Cross-Connection Control Policy

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Water Association

Approved:

Amended:

I. **Purpose**

A. To protect the water supplied to the public by the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Water Association from the possibility of contamination or pollution by isolating within its customers’ internal distribution systems such contaminants or pollutants that could backflow or back-siphon into the public water system.

B. To promote the elimination or control of existing cross-connections, actual or potential, between its customers’ in-plant potable water system and non-potable systems.

C. To provide for the maintenance of a continuing program of cross-connection control that will effectively prevent the contamination or pollution of all potable water systems by cross-connection.

II. **Authority**

A. The federal Safe Drinking Water Act of 1974, and the statutes of the State of \_\_\_\_, Chapters \_\_\_\_, the water purveyor that has the primary responsibility for preventing water from unapproved sources, or any other substances, from entering the public potable water system.

B. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Water Association, Rules and Regulations, adopted **[date]**.

III. **Responsibility**

The director of municipal services shall be responsible for the protection of the public potable water distribution system from contamination or pollution due to the backflow or backsiphonage of contamination or pollutants through the water-service connection. If, in the judgment of the director of municipal services, an approved backflow device is required at the city’s water service connection to any customer’s premises, the director or his/her delegated agent shall give notice in writing to the customer to install an approved backflow-prevention device at each service connection to his/her premises. The customer shall, within 90 days, install such a device (or devices) at his/her own expense. Failure or refusal or inability on the part of the customer to install such device or devices within ninety (90) days shall constitute a ground for discontinuing water service to the premises until such device or devices have been properly installed.

IV. **Definitions**

A. **Air gap:** A physical separation sufficient to prevent backflow between the free-flowing discharge end of the potable water system and any other system. Physically defined as a distance equal to twice the diameter of the supply-side pipe diameter, but never less than one inch.

B. **Approved:** Accepted by the director of municipal services as meeting an applicable specification stated or cited in this regulation, or as suitable for the proposed use.

C. **Atmospheric vacuum breaker:** A device that prevents backsiphonage by creating an atmospheric vent when there is either a negative pressure or subatmospheric pressure in a water system.

**D. Auxiliary water supply:** Any water supply, on or available, to the premises other than the purveyor’s approved public potable water supply.

**E. Backflow:** The flow of water or other liquids, mixtures, or substances, under positive or reduced pressure in the distribution pipes of a potable water supply from any source other than its intended source.

**F. Backflow preventer:** A device or means designed to prevent backflow or back-siphonage. Most commonly categorized as air gap, reduced pressure-principle device, double check valve assembly, pressure vacuum breaker, atmospheric vacuum breaker, hose bibb vacuum breaker, residential dual check valve, double check valve with intermediate atmospheric vent, and barometric loop.

**G. Backpressure:** A condition in which the owner’s system pressure is greater than the supplier’s system pressure.

**H. Back-siphonage:** The flow of water or other liquids, mixtures or substances into the distribution pipes of a potable water supply system from any source other than the intended source, caused by the sudden reduction of pressure in the potable water system.

**I. Barometric loop:** A fabricated piping arrangement rising at least 35 feet at its topmost point above the highest fixture it supplies. It is utilized in water supply systems to protect against back-siphonage.

**J. Commission:** The State of \_\_\_\_\_\_\_\_\_\_\_ Cross- Connection Control Commission.

**K. Containment:** A method of backflow prevention that requires a backflow-prevention device at the water service entrance.

**L. Cross-connection:** Any actual or potential connection between the public water supply and a source of contamination or pollution.

**M. Department:** The City of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Water Department.

**N. Director of municipal services:** The person (or his/her delegated representative) invested with the authority and responsibility for the implementation of a cross-connection control program and for the enforcement of the provisions of this ordinance.

**O. Double check valve assembly:** An assembly of two independently operating spring-loaded check valves with tightly closing shutoff valves on each side of the check valves, plus properly-located test cocks for the testing of each check valve.

**P. Double check valve with intermediate atmospheric vent:** A device having two spring-loaded check valves separated by an atmospheric vent chamber.

**Q. Fixture isolation:** A method of backflow prevention in which a backflow-prevention device is located to correct a cross-connection at an in-plant location rather than at a water service entrance.

**R. Hose bibb vacuum breaker:** A device that is permanently attached to a hose bibb and that acts as an atmospheric vacuum breaker.

**S. Owner:** Any person who has legal title to, or license to operate or live in, a property upon which a cross-connection control inspection is to be made, or upon which a cross-connection is present.

**T. Person:** Any individual, partnership, company, public or private corporation, political subdivision or agency of the State Department, agency or instrumentality of the United States, or any other legal entity.

**U. Permit:** A document issued by the department that allows the use of a backflow-prevention device or method.

**V. Pollutant:** A foreign substance that if permitted to enter the public water system, will degrade its quality so as to constitute a moderate hazard, or impair the usefulness or quality of the water to a degree that does not create an actual hazard to public health but that does adversely and unreasonably affect such water for domestic use.

**W. Pressure vacuum breaker:** A device containing one or two independently operated spring-loaded check valves and an independently operated spring-loaded air inlet valve located on the discharge side of the check valve(s). The device includes tightly closing shutoff valves on each side of the check valve(s) and properly located test cocks for the testing of the check valve(s).

**X. Reduced-pressure principle backflow preventer:** An assembly consisting of two independently operating approved check valves with an automatically-operating differential pressure relief valve located between the two check valves, tightly closing shutoff valves on either side of the check valves, plus properly located test cocks for the testing of the check valves and the relief valve.

**Y. Residential dual check valves:** An assembly of two spring-loaded, independently operating check valves without tightly closing shutoff valves or test cocks. Generally employed immediately downstream of the water meter to act as a containment device.

**Z. Water service entrance:** The point in the owner’s water system beyond the sanitary control of the district, generally considered to be the outlet end of the water meter, and always before any unprotected branch.

**V. Administration**

A. The department will operate a cross-connection control program that will include the keeping of necessary records in order to fulfill the requirement of the commission’s cross-connection control regulations. The commission must approve of the department’s program.

B. The owner shall allow his/her property to be inspected for possible cross-connections and shall follow the provisions of the department’s program and the commission’s regulations if a cross-connection is permitted.

C. If the department requires that the public supply be protected by containment, the owner shall be responsible for water quality beyond the end of the containment device and should utilize fixture outlet protection for that purpose. The owner may utilize public health officials or personnel from the department (or their delegated representatives) to assist him/ her in the survey of the facilities in the selection of proper fixture outlet devices, and in the proper installation of these devices.

**VI. Requirements**

A. Department

1. On new installations, the department will provide onsite evaluation and/or inspection of plans to determine the type of backflow-prevention device or method that will be required. It will issue the permit and perform inspections and testing. A minimum of a dual check valve will be required in any new construction.

2. For premises existing prior to the start of this program, the department will perform evaluations and inspections of plans and/ or premises and will inform the owner by letter of any corrective actions deemed necessary. This letter will include the method of achieving the correction and the time allowed for the correction to be made. Ordinarily, 90 days will be allowed. This time period may be shortened depending upon the degree of hazard involved and the history of the device(s) in question.

3. The department will not allow any cross-connection to remain unless it is protected by an approved backflow-prevention device or method for which a permit has been issued, and which will be regularly tested to ensure satisfactory operation.

4. The department shall inform the owner by letter of any failure to comply by the time of the first re-inspection. The department will allow an additional 15 days for the correction. In the event the owner fails to comply with the necessary correction by the time of the second re-inspection, the department will notify the owner by letter that the water service to the owner’s premises will be terminated in a period not to exceed five days. In the event that the owner informs the department of extenuating circumstances as to why the correction has not been made, a time extension may be granted by the department, but in no case will it exceed an additional 30 days.

5. If the department determines at any time that a serious threat to public health exists, the water service will be terminated immediately.

6. The department shall have on file a list of private contractors who are certified backflow device testers. All charges for these tests shall be paid by the owner of the building or property.

7. The department will begin initial inspections of the premises to determine the nature of existing or potential hazards following the approval of this program by the commission, during the calendar year \_\_\_\_\_. Initial focus will be on high-hazard industries and commercial premises.

B. Owner

1. The owner shall be responsible for the elimination or protection of all cross-connections on his/her premises.

2. The owner, after having been informed by a letter from the department, shall at his/her expense install, maintain, and test (or have tested) any and all backflow-prevention devices on his/her premises.

3. The owner shall correct any malfunctions of the backflow preventer that are revealed by periodic testing.

4. The owner shall inform the department of any proposed or modified cross-connections and also of any existing cross-connections of which the owner is aware but which have not been found by the department.

5. The owner shall not install a bypass around any backflow preventer unless there is a backflow preventer of the same type on the bypass pipe. Owners who cannot shut down operations for testing the device(s) must supply additional devices necessary to allow testing to take place.

6. The owner shall install backflow preventers in a manner approved by the department.

7. The owner shall install only backflow preventers approved by the department or the commission.

8. Any owner having a private well or other private water source must have a permit if the well or source is cross-connected to the department’s system. Permission to cross-connect may be denied by the department. The owner may be required to install a backflow preventer at the service entrance if a private water source is maintained, even if it is not cross-connected to the department’s system.

9. In the event the owner installs plumbing to provide potable water for domestic purposes on the department’s side of the backflow preventer, such plumbing must have its own backflow preventer installed.

10. The owner shall be responsible for the payment of all fees for permits, annual or semiannual device testing, retesting in the case that the device fails to operate correctly, and second re-inspections for non-compliance with department or commission requirements.

**VII. Degree of Hazard**

A. The department recognizes the threat to the public water system arising from cross-connections. All threats will be classified by degree of hazard and will require the installation of approved reduced-pressure principle backflow-prevention devices or double check valves.

**VIII. Permits**

A. The department shall not permit a cross-connection within the public water supply system unless it is considered necessary and it cannot be eliminated.

B. Cross-connection permits that are required for each backflow prevention device are obtained from the department. A fee of $**[dollar amount]** will be charged for the initial permit, and a fee of $**[dollar amount]** will be charged for the renewal of each permit.

C. Permits shall be renewed every **[number]** years and are non-transferable. Permits are subject to revocation and become immediately revoked if the owner should change the type of cross-connection or degree of hazard associated with the service.

D. A permit is not required when fixture isolation is achieved with the utilization of a non-testable backflow preventer.

**IX. Existing in-use backflow prevention devices**

A. Any existing backflow preventer shall be allowed by the department to continue in service unless the degree of hazard is such that it supersedes the effectiveness of the present backflow preventer or results in an unreasonable risk to public health. Where the degree of hazard has increased, as in the case of a residential installation converting to a business establishment, any existing backflow preventer must be upgraded to a reduced pressure-principle device, or a reduced pressure-principle device must be installed in the event that no backflow device was present.

**X. Periodic testing**

A. Reduced-pressure principle backflow-prevention devices shall be tested and inspected at least semiannually.

B. Periodic testing shall be performed by the department’s certified tester or his delegated representative. This testing shall be done at the owner’s expense.

C. Testing shall be conducted during the department’s regular business hours. Exceptions to this, when at the request of the owner, may require additional charges to cover the increased costs to the department.

D. Any backflow preventer that fails during a periodic test will be repaired or replaced. When repairs are necessary, the device will be re-tested at the owner’s expense upon completion of the repair to ensure correct operation. High-hazard situations will not be allowed to continue unprotected if the backflow preventer fails the test and cannot be repaired immediately. In other situations, a compliance date of not more than 30 days after the test date will be established. The owner is responsible for spare parts, repair tools, or a replacement device. Parallel installation of two devices is an effective means of the owner ensuring uninterrupted water service during testing or repair of devices and is strongly recommended when the owner desires such continuity.

E. Backflow-prevention devices will be tested more frequently than specified in A. above in cases where there is a history of test failures and the department feels that due to the degree of hazard involved, additional testing is warranted. The cost of the additional tests will be borne by the owner.

**XI. Records and reports**

A. Records—the department will initiate and maintain the following:

1. Master files on customer cross-connection tests and/or inspections.

2. Master files on cross-connection permits.

3. Copies of and permit applications.

4. Copies of permits lists and summaries supplied to the commission.

B. Reports—the department will submit to the commission the following:

1. Initial listing of low-hazard cross-connections.

2. Initial listing of high-hazard cross-connections.

3. Annual update to lists 1 and 2 above.

4. Annual summary of cross-connection inspections.

**XII. Fees and charges**

A. The department will publish a list of fees or charges for the following services or permits:

1. Testing fees.

2. Re-testing fees.

3. Re-inspection fees.

4. Charges for after-hours inspections or tests.

ADDENDUM

1. Effective **[date]** for the town of \_\_\_\_\_\_\_\_, all new residential buildings will be required to install a residential dual check valve device immediately downstream of the water meter. Installation of retrofit residential dual check valve devices on existing service lines will be instituted at a time and at a potential cost to the homeowner as deemed necessary by the department. The owner must be aware that the installation of a residential dual check valve device results in a potentially closed plumbing system within his/her residence. As such, provisions may have to be made by the owner to provide for closed-loop expansion (for example, with thermal expansion devices and/or pressure-relief valves) within his/her closed-loop system.

2. The department strongly recommends that all new retrofit installations of reduced-pressure principle devices and double check valve backflow preventers include the installation of strainers located immediately upstream of the backflow device. The installation of strainers will preclude the fouling of backflow devices due to both foreseen and unforeseen circumstances occurring to the water supply system (such as water main repairs, water main breaks, fires, periodic cleaning and flushing activities, etc.). These occurrences may dislodge debris within the water main that will cause fouling of backflow prevention devices installed without the benefit of strainers.

Taken from the U.S. Environmental Protection Agency’s *Cross-Connection Control Manual*, February 2003, pp. 33-37.