TOWN OF LAUREL
BACKFLOW PREVENTION POLICY

1**. Protection of Potable Water Supply & Cross Connection Control**

A. **Purpose**. The purpose of this policy is:

(1) To protect the Town of Laurel public water distribution system from the possibility of contamination or pollution.

(2) To adhere to the **Delaware Code, Title 16, Chapter 79**, **State of Delaware Regulations Governing A Detailed Plumbing Code** of which "*The International Plumbing Code\2000*" is a part.

(3) To include in the design, installation and maintenance of the potable water supply system appropriate use of backflow prevention devices so as to prevent contamination through cross connections. Backflow prevention applications shall conform to Table 1 as outlined by "*The International Plumbing Code\2000*".

(4) To provide for the training and continuing education in Backflow Prevention by a training facility and/or organization approved by The Delaware Health and Social Services, Division of Public Health, Office of Drinking Water.

B. **Responsibility.**

(1) The Federal Safe Drinking Water Act of 1974, the **Delaware Code, Title 16, Chapter 79,** and the **State of Delaware Regulations Governing A Detailed Plumbing Code** regulates and prescribes the manner in which Backflow Prevention devices shall be used to prevent cross connection in the potable water system.

a. As stated in the Delaware Code, Title 16, Chapter 79:
§ 7909. Safe Water Supply:
(a) Cross connections between safe and unsafe water supply distributing systems shall not be permitted unless such connections have the written approval of the Division of Public Health.
(b) No plumbing, fixture, construction, valves, fitting, device, apparatus or connection that will provide a cross connection between a safe water supply and a sewage system or will permit or make possible the back flow of sewage or waste into a water supply system shall be installed. (47 Del. Laws, c. 184, §

5, 7; 16 Del. C. 1953, § 7910; 70 Del. Laws, c. 147, § 21.)

(2) The Town of Laurel shall be responsible for the protection of the public potable water distribution system from contamination or pollution due to the backflow or back-siphonage of contaminants or pollutants through the water service connection.

2. **Definitions**. As defined in "*The International Plumbing Code\2000*".

(1) **Air Gap**. The unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet supplying water to a tank, plumbing fixture or other device and the flood level rim of the receptacle.

(2) **Antisiphon.** A term applied to valves or mechanical devices that eliminate siphonage.

(3) **Backflow.** The flow of any water, foreign liquids, gases, or other substances back into a potable water system.

a. **Backpressure**. Pressure created by any means in the water distribution system, which by being in excess of the pressure in the water supply mains causes a potential backflow condition.
b. **Backpressure, low head**. A pressure less than or equal to 4.33 psi (29.88 kPa) or the pressure exerted by a 10-foot (3048 mm) column of water.
c. **Backsiphonage**. The backflow of potentially contaminated water into the potable water system as a result of the pressure in the potable water system falling below atmospheric pressure of the plumbing fixtures, pools, tanks, or vats connected to the potable water distribution piping.
d. **Backwater valve**. A device or valve installed in the building drain or sewer pipe where a sewer is subject to backflow, and which prevents drainage or waste from backing into a low level or fixtures and causing a flooding condition.
e. **Drainage**. A reversal of flow in the drainage system.
f. **Water supply system**. The flow of water or other liquids, mixtures or substances into the distribution pipes of a potable water supply from any source except the intended source.

(4) **Backflow Connection.** Any arrangement whereby backflow is possible.

(5) **Backflow Preventer**. A device or means to prevent backflow.

(6) **Ball Cock**. A water supply valve, opened or closed by means of a float or similar device, utilized to supply water to a tank. An

antisiphon ball cock contains an antisiphon device in the form of an approved air gap or vacuum breaker that is an integral part of the ball cock unit and that is positioned on the discharge side of the water supply control valve.

(7) **Contamination**. An impairment of the quality of the potable water that creates an actual hazard to the public health through poisoning of through the spread of disease by sewage, industrial fluids or waste.

(8) **Critical Level**. An elevation reference point that determines the minimum height at which a backflow preventer or vacuum breaker is installed above the flood level.

(9) **Cross Connection**. Any physical connection or arrangement between two otherwise separate piping systems, one of which contains potable water and the other either water of unknown or questionable safety or steam, gas or chemical, whereby there exists the possibility for flow from one system to the other, with the direction of flow depending on the pressure differential between the two systems (see "Backflow").

(10) **Pollution.** An impairment of the quality of the potable water to a degree that does not create a hazard to the public health but that does adversely and unreasonably affect the aesthetic qualities of such potable water for domestic use.

(11) **Potable Water**. Water free from impurities present in amounts sufficient to cause disease or harmful physiological effects and conforming in bacteriological and chemical quality to the requirements of the Public Health Drinking Water Standards or the regulations of the public health authority having jurisdiction.

(12) **Reduced Pressure Principle Backflow Preventer**. A backflow prevention device consisting of two independently acting check valves, internally force-loaded to a normally closed position and separated by an intermediate chamber (or zone) in which there is an automatic relief means of venting to atmosphere, internally loaded to a normally open position between two tightly closing shutoff valves and with means for testing for tightness of the checks and opening of relief means.

(13) **Vacuum**. Any pressure less than that exerted by the atmosphere.

(14) **Vacuum Breaker.** A type of backflow preventer installed on openings subject to normal atmospheric pressure that prevents backflow by admitting atmospheric pressure through ports to the discharge side of the device.

3. **Administration**.

A. The Laurel Public Works Department will operate a cross-connection control program that includes keeping various records and distributing information to the public as needed. (see **Requirements**).

B. Property owners shall allow inspection of their property for possible cross-connections by Laurel Public Works. Owners shall be responsible for the water quality beyond the outlet end of the device and should utilize approved fixture protection to prevent possible cross-connection.

C. Plumbing Inspectors employed by the State of Delaware shall be responsible for providing on-site inspection and/or inspection of plans for new installations of backflow preventers, that adhere to the **State of Delaware Regulations Governing A Detailed Plumbing Code** and the **Delaware Code, Title 16, Chapter 79.**

4. **Requirements.**

A. Department.

1. For premises existing prior to the start of this program, evaluations may be performed by the Laurel Public Works Department. In the event that corrective actions are required the Department will issue a letter to the owner stating the necessary corrections and the time allowed for the corrections to be made. Time period will reflect the degree of hazard associated with the correction needed; normally 90 days will be allowed.

2. The Laurel Public Works Department will correct any cross-connection with an approved backflow prevention device. (See Table 1)

3. If the Laurel Public Works Department determines at any time that a serious threat to the public health exists, the water service will be terminated immediately.

B. **Owner**.

1. Property Owners will be responsible for eliminating all cross-connections on their property according to the **State of Delaware Regulations Governing A Detailed Plumbing Code.**

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

3. The Owner is responsible for correcting any malfunction of the backflow preventer, which is revealed by periodic testing, in a manner that meets the **State of Delaware Regulations Governing A Detailed Plumbing Code.**

5. Degree of Hazard.

1. The Laurel Public Works Department recognizes that cross-connections can present a threat to the public water system. All threats will be classified by a degree of Hazard and will require installation of an approved device.
    a. Low Hazard: pollution (see definitions)
    b. High Hazard: contamination (see definitions)

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

1. Unless an existing backflow preventer presents an unreasonable risk to the public water system it shall be allowed to remain in place. In the event that the degree of hazard has increased, any existing backflow preventer must be upgraded to a reduced pressure principle device. (As in the case of a residence converting to a business establishment.)

7. **Records and Reports.**

A. **Records.**

1. The Laurel Public Works Department will maintain a list of customer cross-connection tests and/or inspections to include remediation.

2. The Laurel Public Works Department will maintain a list of all backflow prevention/cross-connection control devices installed henceforth.

B. Reports.

1. The Laurel Public Works Department will make available to the Town Board, upon request, a list of customer cross-connection tests and/or inspections and all cross-connection prevention devices installed henceforth.

Table 1

APPLICATION FOR BACKFLOW PREVENTERS

DEVICE	DEGREE OF HAZARD	APPLICATION	APPLICABLE STANDARDS
Air Gap	High or Low Hazard	Backsiphonage or Backpressure	ASME A112.1.2
Antisiphon-type Water Closet Flush Tank Ball Cock	Low Hazard	Backsiphonage Only	ASSE 1002 CSA CAN/CSA-B125
Reduced Pressure Principle Backflow Preventer	High or Low Hazard	Backpressure or Backsiphonage Sizes 3/8" – 16"	ASSE 1013 AWWA C511 CSA CAN/CSA-B64.4
Reduced Pressure Detector Assembly Backflow Preventer	High or Low Hazard	Backsiphonage or Backpressure (Fire Sprinkler Systems)	ASSE 1047
Double Check Backflow Prevention Assembly	Low Hazard	Backpressure or Backsiphonage Sizes 3/8" – 16"	ASSE 1015 AWWA C510
Double Check Detector Assembly Backflow Preventer	Low Hazard	Backpressure or Backsiphonage Sizes 3/8"– 16" Sizes 1 ½" - 16"	ASSE 1048
Dual-check-valve-type Backflow Preventer	Low Hazard	Backpressure or Backsiphonage Sizes ¼" – 1"	ASSE 1024
Backflow Preventer with Intermediate Atmospheric Vents	Low Hazard	Backpressure or Backsiphonage Sizes ¼" – ¾"	ASSE 1012 CSA CAN/CSA-B64.3
Dual-check-valve-type Backflow Preventer for Carbonated Beverage Dispensers/Post Mix Type	Low Hazard	Backpressure or Backsiphonage Sizes ¼" – 3/8"	ASSE 1032
Pipe-applied Atmospheric-type Vacuum Breaker	High or Low Hazard	Backsiphonage only Sizes ¼" – 4"	ASSE 1001 CSA CAN/CSA-B64.1.1
Pressure Vacuum Breaker Assembly	High or Low Hazard	Backsiphonage only Sizes ½" – 2"	ASSE 1020
Hose-connection Vacuum Breaker	High or Low Hazard	Low head backpressure or Backsiphonage Sizes ½", ¾", 1"	ASSE 1011 CSA CAN/CSA-B64.2
Vacuum Breaker Wall Hydrants, Frost-resistant, Automatic Draining Type	High or Low Hazard	Low head backpressure or Backsiphonage Sizes ¾", 1"	ASSE1035 CSA B64.7
Laboratory Faucet Backflow Preventer	High or Low Preventer	Low head Backpressure and Backsiphonage Sizes ½" – 1"	ASSE 1052
Spill-proof vacuum breaker	High or Low hazard	Backsiphonage only Sizes ¼" – 2"	ASSE 1056