Newport Water District

CROSS CONNECTION CONTROL PROGRAM

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NEWPORT MAINE 04953-0142

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NEWPORT WATER DISTRICT

Cross-Connection Control Program

I. Purpose.

A. To protect the public potable water supply served by the Newport Water District from the possibility of contamination or pollution by isolating, within its customers internal distribution system, 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 Newport Water District's potable water system by cross-connections.

II. Authority.

A. This program derives its authority from Title 22 M.R.S.A. §§42(1), 42(2), 42(3), 2612(2), and 2612(5), Maine Department of Health and Human Services Cross Connection Rules at 10-144 CMR 226. In addition, authority arises from provisions in the State of Maine Internal Plumbing Code, administered by the Department of Professional and Financial Regulation at 02-395 CMR 4, protecting the public against cross connection hazards associated with fixture isolation as well as by the Rules and Regulations of the Maine Public Utility Commission and the Newport Water District Terms and Conditions as approved by the Maine Public Utility Commission.

III. Responsibility.

A. The Newport Water District Superintendent shall be responsible for the protection of the public potable water distribution system from contamination or pollution due to the backflow or backsiphonage of contaminants or pollutants through the water service connection. If, in the judgment of the Superintendent, an approved backflow device is required at the District's water service connection to any customer's premises, the Superintendent, or his delegated agent, shall give notice in writing to said customer to install an approved backflow prevention device at each service connection to his premises. The customer shall, within 90 days of notice, install such approved device or devices, at his own expense, and failure or refusal, or inability on the part of the customer to install said 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. Approved. Accepted by the Superintendent as meeting an applicable specification stated or cited in this regulation, or as suitable for the proposed use.

B. Auxiliary Water Supply. Any water supply on or available, to the premises other than Newport Water District's approved public potable water supply.

C. Backflow. The flow of water or other foreign liquids, gases, or other substances or materials of any kind in any form into the distribution system of a public water supply from any source other than the intended source.

D. Backflow Preventer - An anti-backflow device or assembly. A device or means designed to prevent backflow or backsiphonage. 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, double check with intermediate atmospheric vent, and barometric loop.

1. Air Gap. A physical separation sufficient to prevent backflow between the free-flowing discharge end of the potable water system and an open or non-pressure receiving vessel. An air-gap separation shall be at least twice the diameter of the supply pipe measured vertically above the overflow rim of the vessel--in no case less than one inch (2.54 cm).

2. Atmospheric Vacuum Breaker. A device that prevents back-siphonage by creating an atmospheric vent when there is either a negative pressure or subatmospheric pressure in a water system.

3. Barometric Loop. A fabricated piping arrangement rising at least thirty flve (35) feet at its topmost point above the highest fixture it supplies. It is utilized in water supply systems to protect against backsiphonage.

4. Double Check Valve Assembly. An assembly of two (2) independently operating spring loaded check valves with tightly closing shut off valves on each side of the check valves, plus properly located test cocks for the testing of each check valve.

5. Double Check Valve with Intermediate Atmospheric Vent. A device having two (2) spring loaded check valves separated by an atmospheric vent chamber.

6. Hose Bibb Vacuum Breaker. A device which is permanently attached to a hose bibb and which acts as an atmospheric vacuum breaker.

7. 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 or checks. Device includes tightly closing shut-off valves on each side of the check valves and properly located test cocks for the testing of the check valve(s).

8. Reduced Pressure Principle Backflow Preventer. An assembly consisting of two (2) independently operating approved check valves with an automatically operating differential relief valve located between the two (2) check valves, tightly closing shut-off valves on each side of the check valves plus properly located test cocks for the testing of the check valves and the relief valve.

9. Residential Dual Check Valve. An assembly of two (2) spring-loaded, independently operating check valves without tightly closing shut-off valves and test cocks; Generally employed immediately downstream of the water meter to act as a containment device.

E. Back-pressure. A condition in which the owner's system pressure is greater than the supplier's system pressure.

F. 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 its intended source caused by the sudden reduction of pressure in the potable water supply system.

G. Commissioner. Department of Health and Human Services Commissioner

H. Containment. A method of backflow prevention that requires a backflow prevention preventer (containment device) at the water service entrance.

I. Contaminant. Any chemical, biological, or radiological substance or matter which is an impairment of the quality of the water which creates an actual hazard to the public health through poisoning or through the spread of disease by sewage, industrial fluids or waste.

J. Cross-Connection. Any physical or potential connection, or structural arrangement between two otherwise separate systems, one of which contains potable water and the other which contains water of unknown or questionable safety and/or steam, chemicals, gases or other contaminants and/or pollutants, whereby there may be a flow of an unapproved water to a potable water supply.

K. Community Public Water System and Non-Community Water Systems

1. Community Public Water System. A public water system which serves at least fifteen serviced connections used by year-round residents or regularly serves at least twenty-five year-round residents.

2. Non-Community Public Water System. A public water system that is not a community water system. There are two types of Non-Community Water Systems, which include non-transient, non-community systems and transient systems.

3. Non-Transient, Non-Community Water Systems. A Non-Community water system that serves 25 of the same persons for six months or more per year and may include, but is not limited to, a school, factory, industrial park, or office building.

4. Transient Non-community Water System. A Non-Community water system that serves at least 25 persons, but not necessarily the same persons, for at least 60 days per year and may include, but is not limited to, a highway rest stop, seasonal restaurant, seasonal motel, golf course, park or campground. A bottled water company is a transient, non-community water system.

L. Degree of Hazard.

1. Residential Hazard. Any connection that has the same level of hazard as a typical residential household. Public water suppliers can increase protection from residential cross connection hazards using anti-backflow devices at the discretion of the supplier.

2. Low Hazard. A pollution hazard, as defined in the Maine State Internal Plumbing Code at 02-395 CMR 4. If a backflow were to occur, the resulting health significance would be limited to changes in aesthetic quality such as taste, odor or color. The foreign substance must be non-toxic and non-bacterial in nature with no significant health effect.

3. High Hazard. A contamination hazard, as defined in the Maine State Internal Plumbing Code at 02-395 CMR 4. If a backflow were to occur, the resulting effect on the water supply could cause illness or death if consumed by humans. The foreign substance (contaminant) may be toxic and/or harmful to humans either from a chemical, bacteriological, or radiological standpoint. The effects of the contaminants may result from a short or long-term exposure.

M. Fixture Isolation. Method for the prevention of contamination by cross-connections *within* a facility served by a public water system.

N. Owner. Any person who has legal title to, or license to operate or inhabit, a property upon which a cross-connection inspection is to be made or upon which a cross-connection is present.

O. 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.

P. Political Subdivision. Any municipality, county, district or any portion of combination of two (2) or more thereof.

Q. Permit. A document issued by the District that allows the use of an approved backflow preventer.

R. Water Service Entrance. That 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.

S. Superintendent. The Superintendent, or his delegated representative in charge of the Newport Water District, is vested with the authority and responsibility for the implementation of a cross-connection control program and for the enforcement of the provisions of the Program.

V. Administration.

1. The District will operate a cross-connection control program, to include the keeping of necessary records, which fulfills the requirements of the Commission's Cross-Connection Regulations and is approved by the Commission.

2. The Owner shall allow his property to be inspected for possible cross-connections and shall follow the provisions of the District's Program and the Commission's Regulations if a cross-connection is permitted.

3. If the District requires that the public supply be protected by containment, the Owner shall be responsible for water quality beyond the outlet 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 District, or their delegated representatives, to assist in the survey of his/her facilities and to assist him/her in the selection of proper fixture outlet devices, and the proper installation of these devices.

VI. Requirements.

A. District.

1. On new installations, the District will issue a permit and provide onsite evaluation and/or inspection of plans in order to determine the type of backflow preventer, if any, that will be required. In any case, a minimum of a dual check valve will be required in any new construction.

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

3. The District will not allow any cross-connection to remain unless it is protected by an approved backflow preventer for which a permit has been issued and that will be regularly tested (if the device is a "testable device") to insure satisfactory operation.

4. The District shall inform the Owner by letter, of any failure to comply, by the time of the first re-inspection. The District will allow an additional fifteen (15) days for the correction. In the event the Owner fails to comply with the necessary correction by the time of the second inspection, the District will inform the Owner by letter that the water service to the Owner's premises will be terminated within a period not to exceed five (5) days. In the event that the Owner informs the District of extenuating circumstances as to why the correction has not been made, a time extension may be granted by the District but in no case will exceed an additional thirty (30) days.

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

6. The District shall have on file, a list of Private Contractors who are certified backflow device testers. All charges for these tests will be paid by the Owner of the building or property.

B. Owner.

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

2. The Owner, after having been informed by a letter from the District, shall at his expense, install, maintain, and have tested, any and all backflow preventers on his premises.

3. The Owner shall correct any malfunction of the backflow preventer that is revealed by periodic testing.

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

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. Owners who cannot shut down operation for testing of the

device(s) must supply additional devices necessary to allow testing to take place. (Ref Fig. 33 page 23 of the EPA manual for cross connections)

6. The Owner shall install backflow preventers in a manner approved by the District. (Ref Figures 33 through 37, pages 23 through 24 of the EPA manual for cross connections)

7. The Owner shall install only backflow preventers approved by the District 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 District's system. Permission to cross-connect may be denied by the District. 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 District's system.

9. In the event the Owner installs plumbing to provide potable water for domestic purposes that is on the District's side of the backflow preventer, such plumbing must have its own backflow preventer installed.

10. The Owner shall be responsible for the maintenance of their backflow preventer, payment of all fees for permits, device testing, retesting in the case that the device fails to operate correctly, and re-inspection for non-compliance with District or Commission requirements and other expense created by the non-compliance.

VII. Degree of Hazard.

A. Residential Hazard. Any connection that has the same level of hazard as a typical residential household. Public water suppliers can increase protection from residential cross connection hazards using anti-backflow devices at the discretion of the supplier.

B. Low Hazard. A pollution hazard, as defined in the Maine State Internal Plumbing Code at 02-395 CMR 4. If a backflow were to occur, the resulting health significance would be limited to changes in aesthetic quality such as taste, odor or color. The foreign substance must be non-toxic and non-bacterial in nature with no significant health effect.

C. High Hazard. A contamination hazard, as defined in the Maine State Internal Plumbing Code at 02-395 CMR 4. If a backflow were to occur, the resulting effect on the water supply could cause illness or death if consumed by humans. The foreign substance (contaminant) may be toxic and/or harmful to humans either from a chemical, bacteriological, or radiological standpoint. The effects of the contaminants may result from a short or long-term exposure.

Examples of establishments, their hazard classification, and containment requirements are listed on the following pages.

Establishment	Hazard	Containment
Resident	Residential	Dual check
Apt. Building (4 or more units)	Low	Double check
Antifreeze used in heating system	High	
Barber/beauty shops	Low/High	Double check/RPP
Cemeteries	High	RPP
Commercial food service facility	Low/High	Double check/RPP
Dairies	High	RPP
Dry cleaners	High	RPP
Florist shop/no plant growth or irrigation	Low	Double check
Florist shop/with plant growth or irrigation	High	RPP
Food Processing	Low/High	Double check/RPP
Garage/vehicle and equip. repair	High	RPP
Gas Station (depot type)	High	RPP
Home occupation:		
Beauty shop	Low/High	Double check/RPP
Animal grooming	High	RPP
Food service	Low	Double check
Dark Room	High	RPP
Hospitals	High	RPP
Hot Tubs (directly plumbed)	High	RPP
Hot Tubs (indirectly plumbed)	High	RPP
Laundromats without dry cleaning	Low	Double check
Laundromats with dry cleaning	High	RPP

Medical/dental offices	High	RPP
Establishment	**Hazard**	**Containment**
Morgues/Mortuaries	High	RPP
Motels, hotels	High	RPP
Nursing Homes	High	RPP
Office buildings	Residential/Low	Dual/Double check
Petroleum Storage Facility	High	RPP
Piers, Docks, Waterfront Facilities	High	RPP
Pools (directly plumbed)	High	RPP
Pools (indirectly plumbed)	High	RPP
Print shop/no development	High	RPP
Print shop/with development	High	RPP
Restaurants	High	RPP
R.V. Parks/ Campgrounds	High	RPP
Sewer Pumping/ Treatment Facilities	High	RPP
Single Family Residence	Residential	Dual check
Solar collectors	Low/High	Double check/ RPP
Sprinkler/ Irrigation System	High	RPP
Veterinary offices/kennels	High	RPP
Wells	High	RPP

Newport Water District typically requires a reduced pressure principle backflow prevention device on rented commercial properties served by Newport Water District because the tenants tend to change frequently and the District does not have the manpower to inspect commercial buildings on a regular basis.

VIII. Permits.

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

A. Cross-connection permits that are required for each backflow prevention device are obtained from the District.

B. Permits shall be renewed when property ownership changes, the degree of hazard changes or a new or different device is to be installed. Permits are non-transferable. Permits are subject to revocation and become immediately revoked if the Owner changes the type of cross-connection or degree of hazard associated with the service.

IX. Existing in-use backflow prevention devices.

Any existing backflow preventer shall be allowed by the District to continue in service unless the degree of hazard is such as to supersede the effectiveness of the present backflow preventer, or result in an unreasonable risk to the public health. When 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 testable device for the appropriate degree of risk.

X. Customers' Responsibility for Periodic Testing.

A. Testable backflow devices shall be tested and inspected at least annually.

B. 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 District feels that, due to the degree of hazard involved, additional testing is warranted. Cost of the additional tests will be borne by the owner.

C. Periodic testing shall be performed by independent certified testers. This testing will be done at the owner's expense.

D. Any backflow preventer that fails during a periodic test will be repaired or replaced. When repairs are necessary - upon completion of the repair, the device will be re-tested at owner's expense to insure correct operation. **High hazard situations will not be allowed to continue unprotected**. **If the backflow preventer fails the test and the device cannot be repaired immediately, the service must be shut off.** In other situations, a compliance date of not more than thirty (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 (2) devices is an effective means of the owner insuring uninterrupted water service during testing or repair of devices and is strongly recommended when the owner desires such continuity (See Fig. 33 on page 23 of the EPA Manual For Cross Connections – Copy attached).**

XI. Records and Reports.

A. Records. The District will initiate and maintain the following:

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

2. Master flies on cross-connection permits.

3. Copies of permits and permit applications.

4. Copies of lists and summaries supplied to the Commission.

B. Reports. The District will **make available** the following to the Commission:

1. Initial listing of low hazard cross-connections to the State.

2. Initial listing of high hazard cross-connections to the State.

3. Annual update lists of items 1 and 2 above.

4. Annual summary of cross-connection inspections to the State.

C. Fees and Charges. The District will publish a list of fees or charges for the following services or permits:

1. No fees at this time.

XII. Addendum.

A. Residential dual check.

Effective on the date of acceptance of this Cross-Connection Control Program, the Newport Water District will require all new residential buildings to install a residential dual check device immediately downstream of the water meter (See Figure 37 on page 24 of the EPA Manual For Cross Connections – copy attached). Installation of the residential anti-backflow device (dual check) will be required on existing service lines, on a retrofit basis.

The owner must be aware that installation of a residential dual check valve creates a potential closed plumbing system within their residence. As such, provisions may have to be made by the owner to provide for thermal expansion within their closed system, i.e., the installation of thermal expansion devices and/or pressure relief valve.

B. Strainers.

The District strongly recommends that all new retrofit installations of reduced pressure principle devices and testable double check valve backflow preventers include the installation of strainers located immediately upstream of the backflow device. The installation of strainers will help 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 of mains, etc. These occurrences may "stir up"

debris within the water main that will potentially cause fouling of backflow devices installed without the benefit of strainers.