DIVISION 3. - CROSS-CONNECTION CONTROL

Sec. 36.76 - Purpose and Objective

(a) The purpose of this cross-connection ordinance is to establish and define the authority of the City of Mebane as the water purveyor in the elimination of all cross-connections within its public potable water supply.

(b) The objective of this cross-connection ordinance is to protect the public potable water supply of City of Mebane against actual or potential contamination by containing and/or isolating within the consumer's water system contaminants or pollutants which could, under adverse conditions, backflow through uncontrolled cross-connections into the public water system.

(c) This ordinance shall apply to all consumers connected to the city's public potable water supply.

(d) The City of Mebane will administer a continuing inspection and testing program of cross-connection control and backflow prevention which will systematically and effectively control all actual or potential cross-connections which may occur in the future.

(e) This ordinance is consistent with the Federal Safe Drinking Water Act (PL 93-523), the North Carolina State Administrative Code (15A NCAC 18A and 15A NCAC 18C), and the North Carolina State Building Code (Volume II) as they pertain to cross-connections with the public water supply.

Sec. 36.77- Responsibilities

(a) *Health agency.* The North Carolina Department of Environmental Quality (NCDEQ) has the responsibility for promulgating and enforcing laws, rules, regulations, and policies in carrying out an effective cross-connection control program. The North Carolina Division of Water Resources has the primary responsibility of ensuring that the water purveyor operates the public potable water system free of actual or potential sanitary hazards, including unprotected cross-connections, ensuring that the water purveyor provides an approved water supply at the service connection to the consumer's water system and, further, that the consumer or user requires the installation, testing, and maintenance of an approved backflow prevention assembly on the service connection when required.

(b) *Water purveyor.*

1) Except as otherwise provided in this ordinance, the water purveyor's responsibility to ensure a safe water supply begins at the source and includes all of the public water distribution system, including the service connection, and ends at the point of delivery to the consumer's water system.

2) In addition, the water purveyor shall exercise reasonable vigilance to ensure that the consumer has taken the proper steps to protect the public potable water system. To ensure that the proper precautions are taken, the water purveyor is required to administer a cross-connection program

   a) To determine the degree of hazard or potential hazard to the public potable water system and;

   b) To determine the degree of protection required; and

   c) To ensure proper containment and isolation protection through an on-going inspection program.

3) When it is determined that a backflow prevention assembly is required for the protection of the public system, the water purveyor shall require the consumer, at the consumer's expense, to install an approved backflow prevention assembly at each service connection, to test immediately upon installation and thereafter at annually, to properly repair and maintain such assembly or assemblies, to keep adequate records of each test and subsequent maintenance

and repair, including materials and/or replacement parts, and to submit such records to the water purveyor within the prescribed time period.

(c) *Inspection.*

1) The City of Mebane's Engineering, Inspections, and Utilities departments have the responsibility to not only review construction drawings and inspect plumbing as it is installed; but they have the explicit responsibility of preventing cross-connections from being designed and built into the plumbing system within its jurisdiction. Where the review of construction drawings suggests or detects the potential for cross-connections being made an integral part of the plumbing system, the City has the responsibility, under the state building code, for requiring that such cross-connections be either eliminated or provided with backflow prevention equipment approved by the state building code and the city's ordinance.

2) The inspector's responsibility begins at the point of delivery, downstream of the first installed backflow prevention assembly, and continues throughout the entire length of the consumer's water system. The plan inspector should inquire about the intended use of water at any point where it is suspected that a cross-connection might be made or where one is actually called for by the plans. When such is discovered it shall be mandatory that a suitable, approved backflow prevention assembly approved by the state building code and be required by the plans and be properly installed. The primary protection assembly for containment and isolation purposes only shall have approval from water purveyor, and the state building code, and shall also adhere to the administrative codes of the North Carolina Department of Environmental Quality.

(d) *Consumer.*

1) The consumer has the responsibility of preventing pollutants and contaminants from entering components of the user's potable water system or the public potable water system. The consumer's responsibility starts at the point of delivery from the public potable water system and includes all components of the consumer's water system.

2) The consumer, at his own expense, shall ensure installation, operation, testing, and maintenance of approved backflow prevention assemblies as directed by the water purveyor. All tests, maintenance, and repairs of backflow prevention assemblies shall be made by a state certified backflow prevention assembly tester. Following any installation, repair, overhaul, re-piping or relocation of an assembly, the consumer shall have it tested to ensure that it is in good operating condition and will prevent backflow.

3) The consumer shall maintain accurate records of tests and repairs made to backflow prevention assemblies and shall maintain such records for a minimum period of three (3) years. The records shall be on forms approved by the water purveyor and shall include the list of materials or replacement parts used.

4) The consumer has the responsibility of ensuring that all records of installation, testing and maintenance shall be provided to the water purveyor by the certified backflow prevention assembly tester within the prescribed time period.

(e) *Installer.* Installation of an approved backflow prevention assembly shall be made by the appropriate certified installer. When installing a backflow prevention device, the installer must document the installation on forms approved by the water purveyor. A copy of all installation forms shall be provided to the consumer and to the water purveyor.

(f) *Certified backflow prevention assembly testers.*

1) All certified backflow prevention assembly testers must hold a current certification from an approved backflow prevention assembly certification program. All certified backflow prevention assembly testers must become re-certified every two (2) years through an approved backflow prevention assembly certification program.

2) When employed by the consumer to test, repair, overhaul, or maintain backflow prevention assemblies, a backflow prevention assembly tester will have the responsibility for making competent inspections and for repairing or overhauling backflow prevention assemblies and

making reports of such repair to the consumer and responsible authorities on forms approved by the water purveyor. The tester shall include the list of materials or replacement parts used. It will be the tester's responsibility to ensure that original manufactured parts are used in the repair of or replacement of parts in a backflow prevention assembly. It will be the tester's further responsibility not to change the design, material or operational characteristics of an assembly during repair or maintenance without prior approval of the water purveyor.

3) The tester shall be equipped with and be competent to use all the necessary tools, gauges, manometers and other equipment necessary to properly test, repair, and maintain backflow prevention assemblies. All certified backflow prevention assembly testers must obtain and employ backflow prevention assembly test equipment which has been evaluated and/or approved by the water purveyor. All test equipment shall be checked for accuracy annually, at a minimum, and calibrated, if necessary. All certified backflow prevention assembly testers shall provide a certificate of accuracy to the water purveyor as to such calibration, employing an accuracy/calibration method acceptable to the water purveyor.

4) A certified tester shall perform the work and be responsible for the competency and accuracy of all tests and reports. A certified tester shall provide a copy of all test and repair reports to the consumer and to the water purveyor within ten (10) business days of any completed test or repair work. A certified tester shall maintain such records for a minimum period of three (3) years.

Sec. 36.78 - Definitions

The following words, terms and phrases, when used in this ordinance, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Air-gap separation means a physical separation between the free-flowing discharge end of a potable water supply pipeline and an open or non-pressure receiving vessel. An approved air-gap separation shall be at least double the diameter of the supply pipe measured vertically above the overflow rim of the receiving vessel, in no case less than one (1) inch (or 2.54 cm).

Backflow means the undesirable reversal of flow of water or mixtures of water and other liquids, gases, or other substances into the distribution pipes of the consumer or public potable water system from any source or sources.

Backflow prevention assembly—Approved. The term "approved backflow prevention assembly" means an assembly used for containment and/or isolation purposes that has been investigated and approved by the water purveyor and has been shown to meet the design and performance standards of the American Society of Sanitary Engineers (ASSE), or the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research (USCFCCCHR). A backflow prevention assembly used on fire suppression systems must comply with the National Fire Protection Association (NFPA) Code.

Backflow prevention assembly—Unapproved. The term "unapproved backflow prevention assembly" means an assembly that has been investigated by the water purveyor and has been determined to be unacceptable for installation within the water system. Consideration for disapproval shall be based upon, but not limited to, the following criteria: (i) Due to poor performance standards (i.e., significant failure rate); (ii) Lack of or unavailability of repair parts; and/or (iii) Poor service or response from assembly's factory representative.

Backflow prevention assembly—Type. The term means an assembly used to prevent backflow into a consumer or public potable water system. The types are:

(1) Double check valve assembly (DCVA)

(2) Double check detector assembly (fire sprinkler system) (DCDA and DCDA-II)

(3) Pressure vacuum breaker (PVB)

(4) Reduced pressure principle assembly (RP)

(5) Reduced pressure principle detector assembly (fire sprinkler system) (RPDA and RPDA-II)

(6) Spill-resistant vacuum breaker (SVB)

Backflow prevention assembly tester—Certified. The term "certified backflow prevention assembly tester" means a person who has proven his competency to the satisfaction of the water purveyor. Each person who is certified to make competent tests, or to repair, overhaul, and make reports on backflow prevention assemblies shall be knowledgeable of applicable laws, rules, and regulations, and must hold a certificate of completion from an approved training program in the testing and repair of backflow prevention assemblies. In order to prevent any conflict of interest, it shall be unlawful for an employee of the City of Mebane to test and repair any privately owned backflow prevention assemblies installed in the city's public potable water supply, except to perform any duty imposed by this ordinance.

Backflow prevention device—Approved. The term "approved backflow prevention device" means a device used for isolation purposes that has been shown to meet the design and performance standards of the American Society of Sanitary Engineers (ASSE) the American Water Works Association (AWWA).

Backpressure backflow means any elevation in the consumer water system, by pump, elevation of piping, or steam and/or air pressure, above the supply pressure at the point of delivery which would cause, or tend to cause, a reversal of the normal direction of flow.

Backsiphonage backflow means a reversal of the normal direction of flow in the pipeline due to a negative pressure (vacuum) being created in the supply line with the backflow source subject to atmospheric pressure.

Check valve—Approved. The term "approved check valve" means a check valve that is drip tight in the normal direction of flow when the inlet pressure is at least one (1) psi and the outlet pressure is zero (0). The check valve shall permit no leakage in a direction reverse to the normal flow. The closure element (e.g. clapper, poppet, or other design) shall be internally loaded to promote rapid and positive closure. An approved check valve is only one (1) component of an approved backflow prevention assembly, i.e., pressure vacuum breaker, double check valve assembly, double check detector assembly, reduced pressure principle assembly, or reduced pressure detector assembly.

Consumer means any person, firm, or corporation using or receiving water from the City of Mebane.

Consumer's potable water system means that portion of the privately owned potable water system lying between the point of delivery and point of use and/or isolation protection. This system will include all pipes, conduits, tanks, receptacles, fixtures, equipment, and appurtenances used to produce, convey, store, or use potable water.

Consumer's water system means any water system commencing at the point of delivery and continuing throughout the consumer's plumbing system, located on the consumer's premises, whether supplied by a public potable water or an auxiliary water supply. The system or systems may be either a potable water system or an industrial piping system.

Containment means preventing the impairment of the public potable water supply by installing an approved backflow prevention assembly at the service connection.

Contamination means an impairment of the quality of the water which creates a potential or actual hazard to the public health through the introduction of hazardous or toxic substances or through the spread of disease by sewage, industrial fluids, or waste.

Cross-connection means any actual or potential connection or structural arrangement between a public or a consumer's water system and any other source or system through which it is possible to introduce any contamination or pollution, other than the intended potable water with which the system is supplied. Bypass arrangements, jumper connections, removable sections, swivel or change-over devices, and other temporary or permanent devices through which or because of which "backflow" can or may occur are considered to be cross-connections.

Direct cross-connection means any arrangement of pipes, fixtures, or devices connecting a potable water supply to a non-potable source which is permanent in nature, ie a boiler feed line.

Double check detector assembly means a specially designed assembly composed of a line-size approved double check valve assembly with a specific bypass water meter and a meter-sized approved double check valve assembly. For a DCDA-II assembly, the bypass will be protected by a single check. To be approved, the DCDA must conform to ASSE 1048 standards. The meter shall register (in U.S. gallons/cubic feet) accurately for only very low rates of flow and shall show a registration for all rates of flow. This assembly shall only be used to protect against a nonhealth hazard (i.e., pollutant).

Double check valve assembly means an assembly composed of two (2) independently acting, approved check valves, including tightly closing shutoff valves attached at each end of the assembly and fitted with properly located test cocks. To be approved, the DCVA must conform to ASSE 1015 standards. This assembly shall only be used to protect against a non-health hazard (i.e., pollutant).

Dual check means a self-closing device designed to permit flow in one direction and close if there is a reversal of flow. A dual check valve is not an in-line testable assembly.

Fire sprinkler system means a system of piping which may include sprinklers, hose connections, hydrants, or fixed spray nozzles that may be wet or dry, open or closed for the use of suppressing fires.

Hazard—Degree of. The term "degree of hazard" is derived from the evaluation of conditions within a system which can be classified as either a "pollution" (non-health) or a "contamination" (health) hazard.

Hazard—Health. The term "health hazard" means an actual or potential threat of contamination of a physical, hazardous or toxic nature to the public or consumer's potable water system to such a degree or intensity that there would be a danger to health.

Hazard—Non-health. The term "non-health hazard" means an actual or potential threat to the quality of the public or the consumer's potable water system. A non-health hazard is one that, if introduced into the public water supply system, could be a nuisance to water customers, but would not adversely affect human health.

Health agency means the North Carolina Department of Environmental Quality and the North Carolina Department of Health and Human Services.

Indirect cross-connection means any arrangement of pipes, fixtures, or devices connecting a potable water supply to a non-potable source which is temporary in nature, ie a garden hose.

Industrial fluids means any fluid or solution which may be chemically, biologically, or otherwise contaminated or polluted in a form or concentration such as would constitute a health or non-health hazard if introduced into a public or consumer potable water system. Such fluids may include, but are not limited to: Process waters; chemicals in fluid form; acids and alkalis; oils, gases; etc.

Industrial piping system—Consumer's. The term "consumer's industrial piping system" means any system used by the consumer for transmission of or to confine or store any fluid, solid or gaseous substance other than an approved water supply. Such a system would include all pipes, conduits, tanks, receptacles, fixtures, equipment, and appurtenances used to produce, convey, or store substances which are or may be polluted or contaminated.

Isolation means the act of confining a localized hazard within a consumer's water system by installing approved backflow prevention assemblies. Disclaimer: The city may make recommendations, upon facility inspection, as to the usages of isolation devices/assemblies, but does not assume or have responsibility whatsoever for such installations.

Point of delivery means generally at the property line of the customer, adjacent to the public street where the city mains are located, or at a point on the customer's property where the meter is located. The customer shall be responsible for all water piping and control devices located on the customer's side of the point of delivery.

Pollution means an impairment of the quality of the water to a degree which does not create an actual hazard to the public health, but which does adversely and unreasonably affect the aesthetic qualities of such waters for domestic use.

Potable water means water from any source which has been investigated by the North Carolina Department of Environmental Quality and which has been approved for human consumption.

Public potable water system means any publicly or privately-owned water system operated as a public utility, under a current North Carolina Department of Environmental Quality permit, to supply water for public consumption or use. This system will include all sources, facilities, and appurtenances between the source and the point of delivery such as valves, pumps, pipes, conduits, tanks, receptacles, fixtures, equipment, and appurtenances used to produce, convey, treat, or store potable water for public consumption or use.

Reduced pressure principle backflow prevention assembly means an assembly containing within its structure a minimum of two (2) independently acting, approved check valves, together with a hydraulically operating, mechanically independent, pressure differential relief valve located between the check valves and at the same time below the first check valve. The first check valve reduces the supply pressure a predetermined amount so that during normal flow and at cessation of normal flow, the pressure between the checks is less than the supply pressure. In case of leakage of either check valve, the pressure differential relief valve, by discharge to atmosphere, shall operate to maintain the pressure between the checks less than the supply pressure. The unit shall include tightly closing shutoff valves located at each end of the assembly and each assembly shall be fitted with properly located test cocks. To be approved, the RP must conform to ASSE 1013 standards. The assembly is designed to protect against a health hazard (i.e., contaminant).

Reduced pressure principle detector assembly means a specially designed assembly composed of a line-size approved reduced pressure principle backflow prevention assembly with a specific bypass water meter and a meter-sized approved reduced pressure principle backflow prevention assembly. For a RPDA-II assembly, the bypass will be protected by a single check The meter shall register, in U.S. gallons/cubit feet, accurately for only very low rates of flow and shall show a registration for all rates of flow. To be approved, the RPDA must conform to ASSE 1047 standards. This assembly shall be used to protect against a health hazard (i.e., contaminant).

Service connections means the terminal end of a service connection from the public potable water system, i.e., where the city loses jurisdiction and sanitary control over the water at its point of delivery to the consumer's water system.

Vacuum breaker—Atmospheric type. The term "atmospheric vacuum breaker," also known as the "non-pressure type vacuum breaker," means a device containing a float-check, a check seat, and an air inlet port. The flow of water into the body causes the float to close the air inlet port. When the flow of water stops, the float falls and forms a check valve against back-siphonage and at the same time opens the air inlet port to allow air to enter and satisfy the vacuum. A shutoff valve immediately upstream may be an integral part of the device. An atmospheric vacuum breaker is designed to protect against a non-health hazard, isolation protection only, under a backsiphonage condition only. The device must conform to ASSE 1001 standards.

Vacuum breaker—Pressure type. The term "pressure vacuum breaker" means an assembly containing an independently operating internally loaded check valve and an independently operating loaded air inlet valve located on the discharge side of the check valve. The assembly is to be equipped with properly located test cocks and tightly closing shutoff valves attached at each end of the assembly. To be approved, the PVB must conform to ASSE 1020 standards. This assembly is designed to protect against a health hazard (i.e., contaminant) under a backsiphonage condition only.

Vacuum breaker—Spill-resistant type. The term "spill-resistant vacuum breaker" means an assembly containing one check valve force-loaded closed and an air inlet vent valve force-loaded open to atmosphere, positioned downstream of the check valve, and located between and including two tightly closing shutoff valves and test cocks. The components of this assembly are not designed to act independently of one another. To be approved, the SVB must conform to ASSE 1056 standards. This assembly is designed to protect against a health hazard (i.e., contaminant) under a backsiphonage condition only.

Water purveyor means the owner or operator of a public potable water system, providing an approved water supply to the public.

Water supply—Approved. The term "approved water supply" means any public potable water supply which has been investigated and approved by the North Carolina Department of Environmental Quality.

The system must be operating under a valid North Carolina permit. In determining what constitutes an approved water supply, the North Carolina Department of Environmental Quality has reserved the final judgment as to its safety and potability.

Water supply—Auxiliary. The term "auxiliary water supply" means any water supply on or available to the premises other than the purveyor's approved public potable water supply. These auxiliary waters may include water from another purveyor's public potable water supply or any natural source such as a well, spring, river, stream, etc., "used water", or industrial fluids. These waters may be polluted, contaminated, or objectionable and constitute an unacceptable water source over which the water purveyor does not have sanitary control.

Water supply—Unapproved. The term "unapproved water supply" means a water supply which has not been approved for human consumption by the North Carolina Department of Environmental Quality.

Water—Used. The term "used water" means any water supplied by a water purveyor from a public water system to a consumer's water system after it has passed through the point of delivery and is no longer under the control of the water purveyor.

This ordinance is gender neutral and the masculine gender shall include the feminine and vice versa. Shall is mandatory, may is permissive and discretionary. The use of the singular shall be construed to include the plural and the plural shall include the singular as indicated by the context of its use.

Sec. 36-79 - Right of entry

(a) Authorized representatives from the City of Mebane shall have the right to enter, upon presentation of proper credentials and identification, any building, structure, or premises during normal business hours, or at any time during the event of an emergency, to perform any duty imposed by this ordinance. Those duties may include sampling and testing of water, or inspections and observations of all piping systems connected to the public water supply. Where a user has security measures in force which would require proper identification and clearance before entry into their premises, the user shall make necessary arrangements with the security guards so that upon presentation of suitable identification, city personnel will be permitted to enter, without delay, for the purposes of performing their specific responsibilities. Refusal to allow entry for these purposes may result in discontinuance of water service.

(b) On request, the consumer shall furnish to the water purveyor any pertinent information regarding the water supply system on such property where cross-connections and backflow are deemed possible.

Sec. 36-80 - Elimination of cross-connections and degree of hazard

(a) When cross-connections are found to exist, the owner, his agent, occupant, user, or tenant will be notified in writing by the City or its representative to disconnect the cross-connection within the time limit established by the water purveyor. Degree of protection required and maximum time allowed for compliance will be based upon the potential degree of hazard to the public water supply system. Failure to comply with the disconnection and/or time limit requirements may result in suspension of water service. Requirements and maximum time limits are as follows:

    (1) Cross-connections with private wells or other auxiliary water supplies must immediately disconnect upon discovery.

    (2) All industrial and commercial facilities and/or facilities which pose a health hazard to the potable water system must have a containment assembly in the form of a reduced pressure principle backflow prevention assembly within sixty (60) days of written notification.

    (3) All other facilities not identified as a health hazard shall be considered non-health hazard facilities. Non-health hazard facilities must install a containment assembly in the form of a double check valve assembly within sixty (60) days of written notification.

(4) If, in the judgment of the water purveyor, an imminent health hazard exists, water service to the building or premises where a cross-connection exists may be terminated unless an air gap is immediately provided, or the cross-connection is immediately eliminated.

(5) Water mains served by the water purveyor but not maintained by the water purveyor should be considered cross-connections, with degree of hazard to be determined by the water purveyor. Degree of protection shall be based upon the degree of hazard, as determined by the water purveyor.

(6) In the event that the cross-connection control inspector does not have sufficient access to every portion of a private water system (e.g., classified research and development facilities; federal government property) to allow a complete evaluation of the degree of hazard associated with such private water systems, an approved reduced pressure principle assembly shall be required as a minimum of protection.

(b) No person shall fill special use tanks or tankers containing pesticides, fertilizers, other toxic chemicals or their residues from the public water system except at a location equipped with an air gap or an approved reduced pressure principle backflow prevention assembly properly installed on the public water supply.

Sec. 36-81 - Installation of assemblies

(a) No person shall commence or proceed with the installation of new backflow assemblies, the relocation of existing backflow assemblies or the replacement of existing backflow assemblies without first applying for and receiving from the Authority a permit authorizing such work. Each application shall be filed in writing on a form furnished for that purpose and shall contain such information as necessary to ensure that the work complies with all applicable State laws and the Authority ordinances.

(b) All backflow prevention assemblies shall be installed in accordance with the specifications furnished by the water purveyor, the manufacturer's installation instructions, and/or the latest edition of the state building code, whichever is most restrictive.

(c) All new construction plans and specifications, when required by the state building code and the North Carolina Department of Environmental Quality, shall be made available to the water purveyor for review and approval, and to determine the degree of hazard.

(d) Ownership, installation, testing, and maintenance of the assembly shall be the responsibility of the consumer, however installations, testing and maintenance work must be conducted by licensed and/or certified individuals as listed in this ordinance.

(e) If it has been determined that a consumer must install a backflow prevention assembly, the Utilities Department will provide the consumer with a letter of notification and required action. The following time periods shall be set forth for the installation of specified assemblies:

Health Hazard – 60 days

Non-health Hazard – 90 days

(f) Reduced pressure principle assemblies and reduced pressure principle detection assemblies must be installed in a horizontal position and in a location in which no portion of the assembly can become submerged in any substance under any circumstances. Pit and/or below grade installations are prohibited.

(g) The installation of a backflow prevention assembly which is not approved must be replaced with an approved backflow prevention assembly.

(h) The installer is responsible for ensuring a backflow prevention assembly is working properly upon installation and is required to furnish the following information to the City's Utilities Department within fifteen (15) days after an assembly is installed:

(1) Service address where assembly is located

(2) Owner and address, if different from service address

(3) Description of assembly's location

(4) Date of installation

(5) Installer, include name, plumbing company represented, plumber's license number, and project permit number

(6) Type of assembly, size of assembly

(7) Manufacturer, model number, serial number

(8) Test results/report

(i) When it is not possible to interrupt water service, provisions shall be made for a parallel installation of backflow prevention assemblies. The water purveyor will not accept an unprotected bypass around a backflow preventer when the assembly is in need of testing, repair, or replacement.

(j) Following installation, all reduced pressure principle backflow preventers (RP), double check valve assemblies (DCVA), pressure vacuum breakers (PVB), spill-resistant vacuum breakers (SVB), double check detector assemblies (DCDA), or reduced pressure principle detector assemblies (RPDA) are required to be tested by a certified backflow prevention assembly tester within ten (10) days.

(k) Enclosures for backflow prevention assemblies shall meet the following requirements:

(1) Shall be constructed of aluminum or fiberglass reinforced construction sized to totally enclose "wet" portion of backflow prevention assembly.

(2) Shall provide access through lockable doors or hinged lid for testing of back flow prevention assembly.

(3) Shall be totally removable for maintenance of backflow prevention assembly.

(4) Shall be lined with unicellular, non-wicking, insulation.

(5) Shall provide a thermostatically controlled heat source within the enclosure to provide freeze protection to minus thirty (30) degrees F.

(6) For enclosure of reduced pressure backflow prevention assemblies, a drain opening at each end shall be provided to accommodate full port discharge form device. Openings shall be protected against intrusion of wind, debris, and animals.

(7) Shall provide means of permanent anchor to concrete pad.

Sec. 36-82 - Testing and repair of assemblies

(a) Testing of backflow prevention assemblies shall be made by a certified backflow prevention assembly tester at the consumer’s expense. Such tests are to be conducted upon installation and annually thereafter or at a frequency established by the water purveyor. A record of all testing and repairs is to be retained by the consumer. Copies of the records must be provided to the City's Utilities Department within ten (10) business days after the completion of any testing and/or repair work.

(b) A certified backflow prevention assembly tester is allowed to test any backflow in our water service area.

(c) When repairs to backflow prevention assemblies are deemed necessary, whether through annual or required testing or routine inspection by the owner or by the water purveyor, these repairs must be completed within fourteen (14) days.

(d) All backflow prevention assemblies with test cocks are required to be tested annually or at frequency established by the water purveyor's regulations. For facilities that require an uninterrupted supply of water, and when it is not possible to provide water service from two (2) separate meters, provisions shall be made for a parallel installation of backflow prevention assemblies.

(e) All certified backflow prevention assembly testers must obtain and employ backflow prevention assembly test equipment which has been evaluated and/or approved by the water purveyor. All test equipment shall be documented on forms approved by the water purveyor. All test equipment shall be checked for accuracy annually, at a minimum, and calibrated, if necessary. All certified backflow prevention assembly testers shall provide a certificate of accuracy to the water purveyor as to such calibration, employing an accuracy/calibration method acceptable to the water purveyor.

(f) It shall be unlawful for any consumer or certified tester to submit any record to the city which is false or incomplete in any material respect. It shall be unlawful for any customer or certified tester to fail to submit to the water purveyor any record which is required by this ordinance. Such violations may result in any of the enforcement actions outlined in this ordinance.

Sec. 36-83 - Facilities requiring protection

(a) Approved backflow prevention assemblies shall be installed on the service line to any premises that the water purveyor has identified as having a potential for backflow.

(b) Premises having fire protection systems connected with the public water system shall be protected with an approved double check valve assembly as a minimum requirement. All fire systems using booster pumps, chemical agents, or additives to prevent freezing shall at a minimum be protected by an approved reduced pressure principle assembly.

(c) Water mains served by the Authority but not maintained by the Authority should be considered cross connections, with degree of hazard to be determined by the Director. Degree of protection shall be based on degree of hazard.

(d) For premises where, due to security requirements or other prohibitions (research and development), the Authority does not have access for a complete cross connection evaluation, an approved reduced pressure principle assembly shall be required as a minimum protection.

(e) Multiple-family, duplex, triplex, and quadraplex units which have shared plumbing shall have approved appropriate backflow protection. Shared plumbing shall mean one meter serving more than one dwelling unit.

(f) Any premises five stories or more shall have a reduced pressure principle assembly as minimum protection.

(g) Any premises which uses potable water for lawn irrigation purposes, or for chemically treated pools, whirlpools, spas, and other recreational fixtures shall install backflow prevention in accordance with the water purveyor specifications.

(h) No person, firm, or agency may connect to the Authority's fire hydrant system without approved backflow prevention. Agency refers to the Authority agencies as well as outside agencies

(i) No facility is exempted due the age of the facility.

(j) Other types of facilities or services not listed above or in appendix A [subsection (g)] may also be required to install approved backflow prevention assemblies if determined necessary by the water purveyor. The type of assembly required will be determined by the water purveyor and will be based on degree of hazard determined.

(k) All assemblies and installations shall be subject to inspection and approval by the water purveyor.

(l) Appendix A—Potential hazards. NOTE: This list is not intended to be an exhaustive list.

(1) Aircraft and missile plants

(2) Automotive services stations, dealerships, etc

(3) Automotive plants

(4) Auxiliary water systems:

   a. Approved public/private water supply

   b. Unapproved public/private water supply

   c. Used water and industrial fluids

(5) Bakeries

(6) Battery manufacturers

(7) Beauty shops/barber shops

(8) Beverage bottling plants

(9) Bottling plants

(10) Breweries

(11) Buildings—Hotels, apartment houses, public and private buildings, or other structures having unprotected cross-connections

(12) Canneries, packing houses, and rendering plants

(13) Car wash facilities

(14) Chemical plants—Manufacturing, processing, compounding or treatment

(15) Chemically contaminated water systems

(16) Commercial car-wash facilities

(17) Commercial greenhouses

(18) Commercial sales establishments (department stores, malls, etc.)

(19) Concrete/asphalt plants

(20) Connection to tanks, pumps, lines, steam boilers or vessels that handle sewage, lethal substances, toxic or radioactive substances

(21) Dairies and cold storage plants

(22) Dye works

(23) Film laboratories

(24) Fire sprinkler/suppression systems

(25) Hospitals, medical buildings, sanitariums, morgues, mortuaries, autopsy facilities, nursing and convalescent homes, medical clinics, and veterinary hospitals

(26) Industrial facilities

(27) Laundries

(28) Lawn care companies

(29) Lawn sprinkler/irrigation systems

(30) Metal plating, manufacturing, cleaning, processing, and fabricating plants

(31) Mobile home parks

(32) Oil and gas production, storage or transmission properties

(33) Paper and paper products plants

(34) Pest control (exterminating and fumigating)

(35) Plating plants

(36) Power plants

(37) Radioactive materials or substances plants or facilities handling

(38) Restaurants

(39) Restricted, classified, or other closed facilities

(40) Rubber plants (natural or synthetic)

(41) Sand and gravel plants

(42) Schools and colleges

(43) Sewage and storm drain facilities

(44) Swimming pools

(45) Wastewater treatment plants

(46) Waterfront facilities and industries

Sec. 36.84 - Fire Protection Systems

(a) All connections for fire protection with the public water system 2" and smaller shall be protected with an approved double check valve assembly as a minimum requirement. All fire systems using toxic additives or booster pumps shall be protected by an approved reduced pressure principle assembly at the main service connection.

(b) All connections for fire protection systems connected with the public water system greater than 2" shall be protected with an approved double-check detector assembly as minimum requirement. All fire protection systems using toxic or hazardous additives or booster pumps shall be protected by an approved reduced pressure principle detector assembly at the main service connection.

(c) All existing backflow prevention assemblies 2" and larger installed on fire protection systems that were initially approved by the water purveyor shall be allowed to remain on the premises, as long as they are being properly maintained, tested, and repaired as required by this Ordinance. However, if the existing assembly must be replaced (once it can no longer be repaired), or in the event of proven water theft through an un-metered source, the consumer shall be required to install an approved double-check detector assembly or reduced pressure principle detector assembly as required by this provision.

Sec. 36-85 - Connections with unapproved sources of supply

(a) No person shall connect or cause to be connected any supply of water not approved by the North Carolina Department of Environmental Quality to the water system supplied by the city. Any such connections allowed by the water purveyor must be in conformance with the backflow prevention requirements of this ordinance.

(b) In the event of contamination or pollution of a public or consumer potable water system, the consumer shall notify the water purveyor immediately in order that appropriate measures may be taken to overcome and eliminate the contamination or pollution.

Sec. 36-86 - Cross-connection prohibited

(a) No person shall connect or cause to be connected any supply of water not approved by the State of North Carolina to the water system supplied by the Authority, unless allowed by the Director. Any such connections allowed by the Director must be in conformance with title 15a, subchapter 18-C, subparagraph .0406, North Carolina Administrative Code, rules governing water supplies.

(b) In the event of a suspected contamination of a potable water system, the consumer shall notify the Authority immediately in order that appropriate measures may be taken to overcome and eliminate the contamination or pollution.

(c) Failure of the customer to cooperate in the installation, maintenance, testing or inspection of backflow prevention assemblies will be grounds for enforcement actions.

Sec. 36-87 - Enforcement

(a) The consumer or person in charge of any installation found not to be in compliance with the provisions of this ordinance shall be notified in writing with regard to the corrective action(s) to be taken.

(b) Such notice must explain the violation and give a time frame within which the violation must be corrected based upon the specifications of this ordinance.

(c) If the consumer or person in charge of any installation is found to be in violation of this ordinance and fails to correct the violation in a timely manner or to pay any civil penalty or expense assessed under this section, water service may be terminated, and shall be re-established when the violation is corrected and any applicable civil penalties are paid.

(d) Any offender who shall continue any violation beyond the time limit provided for in the aforementioned notification shall be subject to a civil penalty of up to one thousand dollars ($1,000.00) per violation. Each day in which a violation of any provision of this ordinance shall occur or continue shall constitute a separate and distinct offense. The maximum civil penalty shall not exceed ten thousand dollars ($10,000.00).

(e) Failure of consumer or certified tester to submit any record required by this ordinance, or the submission of falsified reports/records may result in a civil penalty of up to one thousand dollars ($1,000.00) per violation. If a certified backflow prevention assembly tester submits falsified records to the city, the city shall take the necessary actions to revoke certification to test backflow prevention assemblies within the potable water system for a time period not to exceed one (1) year. The tester will then be required to complete an approved certification course to acquire a new certification. Falsification made to records/reports after becoming recertified shall result in the permanent revocation of backflow testing certification, in addition to a civil penalty as provided for in this subsection.

(f) Failure of consumer to cause testing or maintenance required by this ordinance may result in a civil penalty of up to two hundred dollars ($200) per day but limited to a maximum penalty of three thousand dollars ($3000).

(g) Requests for extension of time shall be made in writing to the Utilities Director of the City or his authorized representative.

(h) Enforcement of this program shall be administered by the Utilities Director of the City or his authorized representative.

Sec. 36-88 – Limitations of Liability

(a) The City shall not be held liable, for any cause, for failure to detect any containment assembly failing to operate adequately, or failure to identify any specific hazard, which may result in contamination of its public water supply, nor shall this article diminish the

responsibility of any owner from whose property a containment of the public water supply may originate.