Section 19.0 Cross Connection Control Policy

19.1 Responsibility

19.1.1 The Elkhart Water Utility has the responsibility to supply safe, potable water from the source to the point of delivery defined as the downstream end of the meter setting. The Customer is responsible for maintaining the service line from the point where it connects to the watermain (See Repair of Service Lines).

19.1.2 The Utility has the right to prevent, by appropriate means, the backflow of contaminated or polluted water or any other foreign substance from entering the public water distribution system.

19.1.3 Water Customers have the legal responsibility to maintain their respective potable water piping systems, free of cross connections, and to comply with all Federal, State and City laws, ordinances and regulations pertaining to cross connections.

19.2 Containment

The policy of the Utility is to control by "containment" all Cross Connections which shall be found to exist, or which may be installed in the future, on the Utility Customer's Piping Systems. Containment shall be achieved by:

19.2.1 Assurance that the Customer's system, or any portion thereof, which may create or is creating a backflow problem, is physically disconnected from the Utility's distribution system;

19.2.2 At the Customer's expense, an approved Backflow Prevention Device must be installed at location approved by the Utility.

19.3 Booster Pumps

No Customer shall cause or allow the installation or maintenance of a booster pump in the public water system unless it is installed downstream of the meter and a device is installed to control operation of the booster pump when pressure to pump suction drops as follows:

19.3.1 Wherever a fire suppression system has a booster pump installed only for fire suppression, it shall have an audible or visual alarm to provide warning when flow occurs and a control valve shall be installed on the booster pump
discharge to automatically throttle the flow as necessary to maintain a minimum of 10 pounds per square inch, gauge, pump suction pressure.

19.3.2 For all booster pumps other than those described in 19.3.1, a control device shall be installed to either prevent operation of the booster pump, or else to automatically throttle flow to or from the booster pump as necessary to maintain a minimum of 20 pounds per square inch, gauge, pump suction pressure. The Utility may require that the control device be calibrated to maintain a higher than 20 pounds per square inch, gauge, pump suction pressure, where necessary to provide a minimum pressure of 20 pounds per square inch, gauge, throughout the pressure zone of the public water system distribution system to which the customer is connected.

19.4 Cross Connection Hazards

19.4.1 Wherever a Cross Connection Hazard as specified by subsection 19.4.3 below is designated, an Air gap or a Reduced Pressure Principle Backflow Preventer shall be installed:

a) at any new facility;

b) any modified Customer Service Line; or

c) when a higher capacity meter is installed.

19.4.2 Neither an Air Gap nor a Reduced Pressure Principle Backflow Preventer shall be required on a Customer Service Line that is used solely for fire suppression provided the line is fitted with an audible alarm that will activate when water is flowing through the line.

19.4.3 The following types of facilities are designated as Cross Connection Hazards:

a) Aircraft and missile manufacturers;

b) Automotive plants including those that manufacture motorcycles, automobiles, trucks, recreation vehicles and construction and agricultural equipment;

c) Beverage bottling plants including dairies, breweries;

d) Canneries, packing houses and reduction plants;

e) Car washes;
f) Chemical, biological and radiological laboratories including those in high schools, trade schools, colleges, universities and research institutions;
g) Hospitals, clinics, medical buildings, autopsy facilities, morgues, other medical facilities and mortuaries;
h) Metal and Plastic manufacturing, fabricating, cleaning, plating and processing facilities;
i) Plants manufacturing paper and paper products;
j) Plants manufacturing, refining, compounding or processing fertilizer, film, herbicides, natural or synthetic rubber, pesticides, petroleum or petroleum products, pharmaceuticals, radiological materials or any chemical that could be a contaminant to the water supply;
k) Commercial facilities that use herbicides, pesticides, fertilizer or any chemical that could be a contaminant to the public water supply;
l) Plants processing, blending or refining animal, vegetable or mineral oils;
m) Commercial laundries and dye works, excluding coin operated laundromats;
n) Sewage, stormwater and industrial waste treatment plants and pumping stations;
o) Waterfront facilities including piers, docks marinas and shipyards;
p) Industrial facilities that recycle water; and
q) Restricted or classified facilities (federal government defense or military installations or other facilities closed to the supplier of water or the commissioner.

19.4.4 Other facilities may be designated as Cross Connection Hazards and must comply with the cross connection control requirements.

19.4.5 Exemptions from these requirements may be granted by the Indiana Department of Environmental Management (IDEM).
19.5 **High Rise Structures**

All high rise structures (buildings over four stories or 40 feet tall) are required as a condition of providing service, to have an approved Backflow Prevention Device.

19.6 **Secondary Sources of Supply**

19.6.1 An Air Gap, Reduced Pressure Principle Backflow Preventer or Double Check Valve Assembly shall be constructed on Secondary Sources that:

a) use wells as secondary source;

b) are constructed to maintain bacteriological quality of water; and

c) produce without treatment, water meeting the drinking water quality standards.

19.6.2 No other Secondary Sources other than tanks used for fire suppression may be connected to the Customer's Service Line to or into the facility. This includes but is not limited to, wells that are known or suspected to be contaminated, ponds, and river water.

19.7 **Fire Suppression**

A Backflow Prevention Device shall be installed on all fire suppression systems as follows:

19.7.1 Tanks used to store water for fire suppression shall have an Air Gap, Reduced Pressure Principle Backflow Preventer or Double Check Valve Assembly.

19.7.2 Fire suppression systems shall have an Air Gap, Reduced Pressure Principle Backflow Preventer or Double Check Valve Assembly to prevent stagnant water from back flowing into the Public Water System.

19.7.3 Fire suppression systems with chemical additives shall install a Reduced Pressure Principle Backflow Preventer to prevent stagnant water from back flowing into the Public Water System.

19.7.4 Fire suppression systems that use potable piping and have a flow through condition where water is continually flowing through the system and on to other uses are not required to install a Backflow Prevention Device.
19.8 Irrigation

Customers shall construct an Air Gap or install a Reduced Pressure Principle Backflow Preventer or a Pressure Vacuum Breaker on a line supplying water to any irrigation facility that has a sprinkler located less than 6 inches above grade and is constructed after July 19, 1985.

19.9 Backflow Device Construction and Installation Requirements

Only those models listed by the “List of Approved Backflow Prevention Assemblies”, by the Foundation for Cross Connection Control and Hydraulic Research of the University of Southern California, February 7, 2012, or those acceptable under the Indiana Plumbing Code under the fire prevention and building safety commission shall be installed. Piping installed to bypass a Cross Connection Control Device shall not be allowed unless the bypass piping is also fitted with a similar Cross Connection Control Device.

19.9.1 Air Gap

a) two pipe diameters of the discharge pipe or six inches, whichever is less, above the maximum recorded level of the rim of the receiving vessel, whichever is higher; or

b) three pipe diameters of the discharge pipe or six inches, whichever is less, above the maximum recorded level of the rim of the receiving vessel, whichever is higher, where:

1. a side wall, rib or similar obstruction is spaced closer than three diameters from the piping affecting the air gap; or

2. two intersecting walls are located closer than four pipe diameters from the piping affecting the air gap.

19.9.2 Reduced Pressure Principle Backflow Preventers

Shall be installed vertically or horizontally as provided by the Foundation for Cross Connection Control and Hydraulic Research of the University of Southern California, February 7, 2012, with:

a) no plug or additional piping affixed to the pressure differential valve port;
b) the pressure differential valve port a minimum of 12 inches above floor level, not be below ground grade level and not subject to flooding, excessive heat of freezing;

c) location allows for access to the pressure differential valve port, maintenance and testing from floor level without the use of a ladder or other similar device; and

d) installed at a location where any leakage from the pressure differential valve port will be noticed.

19.9.3 **Double Check Valve Assembly**

Shall be installed at a location that allows access to the device for maintenance and testing from floor level, without the use of a ladder or other similar device and that will not subject the device to flooding, excessive heat or freezing.

19.9.4 **Pressure and Spill Resistant Vacuum Breakers**

Shall be installed as close as possible to the irrigation facility and at a location that allows access to the device for maintenance and testing from floor level, without the use of a ladder or other similar device and that will not subject the device to flooding, excessive heat or freezing. Additionally the device must be installed between two tightly closing shut-off valves with its center point a minimum of 12 inches above:

a) floor level;

b) the highest downstream piping or shutoff valve; and

c) the highest downstream overflow rim or discharge point.

19.9.5 **Atmospheric Vacuum Breaker Back-siphonage Prevention Assemblies**

Shall be installed at a location that allows access to the device for maintenance and testing from floor level, without the use of a ladder or other similar device and that will not subject the device to flooding, excessive heat or freezing. Additionally the device must be installed as follows:

a) a minimum of six inches clearance above the overflow rim or downstream piping;

b) no means of shutoff on the discharge vacuum breaker; and
c) must not be under continuous pressure for more than 12 hours in a 24 hour period.

19.10 **Inspection**

19.10.1 **Testing Requirements**

The Customer shall have each **Backflow Prevention Device** inspected or tested by a certified Cross Connection Control Device inspector at the time of construction or installation, and at the following intervals, in the following manner:

a) Air Gaps shall be inspected at intervals not exceeding one year;

b) Reduced Pressure Principle Backflow Preventer shall be tested at intervals not exceeding one year to ensure that:

1. Both check valves are drip-tight under all pressure differentials; and

2. The pressure differential relief valve will maintain pressure in the center chamber at least two pounds per square inch below that of the inlet chamber.

c) Double Check Valve Assemblies shall be tested at intervals not exceeding one year to ensure that both check valves are drip-tight under all pressure differentials;

d) Pressure Vacuum Breakers and Spill Resistant Vacuum Breakers shall be tested at intervals not exceeding one year to ensure that the air inlet opens fully when water pressure is at or below atmospheric pressure; and

e) Atmospheric Vacuum Breaker Backsiphonage Prevention Assemblies must be inspected at intervals not exceeding one year to ensure proper operation of the air inlet valve. Removal of canopy may be necessary to determine free movement of air inlet valve.

19.10.3 **Registration of Inspectors**

Inspection of Backflow Prevention Devices is not performed by the Utility. It is the responsibility of the customer to ensure inspection is conducted by an individual that is approved by and is registered with the IDEM at the time of inspection.
19.10.4 Backflow Training

Backflow inspection training is not provided by the Utility.

19.10.5 Inspection Tags

All Cross Connection Control Device inspectors shall install an inspection tag upon completion of testing, calibration, or repair, of any Cross Connection Control Device. The inspection tag must be waterproof and protected against tampering and must have at least the following information:

a) The name of the inspector;
b) The date of the inspection; and
c) The registration number, model number, serial number, and size of the Cross Connection Control Device.

19.10.6 Reports

a) All Cross Connection Control Device reports shall be submitted to the Water Utility and to the Customer within 30 days of the inspection or test.
b) The Utility shall retain the three most recent reports of tests conducted on all Backflow Prevention Devices and shall permit access to these files at reasonable times and upon presentation of identification by IDEM.
c) If requested, the Utility shall submit to IDEM copies of any reports required to be retained by subsection b above.

19.11 Access to Premises

Authorized representatives of the Utility shall have the right to enter the premises of the Customer at all reasonable times for the purpose of inspecting Cross Connection Control Devices, atmospheric tank installations, and general plumbing for the purpose of determining compliance with this regulation.

19.12 Noncompliance

If the Utility, either through inspection or any other means, determines a Customer is in violation of any part of this regulation, the Utility reserves the right to discontinue supplying water to the Customer until the Customer has corrected or eliminated the violations.