnection; and service shall not be restored until such cross connection, auxiliary intake, bypass or interconnection has been eliminated or approved backflow protection is installed within time limits set forth by this policy.

Provision Applicable

The requirements contained in this policy shall apply to all premises served by the River Road Utility District and are hereby made part of the conditions required to be met for the River Road Utility District to provide water services to any premises. The provisions of this policy shall be rigidly enforced since it is essential for the protection of the public water distribution system against the entrance of contamination. Any person aggrieved by the action of the policy is entitled to a due process hearing upon timely request.

Effective Date

This policy/ordinance shall take effect from and after its passage and publication as the law directs, the public welfare requiring it.

Approved this _____ day of _____, 2_____

Approval Signatures

River Road Utility District Board approval

Board President

Signed: _____

Date: _____

Board Vice-President

Signed: _____

Date: _____

Board Secretary

Signed: _____

Date: _____

State Approval: _____

Date: _____

Appendix A

(TO POLICY)

Equipment posing significant risk of creating cross-connections.

Establishments with equipment list will normally require premise isolation with a Reduced Pressure Principle Assembly depending on hazard unless otherwise found to have an appropriate air gap.

Many devices or equipment below may be designed and constructed with approved air gaps that would adequately protect the water system. However, the cross-connection control inspector should consider and make judgments on the amount risk that the establishment poses to the distribution and not solely on the presence or absence of the devices, situations, or equipment listed below.

The following is an incomplete list of equipment normally requiring backflow prevention assemblies, it is to be noted that any connection with piping, equipment, or devices that contain or may contain substances that are pollutants or contaminants will require premises isolation.

Air-conditioning systems (using water for processing)

Aspirators

Air lines

Autoclaves and sterilizers

Auxiliary systems

Baptismal tanks

Bathtubs (Hard Piped)

Bedpan washers

Bidets

Booster pumps

Brine tanks, softeners

Boilers

Car wash equipment

Chemical feeders

Chillers

Chlorination equipment

Coffee urns

Commercial cookers

Condensers

Compressors

Cooling systems

Cooling towers

Culture vats

Cuspidor, dental

Developing equipment

Dishwashers (commercial_

Display fountains
Drinking fountains
Ejectors, steam or water
Extractors
Fire protection systems, standpipes, sprinkler systems and drain lines
Fish tanks, ponds
Floor drains
Food mixing tanks
Frost-free toilets, hydrants, and fountains
Garbage grinders
Garbage can washers
Garden sprayers
Heat exchangers
Humidity controls
Hydraulic equipment
Hydraulic insecticide or fertilizer applicators
Hydraulic lifts
Ice makers
Irrigation systems, lawn sprinklers
Kitchen equipment
Laboratory equipment
Laundry equipment
Lavatories
Lawn sprinklers
Liquid handling systems
Lubrication, pump bearings
Medical equipment
Pest control equipment
Photo laboratory sinks
Potato peelers
Pressure cookers
Process water circulation systems
Pump, priming systems
Sewer flush tanks
Shampoo sinks, basins
Showers, telephone type shower heads
Sinks, slop sinks
Soda fountains
Solar water and space heating equipment
Steam boilers
Steam tables
Stop and waste vales
Swimming pools, ponds, fountains
Tank and vats
Therapeutic tanks, spas, and hot tubs
Threaded hose bibbs

Toilets, flushometer, flush tank, ballcock, flush valve siphon jet
Vegetable peelers
Vacuum systems
Urinals (siphon set blowout)
Vacuum systems (water operated with water seals)
Water treatment devices
Water troughs
Water-using mechanical equipment
Water Jacketed tanks, vats, cookers