Definitions

Backflow – *The flow of unwanted substances into the water distribution pipes of a potable supply of water.*

Backflow Preventer – *A device to prevent backflow.*

The following are the four most common backflow preventers:

- ***Air Gap*** – An open vertical distance twice the diameter of the supply pipe between the lowest opening from any pipe supplying water to a tank or plumbing fixture and the flood level rim of the receptacle.
- ***Double Check Valve*** – A device that incorporates two spring-loaded check valves within a single unit that has two shut-off valves and the necessary appurtenances for testing.
- ***Pressure Vacuum Breaker*** – A device designed to operate under constant pressure with an internally spring-loaded check valve and a spring-loaded air inlet valve that has two shut-offs and the necessary appurtenances for testing.
- ***Reduced Pressure Backflow Device*** – A device that incorporates two or more spring-loaded check valves and an automatic relief valve located between two check valves with two shut-offs and the necessary appurtenances for testing.

Back Siphonage – A backflow from reduced pressure in the water distribution pipe of a potable water supply.

Back Pressure – Pressure created to cause water or Substances to flow in a direction opposite of what is intended.

Check Valve – A self-closing device designed to permit the flow of fluids in one direction and to close if there is a reversal flow.

Containment – The method of backflow prevention that requires a device to be installed at the water service entrance.

Cross-Connection– Any physical connection of arrangement between two otherwise separate piping systems, one of which contains potable water and the other contains water or other unknown substances of questionable safety, where water or other substances may flow from one system to the other with the direction of flow depending on the pressure differential between the two systems.

Fixture Isolation– A method of backflow prevention in which a backflow preventer is located to correct a cross-connection at an implant unit rather than at the water service entrance.

Potable Water – Water approved for human consumption.

Cross-Connections between water supplies and non-potable sources of contamination represent one of the most significant threats to health in the water supply industry.

This program is designed to maintain the safety of water in the City's distribution system by establishing rules and procedures to control potential cross-connection and to prevent the contamination of public drinking water from other liquids, materials or sources other than its intended source.

This document is intended to supplement the regulations promulgated by the New Hampshire Department of Environmental Services. The attention to all concerned parties is directed to those regulations.

Concord General Services

Cross-Connection & Backflow Testing Program

Concord General Services

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www.concordnh.gov/generalservices

For More Information See:
NH Code of Administrative Rules Part,
Env-Dw 505, BACKFLOW PREVENTION.

Or Visit:
www.concordnh.gov/backflow

Responsibility

Community Development Department (CDD)
Code Enforcement Division

Concord General Services (CGS)
Water Division

The certified plumbing inspector shall provide a list of currently installed devices to Concord General Services to the degree such information is available. A Certificate of Occupancy will be issued only after a backflow preventer is installed.

CGS will operate a cross-connection control program to keep updated records to fulfill the requirements of the NHDES Cross-Connection regulations. CGS will perform an on-site evaluation and inspection to review new and renewal plumbing work to determine any discrepancies of plan requirements. CDD will be notified of recommendations while CGS will perform inspection and testing of the device.

CGS will perform evaluations and inspections of premises existing prior to the start of this program and inform the property owner by letter of corrections deemed necessary, the method to make the correction, and the time allowed for the correction to be made. CGS will not allow cross-connections to remain unless it is protected by an approved preventer that is regularly tested and operates satisfactorily. The property owner will be notified by letter of any failure to comply before re-inspection and additional days may be allowed for correction. Water services will be terminated if there is a further failure to comply by the time of the second re-inspection. A copy of this letter may be forwarded to the CDD and Concord Fire Department. Extenuating circumstances may grant extensions no longer than an additional 30 days.

Service will be terminated immediately if CGS determines at any time that there is a serious threat to public health.

The implementation of this program will be by a CGS staff member who is a certified backflow prevention device tester.

Property Owner and Tenant

As a condition of water service, the property owner shall allow his property to be inspected for possible cross-connections and follow the provisions the Cross-Connection and Backflow Testing Program.

CGS requires that the public water supply be protected by containment at a property. The property owner shall be responsible for water quality beyond the outlet end of the containment device and can utilize fixture isolation for that purpose.

The property owner is responsible for the elimination and protection of all cross-connections on their premises. The property owner shall have the responsibilities as contained in section Env-Dw 505 of New Hampshire Code of Administrative Rules.

The property owner shall install at their expense, maintain, and have tested, any backflow preventer on their premises. Any malfunction that is revealed by testing shall be corrected by the owner. The property owner shall inform CGS of any new, proposed, or modified cross-connection and existing cross-connection that has not been notified to CGS.

Private water sources, including wells, must have a permit if it is cross-connected to the Concord's water system. Permission to cross-connect may be denied. The property owner may be required to have a backflow preventer at the service entrance if a private water source is available for use, even if it is not connected to the City's service.

The owner shall not install a by-pass around any backflow preventer unless there is a backflow preventer on the by-pass. Owners must supply the additional devices necessary to allow testing to take place if they cannot shut down operations for testing.

Property owners shall only install approved backflow preventers and an approved manner. If the owner installs plumbing to provide potable water for domestic purposes, which is on the City's side of the backflow preventer, the plumbing must have its own backflow preventer or individual fixture isolation. The property owner shall eliminate all possible cross-connections.

Permits

Plumbing permits are required for the installation of backflow preventers and are secured from CDD.

Existing In-Use Backflow Prevention Devices

Any previously installed backflow preventer may be allowed by CGS to continue in service unless the degree of hazard results in unreasonable risk to the public health.

Periodic Testing

Backflow prevention devices shall be inspected and tested at least semi-annually in high hazard situations and annually in low hazard situations. Hazard levels are determined by CGS. Periodic testing shall be performed by a CGS inspector or designee. The testing shall take place during CGS's regular business hours. Requests for testing during non-regular business hours may require additional charges to cover increased costs. Any backflow preventer which fails during a periodic test must be repaired or replaced. Certain high hazard situations will not be allowed to continue unprotected if the backflow preventer cannot be repaired immediately. In other situations, a compliance date of not more than seven days after the test date will be established. A retest must be scheduled within seven days or service will be terminated. The property owner is responsible for repairing or replacing the device. Parallel installation of two devices is an effective means of the property owner ensuring uninterrupted water service during testing or repair of devices and is recommended strongly if the property owner desires such continuity.

Fees and Charges

CGS will publish a list of fees and charges within its annual summary of charges and annual budget.

The property owner shall be responsible for the payment of all fees for permits , annual or semi-annual device testing, re-testing in the case a device fails to operate correctly, and second re-inspections.

Degree of Hazard

CGS recognizes the difference in the threat to the public water system arising from different types of potential cross-connections. They are classified as follows:

- ***Low Degree of Hazard*** – In the event of a backflow, the effect on the water supply would be a change in esthetic qualities. The foreign substance would be non-toxic to humans.

- ***High Degree of Hazard*** – In the event of a backflow, the effect on the water supply would be toxic for consumption from a chemical, bacteriological, or radiological position and could result in illness or death if consumed.