To Whom It May Concern:

To enable you to comply with the City of Geneva, NY and New York State Department of Health Cross-Connection Control Program, I am enclosing the following material for your use:

1. City of Geneva, NY Local Law for Cross-Connection Control
2. Application Instructions
3. Form DOH 347 – Application for Approval
4. Plan Submittal Information
5. Form DOH 1013 – Report on Test/Maintenance of Backflow Prevention Device
6. AWWA Fire System Classification

For your use to assist you in the design of the Backflow Prevention Device, I have also enclosed the following:

1. Backflow Preventers Plan Review Check Sheet and Related Items (Questions and Answers)
2. Review of Plans for Protective Device(s) on Public Water Supply Distribution System – Check List

If I can be of any assistance, please feel free to contact me at 789-3101.

Sincerely,

David Barnard, Coordinator
Backflow Prevention Program

Water Maintenance Department
CITY HALL- 47 CASTLE STREET- GENEVA, NEW YORK 14456
(315) 789-8070 - FAX (315) 789-4296 - mjj@geneva.ny.us - www.geneva.ny.us

CITY OF GENEVA , NY

LOCAL LAW FOR CROSS – CONNECTION CONTROL

Section 1. **PURPOSE** – The purpose of this Local Law is to replace Local Law No. 1 of year 1989 for Cross Connection.

Section 2. **RESPONSIBILITY OF WATER SUPPLIER** – A Reduced Pressure Zone (RPZ) Device must be installed on all agricultural, industrial, commercial and retail water services within the premises of the water user or as required by the New York State Department of Health regulations at the expense of the water user.

The supplier of water is responsible for cross-connection controls found in Part V of the State Sanitary Code; Section 5-1.31 in title "Cross Connection Control" shall be a part of these regulations.

The supplier of water is responsible to assure that water of questionable or unsuitable quality does not enter the public water supply system.

The supplier of water is required to determine the degree of hazard that a facility poses to its water supply system, and to require that an acceptable backflow prevention containment device be installed, tested, operated, and maintained by the water user and that adequate records of maintenance and repair be kept and submitted annually to the City of Geneva, NY Water Maintenance Department and the New York State Department of Health local district office.

Section 3. **RESPONSIBILITY OF WATER USER** – The water user has the primary responsibility of preventing contaminants from entering the portable water piping system and subsequently, the public water supply and shall, as required by the supplier of water per Part V, Section 5-1.31 (A) and (B) install, test, operate, maintain and keep adequate maintenance and repair records for every backflow prevention device installed to provide containment. The supplier of water may discontinue water service to any premises if any violations exist. Water service will not be restored until the violations are corrected.

Additionally, as stated in Part V, Section 5-1.31 (C) the water user shall prevent cross-connections between the portable water piping system and any other piping system within the premises.

Section 4. **EFFECTIVE DATE** – The Local Law shall take effect upon its filing and adoption of one (1) certified copy thereof with the City Clerk or certified

copy in the Office of the State Comptroller and a certified copy in the Office of the Secretary of State.

Adopted: November 7, 2002

BACKFLOW DEVICE APPLICATION INSTRUCTIONS

1) The design of the installation must be done by a Professional Engineer, licensed in the State of New York, in accordance with the requirements of the State of New York Education Law.

   a) Only Backflow Devices approved by the New York State Health Department are acceptable for installation.

   b) Pit installations are acceptable in certain cases, in case of Reduced Pressure Zone Devices, a Pit installation is usually not feasible since a gravity drain must be provided (which cannot be connected directly to a sewer). The Backflow Device can NOT be subjected to flooding.

   c) If the Water Meter has a Bypass line around it, the Backflow Device must be installed beyond the point that the Bypass line is tied back into the service.

   d) Resilient Seat (Open Right) Gate Valves are to be installed on either side of the Backflow Device. (Ball valves on 2" and under).

   e) Design is to be in accordance with the New York State Department of Health Standards.

2) Five (5) Sets of Engineer's Reports, NYSDOH Application for Approval Form DOH 347, Plans and Specifications for Backflow Device installation are to be sent to the City of Geneva, NY Water Maintenance Department for review and endorsement. Once endorsed by the City Water Maintenance Department (by signature on bottom half of the DOH 347 Application Form) the application will then be forwarded to the New York State Department of Health, Geneva, NY District Office, 624 Pre-Emption Road, Geneva, NY 14456.

3) Application Fee:
   a) Backflow Devices ¾" to 2" in size is $75.00
   b) Backflow Devices greater than 2" in size is $150.00.

4) Upon completion of installation, the Design Engineer must certify to the installation in accordance with approval conditions and a certified Backflow Prevention Tester must make an initial testing of the Device(s). Form DOH 1013 Report on test and maintenance of Backflow Prevention Device must be

completed and forwarded to the City of Geneva, NY Water Maintenance Department and NYSDOH, Geneva, NY District Office. This will enable a Completed Works Approval to be issued by the NYSDOH.

5) All Backflow Devices are to be inspected and tested annually by the customer, and a copy of the inspection and test forwarded to the City of Geneva, NY Water Maintenance Department and the New York State Department of Health, Geneva, NY District Office, 624 Pre-Emption Road, Geneva, NY 14456.

PLAN SUBMITTAL

The Plan Submittal must include the following:

1) A Site Plan of the Facility containing a General Location Map, Buildings, the Public Water Main(s) – location and size, all Water Services including Fire Services – location and size, Meter Pits, Yard Hydrants, Pumper Connection(s), interconnections, and the location of the Proposed Backflow Preventer(s);

2) A Plumbing Floor Plan (Plan View) or Partial Floor Plan indicating Water Service, Water Meter layout, proposed Backflow Preventer(s), Booster Pump System, floor drain(s) and all nearby objects (examples: electrical panels, boilers, chillers, storage tanks, fire pumps, fire sprinkler risers, etc.). The Plan must be drawn to scale or with dimensions indicated from walls and all nearby objects;

3) A Vertical Cross Section(s) – of the proposed installation with elevations from floor, ceiling, outside grade and all nearby objects.

An Engineering Report must be included with the Plan submittal. The Report must describe the Project in detail. Items that should be included or described in the Report include:

1) General use of Water within the Facility
2) Size and description
3) Number of floors within the Facility
4) Actual or estimated maximum flow demand
5) Pressures – existing and after the installation of the Backflow Preventer(s)
6) Description of the firefighting system – indicate the A.W.W.A. Manual M-14 class of sprinkler services (see attached listing)
7) Description of the proposed installation of the Backflow Preventer(s) – indicate the location of the Backflow Preventer(s), drainage, lighting, heating, access to Unit, square footage of the floor level where the Backflow Preventer(s) is to be located
8) Description of the existing or proposed Booster Pump System, answering the following questions:
    a) After the installation of the proposed Backflow Preventer(s), will the New Positive Suction Head (NPSH) required for the proper operation of the Booster Pump System be adequate?

b) After the installation of the Backflow Preventer(s) in the suction line to the Booster Pump System, will the Booster Pump System operate properly at peak demand to deliver adequate pressure to the highest elevation and/or most remote fixture unit or any other operation requiring a certain pressure? NOTE: The New York State Uniform Fire Prevention and Building Code Part 902.4c requires the minimum pressure at water outlets at all times to be as follows:
   Fixture - non flush valve - 8 psi
   Fixture - flush valve - 15 psi

c) Does the Booster Pump System have a pressure cutoff switch in the suction line? What is the pressure setting of the switch? An existing or proposed cutoff switch must be set at the following setting:
   * For a cutoff switch where the Backflow Preventer(s) is located upstream of the Booster Pump(s) - set at 10 psi
   * For a cutoff switch where the Backflow Preventer(s) is located downstream of the Booster Pump(s) set at 20 psi

9) The need for dual Backflow Preventer(s). Does the Facility need a continuous water supply.

10) The location of the 100 year Flood Plain. If the Facility is located within the Flood Plain, what is the 100 year Flood Plain elevation? A Reduced Pressure Zone (RPZ) Backflow Preventer must be installed one (1) foot above the 100 year Flood Plain elevation.

AMERICAN WATER WORKS ASSOCIATION (AWWA)
FIRE SYSTEM CLASSIFICATION

CLASS 1 – 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 atmosphere, dry wells, or other safe outlets.

CLASS 2 – Same as Class 1, except that booster pumps may be installed in the connections from the street mains. (Booster pumps do not affect the portability of the system; it is necessary, however, to avoid drafting so much water that pressure in the water main is reduced below 10 psi).

CLASS 3 – Direct connection from public water supply main plus one or more of the following: elevated storage tanks; fire pumps taking suction from above ground covered reservoirs or tanks; and pressure tanks. (All storage facilities are filled or connected to public water only, the water in the tanks to be maintained in a potable condition. Otherwise, Class 3 systems are the same as Class 1.

CLASS 4 – Directly supplied from public mains similar to Class 1 and 2, and with an auxiliary water supply on or available to the premises; or an auxiliary supply may be located within 1,700 feet of the pumper connection.

CLASS 5 - Directly supplied from public 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.

CLASS 6 – Combined industrial and fire protection systems supplied from the public water mains only, with or without gravity storage or pump suction tanks.

CORRESPONDING BACKFLOW PROTECTION RECOMMENDED:
(AWWA M-14)

CLASS 1 – None, other than the check valve required by the National Fire Code.

CLASS 2 – None, other than the check valve required by the National Fire Code.

CLASS 3 – Will generally require minimum protection (approved DCV) to prevent stagnant waters from backflowing into the public potable water system.

CLASS 4 – 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. Will normally need maximum protection (air gap or RPZ) to protect the public potable water system.

CLASS 5 – Will normally need maximum protection (air gap or RPZ) to protect the public potable water system.

CLASS 6 – Protection would depend on the requirements of both industry and fire protection, and could only be determined by a survey of the premises.

City of Geneva, NY

Water Maintenance Department

Backflow Preventers Plan Review Check Sheet and Related Items

The enclosed check sheet may be used to assist in drafting plans for the installation of Backflow Preventers. The check sheet does not need to be completed as part of your plan submittal, but should be used only as a guide in the preparation of the plans.

The check sheet should cover most of the items needed for a Backflow Plan submittal. There may, however, be a few unclear items that I will try to clarify below in a question and answer format:

1. *When is Plan Approval required*? Title 10 of the Official Compilation of Codes, Rules and Regulations of the State of New York, Part 5-1.31 (a) requires that when a supplier of water instructs the user of a Public water supply to protect his water services connection by the installation of a protective device, plans for the installation of the protective device must be submitted to the supplier of water and to the State for approval. The installation of a containment Backflow Preventer prior to plan approval may result in costly construction changes and legal action.

2. *Where should the Backflow Preventer be located?* The New York State Department of Health Policy is that the device(s) should be installed at or near the property line of the facility as possible ("Containment Method"). There are a number of instances where the City of Geneva, NY will require strict compliance with the State's policy. These instances are as follows:
   a) On large private internal distribution systems
   b) At facilities where the location of the underground piping arrangement is unknown or cannot be verified
   c) On combination fire and domestic (process) services with private hydrants
   d) At facilities where future building additions are planned, or likely, that would extend over the existing water service or through which the existing service would run.

   The advantage of locating the Backflow Preventer at the property line is that the owner is allowed to tap the service line in the future without relocating the device, provided he complies with the meter requirements of

the supplier. A permanent location of the Backflow Preventer at the property line may be more cost effective by eliminating future costs associated with relocation.

3. a) *Who is supposed to certify to the installation of the Device and complete the lower portion of the DOH-1013 from New York State Department of Health Report on Test and Maintenance of Backflow Prevention Device (which is provided with the Approval Certificate from NYSDOH)*? The Design Engineer or Architect that is listed in Item No. 9, DOH 347 Form, New York State Department of Health Application for Approval of Backflow Prevention Device(s) is the person who should be certifying the installation of the Backflow Preventer on the DOH-1013 form (within 30 days of installation).

   b) *Who is supposed to certify to the Initial Testing on the Device and complete the upper portion of the DOH-1013 form*? A certified New York State Backflow Prevention Device Tester must certify to a final Device test within 30 days of installation (a list of testers can be obtained from New York State Department of Health).

4. *How and/or where do you protect a small anti-freeze loop in the fire sprinkler system*? Fire sprinkler systems that contain anti-freeze solutions are classified as an American Water Works Association Class 5 System. In New York State a Class 5 Sprinkler System must be protected by a Reduced Pressure Backflow Preventer or an Air Gap utilizing the Containment Method. An applicant with an anti-freeze loop(s) may select any of the following methods to comply with the Cross-Connection regulations:
   a) Elimination of the anti-freeze in the system by flushing the anti-freeze loop and refilling the loop with potable water.
   b) Installation of a Dry Pipe System.
   c) Installation of a special sprinkler system connected to the internal domestic-process plumbing with proper internal Backflow protection. This example requires that <u>all</u> domestic-process water services are protected by the proper containment device or method.
   d) Installation of a containment R.P.Z. or Air Gap in the fire service upstream of all taps or connections, including hydrants.

   <u>NOTE</u>: An internal R.P.Z., only protecting the anti-freeze loop, is not approvable as the protective device for the property. It may be used as an internal control not under the regulatory jurisdiction of the Water

Maintenance Department of the New York State Department of Health.

5. *At what height should the Device be installed*? The center line of the device should be 30 inches above the floor and the relief valve outlet must be 18 inches above the floor. Additionally, the device should be located above the outside grade and above any possible flooding. Devices proposed to be installed within a basement maybe have to be installed up high or relocated to above grade to comply with the requirements that the device be installed above any possible flooding. Devices installed up high may require a platform. When determining whether a platform is required, answer the following question: can the device be safely and easily reached for testing and maintenance purposes?

6. *May only one manufacturer's device be specific and used on the preparation of the plans*? No, you may choose more than one manufacturer's device from the New York State Department of Health approved list. Your plan, however, must show a separate detail installation for each different device. This separate detail is especially critical in retrofit applications. You must also list the different manufacturer's model numbers and sizes in Item No. 6 on the DOH-347 application form.

7. *May I pump through an R.P.Z. Device*? Yes, provided that the location of the booster pump is such that the containment is still achieved. If containment is to be provided within the facility, the internal piping must be such that the length of exposed pipe between where the water service enters the building, usually the water meter, and the booster pump is short with no taps or connections.

   The R.P.Z. Valve must be located directly downstream of the booster pump.

   If you should have any questions regarding the above material, please contact the Public Health Engineer at The New York State Department of Health, 624 Pre-Emption Road, Geneva, NY District Office, Geneva, NY 14456, 315-789-3101.

   Sincerely,

David C. Barnard, Coordinator
Backflow Prevention Program