The following is Section 1.31 of Part 5 of the NYS Sanitary Code:

5-1.31 Cross connection control

(Effective Date: Dec.30, 1992)

- (a) The supplier of water shall protect the public water system by containing potential contamination within the premises of the user in the following manner:
    - (1) by requiring an approved air gap, reduced pressure zone device, double check valve assembly or equivalent protective device consistent with the degree of hazard posed by any service connection;
    - (2) by requiring the users of such connections to submit plans for the installation of protective devices to the supplier of water and/or the State for approval; and
    - (3) by assuring that all protective devices be tested at least annually. Records of such shall be made available to and maintained by the supplier of water. Such tests shall be conducted by certified backflow-prevention device testers pursuant to the following requirements:
        - (i) a "general tester" certification will be issued when the applicant presents proof of satisfactory completion of a training course for testers of backflow-prevention devices which has been approved by the department.
        - (ii) a "limited tester" certification will be issued when the applicant presents proof of employment by a manufacturer as its agent for the servicing, maintaining and testing of backflow-prevention devices.
        - (iii) the department has the authority to require any person applying for certification or renewal of certification as a certified tester of backflow-prevention devices to take a written, oral or practical examination, if it deems such examinations to be reasonably necessary in determining the applicant's qualifications. The results of such examinations may be the sole basis for approval or disapproval of an application for certification or renewal of certification.
        - (iv) at least three months before the expiration date of a current certificate, both a general tester and a limited tester must submit proof that they are still engaged in the activity represented by their current certification.
        - (v) a certification will be suspended or revoked, on due notice and an opportunity for a hearing thereon, for any of following reasons: submission of false test reports for backflow-prevention devices; proof that the person is no longer engaged in servicing, maintaining and testing backflow-prevention devices; or failure to apply for recertification.
- (b) The supplier of water should not allow a user to establish a separate source of water. However, if the user justifies the need for a separate source of water, the supplier of water shall protect the public water system from a user who has a separate source of water and does not pose a hazard as detailed in subdivision (a) of this section in the following manner:

- (1) by requiring the user to regularly examine the separate water source as to its quality;
- (2) by approving the use of only those separate water sources which are properly developed, constructed, protected and found to meet the requirements of sections 5-1.51 and 5-1.52 of this Subpart; and
- (3) by filing such approvals with the State annually.

- (c) All users of a public water system shall prevent cross-connections between the potable water piping system and any other piping system within the premises.
- (d) Any installation, service, maintenance, testing, repair or modification of a backflow prevention device shall be performed in accordance with the provision of any county, city, town or village having a plumbing code. For this section, a backflow prevention device is an approved air gap, reduced pressure zone device, double check valve assembly or equivalent protection device designed to prevent or contain potential contamination of a public water system. All individuals who perform testing of backflow prevention devices shall be certified, in accordance with paragraph (a)(3) of this section.

CROSS CONNECTION CONTROL PROGRAM

Adopted May, 2008

I. PURPOSE

A. To protect the public water supply served by the Clifton Park Water Authority from contamination or pollution which could backflow or back siphon from a customer's internal distribution system.

B. To eliminate existing cross connections.

II. AUTHORITY

A. The Federal Safe Drinking Water Act of 1974, as amended in 1986, and Part 5 of the New York State Sanitary Code, Subpart 5-1 Public Water Supplies, Section 5-1.31, states that the water supplier has the primary responsibility to protect the public water system by containing potential contamination within the premises of the customer through cross connection control by containment.

III. RESPONSIBILITY

A. The Clifton Park Water Authority (Water Authority) will determine the need for backflow prevention for each customer, existing and proposed, on a case by case basis. If an approved backflow prevention device is required at a service connection to a customer's premises, the Water Authority will give notice in writing to said customer that an approved backflow prevention device shall be installed at each service connection to the premises.

B. The customer shall submit New York State Department of Health Form DOH-347, Application for Approval of Backflow Prevention Devices, and engineering report, drawings, and other information as required, for each existing and proposed service connection to the New York State Department of Health for approval.

C. The New York State Education Law pertaining to Professional Engineers and Land Surveyors, Article 145ff, Section 7200, requires that a project involving the safeguarding of life, health, and property, must be designed by a Registered Professional Engineer (P.E.) of the State of New York. The design of backflow prevention installations is such a project. The only exception to the P.E. requirement for design is that an architect licensed in New York State may design the installation as stated in the New York State Department of Health's

"Public Water Supply Guide Cross Connection Control", dated January, 1981, Section 9, Paragraph A.

D. The customer shall install, maintain, and test each backflow prevention device at said customer's own expense.

IV. REQUIREMENTS

A. CLIFTON PARK WATER AUTHORITY

1. Upon request to the Water Authority for any type or size of water service, the customer will be given information describing the procedures and requirements for approval and installation of backflow prevention devices for containment of the premises.

2. The Water Authority will determine the potential for cross connections and degree of hazard for any existing or proposed service connection. The customer will be notified in writing of the need to comply with the requirements for installation of backflow prevention devices. Included in the notification letter will be information describing the requirements for approval and installation of backflow prevention devices for containment of the premises.

3. The installation of backflow prevention devices by large commercial/industrial customers with existing multiple service connections is complex and expensive. Implementation timetables will be established on an individual basis with consideration given to the degree of hazard, time required for design and approval, and budgetary constraints. The time period will not be less than 90 days, and no more than 24 months, starting with the date of written notification. No extensions of time past 24 months will be granted.

4. If the Water Authority determines at any time that an immediate threat to the public health exists, the water service will be terminated.

5. The Water Authority will meet with customers and perform a physical inspection of the premises as needed.

B. CUSTOMER

1. The customer shall provide the Water Authority any and all information concerning facilities, process, water usage, existing backflow prevention devices, and other information as required by the Water Authority.

2. The customer is responsible for all internal cross connection control.

3. The customer, after receiving written notification from the Water Authority of the need to contain his premises with backflow prevention

devices, shall, at his expense, install, modify, inspect, maintain, replace, and test as required, any and all backflow prevention devices on his premises used to contain the premises.

4. The customer shall install only those backflow prevention devices approved by the New York State Department of Health.

5. The customer shall arrange for periodic testing of all backflow prevention devices, and such testing shall be conducted at the customer's expense. All containment backflow prevention devices shall be tested at least annually, or more frequently if required by the Water Authority. All testing shall be performed by a New York State certified backflow prevention device tester. Any device which fails a test must be repaired or replaced at the customer's expense. Upon completion of repairs of replacement, the backflow prevention device must be retested by a certified tester to ensure proper operation.

6. The customer shall submit New York State Department of Health Form DOH-1013, Report of Test and Maintenance of Backflow Prevention Device, to the Water Authority within 45 days of the installation of a backflow prevention device, and thereafter not exceeding one year from the date of the previous test.

7. The customer shall install backflow prevention devices only as approved by the Water Authority. No unauthorized modifications to the approved design are allowed. If uninterrupted water service is required, multiple backflow be installed to allow for testing and maintenance. The customer shall not install an unprotected bypass around any backflow preventer. The customer shall not modify any backflow preventer in any way without the approval of the Water Authority.

8. The customer shall ensure that all drains and drain ports are clear and operation for all backflow prevention devices. The customer shall ensure that all backflow prevention devices have adequate security measures.

V. EXISTING BACKFLOW PREVENTION DEVICES IN SERVICE

A. Existing backflow prevention devices will be allowed to continue in service by the Water Authority if the existing backflow prevention device is determined to be adequate and effective protection for the degree of hazard of the premises. All periodic testing and maintenance records of existing backflow prevention devices shall be made available to the Water Authority upon request.

VI. TESTING AND RECORDKEEPING

A. The Water Authority will keep and maintain records of installed backflow prevention devices and records of periodic tests. A customer will be notified in writing by the Water Authority when a periodic test is past due. If a customer does not comply within 30 days of the test due date, water service may be terminated.

B. High hazard situations will not be allowed to continue operating unprotected if the backflow prevention device fails the periodic test and cannot be repaired or replaced immediately. Parallel installation of multiple backflow prevention devices is recommended where uninterrupted service is required.

C. Random testing of backflow prevention devices may be performed by Water Authority certified testers to confirm compliance.

VII. PUBLIC FIRE HYDRANTS

A. No person, except as specifically authorized by the Water Authority, will be allowed to use any fire hydrant for any use whatsoever other than for fire fighting purposes. The use of public fire hydrants for washing streets, flushing sewers, or other needs, will be done through a backflow-protected assembly approved by the Water Authority.

VIII. DEGREE OF HAZARD

A. Domestic services for one- or two-family residential dwellings in conformance with the following are considered to be non-hazardous and do not require backflow prevention:

1. No connections to an auxiliary water supply, such as a well, cistern, or spring.
2. No booster pump.
3. No water powered sump pump (ejector or siphon pump).
4. No lawn sprinkler or irrigation systems (except those with vacuum breakers, no pumps, and no provisions for chemical injection).
5. No other potential hazards including, but not limited to, boiler feed corrosion inhibitors, antifreeze loops, and single wall heat exchangers.
6. No commercial or agricultural use.

B. Private fire protection services in conformance with the following are considered to be aesthetically objectionable and require a double check valve assembly to provide cross connection control by containment:

1. No provision for chemical addition.

2. No private fire hydrants.

3. No connections to a secondary water supply.

4. Not within 1,700 feet of an auxiliary water supply such as a pond, lake, river, or creek.

C. Combination services in conformance with criteria outlined in A and B above are considered to be aesthetically objectionable and require a double check valve assembly to provide cross connection control by containment. A combination service is one which provides both domestic use and fire protection.

D. All other types of service connections are considered hazardous and required a reduced pressure zone backflow prevention device to provide cross connection control by containment.

IX. INSTALLATION OF BACKFLOW PREVENTERS

A. For all backflow prevention device installations:

1. All proposed installations shall be approved by the Water Authority prior to the start of construction.

2. The water meter shall be installed adjacent to and upstream of the backflow prevention device. Meters that are larger than 2-inch must have a by-pass line with valve installed around the meter, but not around the backflow prevention device.

3. A shutoff valve shall be installed upstream of the meter.

4. All installations shall comply with the drainage specifications, clearance dimensions, and other requirements as determined by the Water Authority.

B. Installation in a below grade vault is not allowed. Installation in a vault in a berm is allowed, provided that the following conditions are met:

1. The berm/vault shall be located no more than 10 feet from the right-of-way.

2. All drains from the berm/vault shall be gravity drains that discharge to atmosphere.

3. The drain line shall not exceed 25 feet in total length.

4. The drain line shall be sized to accommodate the maximum discharge from the backflow preventer.

5. The exterior end of the drain shall be equipped with a rodent screen and a flapper.

C. Installation in a building is allowed provided that all of the following conditions are met:

1. The meter and backflow prevention device shall be installed on an exterior wall, at a location closest to the point where the water service enters the building.

2. Waterlines shall not be installed within the building, under a concrete slab, upstream of the meter and backflow prevention device.

D. Clearances for Backflow Prevention Devices

1. All assemblies shall be installed with a centerline height from 30 to 60 inches above the floor. Any installation at a greater height shall be provided with a fixed platform, a portable scaffold, or a lift meeting OSHA standards.

2. All RPZ devices must have an 18-inch minimum clearance between the bottom of the relief valve and the floor to prevent submersion and provide access for servicing the relief valve.

3. A minimum of 12 inches of clear space shall be maintained above the assembly to allow for servicing check valves and for operation of shut-off valves.

4. A minimum of 30 inches of clear space shall be maintained between the front side of the device and the nearest wall or obstruction.

5. At least 8 inches of clearance shall be maintained from the back side of the device to the nearest wall or obstruction. This clearance may need to be increased for models that have side mounted test cocks or relief valves that would be facing the back wall.

X. ENFORCEMENT

A. Failure, refusal, or inability, on the part of the customer, to comply with these requirements will result in denial of new service requests for new customers, and termination of service for existing customers.

B. The decision of the Water Authority regarding the need for backflow prevention is final.

C. The Water Authority reserves the right to revise these requirements and to allow exceptions on a case by case basis.

Determining the Degree of Hazard

Hazardous Facilities:

The following partial listing gives examples of the types of facilities which would require an acceptable reduced pressure zone (RPZ) or air gap to be installed in the service connection to the public water distribution system:

Facility	Hazard
Sewage and industrial wastewater treatment plants and pumping stations	Sewage and industrial wastewater, contaminated water, toxic chemicals, etc.
Paper manufacturing or processing, dye plants, petroleum processing, printing plants, chemical manufacturing or processing, industrial fluid systems, steam generation, rubber processing, tanneries	Toxic chemicals, water conditioning compounds. Examples: toxic dyes, acids, alkalis, solvents, quaternary ammonia compounds, mercury chromium, etc.
Canneries, breweries, food processing, milk processing, ice manufacturing, meat packers, poultry processing, rendering companies, etc.	Process wastewater, steam, detergents, acids, caustics, refrigeration lines
Hospitals, clinics, laboratories, veterinary hospitals, mortuaries, embalmers, etc.	Bacterial cultures, laboratory solutions, blood and tissue waste, toxic materials, etc.
Shipyards, marinas, etc.	Sea water, sewage, contaminated water, etc.
Metal-plating, photo-processing, laundries, commercial car washes, commercial refrigeration systems, dry cleaning establishments, etc.	Toxic chemicals, concentrated cleaning agents, solvents, etc. Examples: Cyanides, fluorides, copper, chromium, caustic and acid solutions, etc.
Commercial greenhouses, spraying and irrigation systems using weedicides, herbicides, exterminators	Toxic chemicals. Examples: Ammonium salts, phosphates, 2,4-D sodium arsenite, lindane, malathion, etc.
Boiler systems, cooling towers, fire-fighting systems using conditioned water, corrosion control chemicals, etc.	Toxic chemicals. Examples: Hydrazine, sodium compounds, antifreeze solutions, etc.

Aesthetically Objectionable Facilities:

The following partial listing gives examples of the types of facilities which would require an acceptable double check valve (DCV) to be installed in the service connection to the public water distribution system:

Customer fire protection loops, fire storage tanks with no chemical additives	Stagnant water, objectionable tastes, odors
High temperature potable water	Objectionable temperatures
Utilization of food grade dyes	Objectionable color
Complex plumbing systems, commercial buildings. Typically: barber shops, beauty salons, churches, apartment buildings, gas stations, supermarkets, nursing homes, construction sites, carnivals	Plumbing errors, obsolete plumbing equipment, poor plumbing inspection/correction programs

Non-Hazardous Facilities:

The following partial listing indicates the types of facilities that would not require the containment approach to cross connection control. These types of facilities would require only a single check valve installed on the connection to the public water supply distribution system:

Private Homes	None; rely on internal plumbing control
"Dry" commercial establishments without complex plumbing systems	None; rely on internal plumbing control

Private Fire Protection (Sprinkler) Systems
And Recommended Backflow Protection

Class 1

Direct connections from public water mains only; no pumps, tanks, reservoirs; no physical connection from other water supplies; no antifreeze or other additives of any kind; all sprinkler drains discharging to atmosphere, dry wells, or other safe outlets.

Recommended Backflow Protection:

None, other than the check valve required by the National Fire Code.

Class 2

Same as Class 1, except that booster pumps may be installed in the connections from the street mains.

Recommended Backflow Protection:

None, other than the check valve required by the National Fire Code.

Class 3

Direct connection from a public water supply main plus one or more of the following: elevate storage tanks; fire pumps taking suction from above ground covered reservoirs or tanks; and pressure tanks (all storage facilities filled or connected to public water only, with the water tanks to be maintained in potable condition).

Recommended Backflow Protection:

Will generally require minimum protection (approved DCV) to prevent stagnant waters from backflowing into the public water system.

Class 4

Directly supplied from public water supply mains similar to Classes 1 and 2, and with an auxiliary water supply on or available to the premises; or a potential auxiliary supply located within 1,700 feet of the pumper connection.

Recommended Backflow Protection:

Will normally require backflow protection at the service connection. The type (air gap, RPZ, or DCV) will generally depend on the quality of the auxiliary supply. This type of system will normally need maximum protection (air gap or RPZ) to protect the public water system.

Class 5

Directly supplied from public water supply mains, and interconnected with auxiliary supplies, such as: pumps taking suction from reservoirs exposed to contamination, or rivers and ponds; driven wells, mills or other industrial water systems; or where antifreeze or other additives are used.

Recommended Backflow Protection:

Will normally need maximum protection (air gap or RPZ) to protect the public water system.

Class 6

Combined industrial and fire protection systems supplied from the public water system only, with or without gravity storage or pump suction tanks.

Recommended Backflow Protection:

Protection would depend on the requirements of both industry and fire protection, and could only be determined by a survey of the premises.