

AN ORDINANCE TO AMEND CODE BY ENACTING A BACKFLOW PREVENTION PROGRAM

Section 01 - Objectives of Ordinance

It is the intent of this section to recognize that there are varying degrees of hazard to potable water within the public water system. It is also the intent to insure the degree of protection be the same as the degree of hazard. The purpose of this section is:

- (1) To protect the Davie County public potable water supply against actual or potential cross-connections, backflow and back-siphonage by isolating, within the premises or private property, contamination or pollution that has occurred or may occur because of an undiscovered or unauthorized cross-connection on the premises or private property.
- (2) To eliminate or control cross-connections, back-flow and back-siphonage or any other source of water or process water used for any purpose whatsoever which may jeopardize the safety of the public potable water supply of Davie County.
- (3) To provide a continuing inspection program of cross-connection control which will systematically and effectively control all actual or potential cross-connections, which may be installed in the future.

Section 02 – Definitions

AIR GAP SEPARATION: The unobstructed vertical distance through the 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. An "approved air-gap separation" shall be at least double the diameter of the supply pipe. In no case shall the air gap separation be less than one (1) inch.

APPROVED: In reference to backflow prevention assemblies or methods, those assemblies or methods which have been accepted by the Director or his/her designee as an effective means or method to prevent backflow.

BACKFLOW: Any flow of water, liquid, gas or other substances, or any combination thereof, into the distribution piping of a potable water supply from any source or sources.

BACKFLOW PREVENTION ASSEMBLY: An approved assembly or method used to prevent backflow from occurring in the potable water supply.

BACK-PRESSURE BACKFLOW: Backflow caused by a pump, elevated tank, boiler, or other means that could create pressure with the system greater than the supply pressure.

BACK-SIPHONAGE BACKFLOW: A reversal of the normal direction flow in the pipeline due to a negative pressure (vacuum) being created in the supply line with the backflow source subject atmospheric pressure

CERTIFIED TESTER: A person who has proven his/her competency to test, repair, overhaul and prepare reports on backflow prevention assemblies as evidenced by certification of successful completion of a training program approved by the State of North Carolina. 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. The Davie County Public Utilities Department must approve all Certified Testers prior to use of their services.

CONSUMER/CUSTOMER: Any person, firm, or corporation using or receiving water from Davie County Public Utilities Department.

CONTAINMENT: Prevention of possible contamination from a private water system by installing an approved backflow prevention assembly.

CONTAMINATION: The degradation of the quality of water so as to constitute a hazard or impair the usefulness of water.

CROSS-CONNECTION: Any physical connection between the county's water supply system and any other source. This includes piping systems, sewer fixtures, containers, or devices whereby water or other liquids, mixtures, or substances may flow into or enter the county's water supply system.

CROSS-CONNECTION INSPECTOR/ORC: An employee of the Davie County Public Utilities Department designated by the Director to administer and enforce the provisions of this ordinance.

DAVIE COUNTY PUBLIC UTILITIES DEPARTMENT: The authority having the jurisdiction of the Davie County water and sewer system and related appurtenances.

DEGREE OF HAZARD: Derived from an evaluation of the health, hazard, system, plumbing, or pollution hazards.

DIRECTOR: The Director of the Davie County Public Utilities Department.

DOUBLE CHECK VALVE ASSEMBLY: An assembly composed of two (2) single, independently-acting approved check valves, including tightly closing shut-off valves located at each end of the assembly, and suitable connections for testing the water-tightness of each check valve.

DOUBLE CHECK-DETECTOR CHECK VALVE ASSEMBLY: An assembly composed of an approved double check valve assembly with a bypass water meter and a meter-sized approved double check valve device. The meter shall register accurately for very low flow rates and shall register all flow rates.

HIGH HAZARD: An actual or potential threat of contamination to the public water system or to a private water system to such a degree or intensity that there could be a danger to health.

IMMINENT HAZARD: An actual threat of contamination that presents a danger to the public health with consequences of serious illness or death.

MODERATE HAZARD: One that presents foreseeable and significant potential for pollution, nuisance aesthetically objectionable or other undesirable alterations of the drinking water supply.

PLUMBING INSPECTOR: The dually authorized Plumbing Inspector for Davie County as certified by the North Carolina Code Qualifications Board.

POINT OF DELIVERY: The terminal end of a service connection from the public potable water system, i.e. where the Public Utilities Department loses sole jurisdiction over the water; the point where water leaves the public water system and enters a private water system.

POTABLE WATER: Water from any source which has been approved for human consumption by the appropriate agency of the State of North Carolina.

PRIVATE WATER SYSTEM: A system of pipes or other associated facilities that is not part of the county's public water system and is used to move or receive water, regardless of the source of water in such system.

REDUCED PRESSURE PRINCIPLE ASSEMBLY: An assembly containing within its structure a minimum of two (2) independently acting, approved check valves, together with an automatically operating pressure differential relief valve located between the check valves. The first check valve reduces the supply pressure by a predetermined amount so that during normal flow and at cessation of normal flow, the pressure between the checks shall be less than the supply pressures. In case of leakage of either check valve, the differential relief valve, by discharge to the atmosphere, shall operate to maintain the pressure between the checks less than the supply pressure. The assembly must include properly located test cocks and tightly closing shut-off valves at each end of the assembly.

REDUCED PRESSURE PRINCIPLE-DETECTOR ASSEMBLY: An assembly composed of an approved reduced pressure principle backflow prevention assembly with a bypass water meter and a meter-sized approved reduced pressure principle devices. The meter shall register accurately for very low flow rates and shall register all flow rates.

WATER SUPPLY (APPROVED): Any public potable water supply which has been investigated and approved by the appropriate agency of the State of North Carolina. The system must be operating under a valid health permit.

Section 03 - Elimination of Cross-Connections

No private water system may be connected in any manner to the public water system unless the requirements of this ordinance and other applicable laws have been satisfied.

Only an approved device can be installed to meet the requirements of this ordinance. The installation of any backflow prevention assembly which is not approved must be replaced with an approved backflow prevention assembly.

Section 04 - Installation, Testing and Maintenance of Backflow Prevention Assemblies

All backflow prevention assemblies shall be installed in accordance with the manufacturer's instructions. Only backflow preventers approved by Davie County Public Utilities Department and meeting the North Carolina State Plumbing Code shall be installed.

All backflow prevention assemblies required by this ordinance must be installed and maintained above ground on the customer's premises as part of the customer's water system.

Ownership, testing and maintenance of the backflow prevention assembly will be the responsibility of the customer. Each assembly required in this ordinance must be functioning properly at all times.

Testing of backflow prevention assemblies shall be conducted by a certified tester (approved by Davie County Public Utilities Department) at the customer's expense. Tests shall be conducted upon installation and annually thereafter with a record of all testing and repairs retained by the customer. A copy of the certified record for each test or repair must be sent to the Davie County Public Utilities Department by such customer within thirty (30) days after the completion of each test or repair. Such records must be maintained on forms provided by the Davie County Public Utilities Department.

Each backflow prevention assembly required under this ordinance must be accessible (above

ground) to the Davie County Public Utilities Department.

When it is not possible to interrupt water service, the customer shall provide for the parallel installation of an approved backflow prevention assembly, The Cross-Connection Inspector will not accept an unprotected bypass around a backflow prevented when the assembly is in need of testing, repair or replacement.

Any time that repairs to backflow assemblies are deemed necessary, whether through annual testing or routine inspection by the owner. these repairs must be completed within a time specified in accordance with the degree of hazard. Repairs on a private water system considered to be an imminent hazard shall be completed within twenty-four (24) hours, a high hazard shall be completed within ten (10) days, and all other repairs within twenty (20) days for any other private water system. Failure to comply can result in termination of a customer's water service.

Upon determination that a backflow prevention assembly is required to be installed on a customer's private water system, the customer will be notified in writing of the approved backflow prevention assembly which is required. On existing systems, the customer will have the following time periods within which to install the specified backflow prevention assembly.

Air-gap separation	30 days
Reduced pressure principle assembly (3/4' X 2)	30 days
Reduced pressure principle assembly (2-1/2" and larger)	60 days
Other approved backflow prevention assembly	30 days

The Director or his/her designee may require the installation of the required backflow prevention assembly immediately or within a shorter time period than specified above if he determines that any condition poses an unreasonable threat of contamination to the public water supply system. All devices required for new construction shall be installed and inspected by the Davie County Plumbing Inspector prior to occupancy. All new construction plans and specifications shall be made available to the Director for approval and to determine the degree of hazard.

Before a backflow preventer is placed in service, it will require a permit and inspection by the Davie County Plumbing Inspector. The plumbing inspector's responsibility begins at the point of delivery downstream of the customer side of the meter and continues throughout the entire length of the consumer's water system. When cross-connections or potential cross-connections are discovered by the plumbing inspector, they shall require a backflow prevention assembly approved by the North Carolina Plumbing Code and the Davie County Public Utilities Department. These incidents shall be reported to the Davie County Public Utilities Department.

The Director shall be notified by the customer when the nature of the use of property changes so as to change the hazard classification of the property if necessary.

Section 05 - High Hazard Facilities and Methods of Correction

All high hazard facilities must have an approved reduced pressure principle assembly as a minimum containment device.

High hazard facilities include, but are not limited to: any private water system used or designed to pump or which may become pressurized for use with a booster for any reason to the extent that back pressure may occur; any private water system which contains water which has been or is being re-circulated; a building with five or more stories above ground level; brewery; car wash with recycling system; bottling plant; chemical plant; dentist's office; dry cleaning plant; fertilizer plant; film laboratory; fire sprinkler or standpipe system with chemical additives; hospital, clinic, medical building; irrigation system with chemical additives; laboratory; commercial laundry (except self-service laundry); metal processing plant; morgue or mortuary; nursing home; pharmaceutical plant; -power plant; swimming pool; sewage treatment plant; tire manufacturer;

veterinary hospital or clinic; restaurants; battery manufacturers; exterminators and lawn care companies; dairies; canneries; dye works; recycling facilities.

If a cross-connection inspector does not have sufficient access to every portion of a private water system to permit the complete evaluation of the degree of hazard associated with such private water system, an approved reduced pressure principle assembly must be installed.

Section 06 - Moderate Hazard Facilities and Methods of Correction

Moderate hazard facilities include, but are not limited to: fire sprinkler systems without booster pump facilities or chemical additives; connections to tanks, lines and vessels that handle non-toxic substances; lawn sprinkler systems without chemical injection or, booster pumps; all industrial and most commercial facilities not identified as high hazard facilities.

All moderate hazard facilities must have a Reduced pressure principle assembly as a minimum containment device.

Section 07 - Lawn Irrigation Systems

All existing lawn irrigation systems must have a Reduced pressure principle assembly as a minimum containment device.

All proposed lawn irrigation systems will be served through a separate meter and must have a Reduced pressure principle assembly valve assembly as a minimum containment device.

Section 08 - Fire Sprinkler Systems

All unmetered fire sprinkler systems without booster facilities or chemical additives must have a Reduced pressure principle assembly check valve assembly as a minimum containment device.

All unmetered fire sprinkler systems with a booster facility or chemical additives must have a reduced pressure principle-detector assembly as a minimum containment device.

Section 09 - Imminent Hazards

If the Director and/or Cross Connection Inspector determines that a customer's private water system constitutes an imminent hazard, such customer shall install a backflow prevention assembly as may be specified by the Davie County Public Utilities Department within twenty-four (24) hours after notice of the determination. If the customer fails to take corrective measures in a timely manner, or refuses to install the specified assembly, water service to the customer's private water system may be terminated. If the Director and/or Cross Connection Inspector is unable to give notice to such customer or his representative within twenty-four (24) hours after the determination that an imminent hazard exists, despite reasonable efforts to provide such notice, the Davie County Public Utilities Department may terminate water service to the private water system until the specified corrected measures are taken. Upon correction of the existing problem and with the inspector's approval, water service will be continued.

Section 10 - Right of Entry

The Director or his authorized agent shall have the right to enter any building, structure or premises during normal working hours to perform any duty imposed upon him by this ordinance. Duties may include sampling and testing water, or inspections and observations of all piping systems connected to the public water supply. Prior notice will be given unless an imminent hazard has been reported. Refusal to allow entry for these purposes may result in termination of the water service.

At the request of the Director and/or Cross Connection Inspector, the customer shall furnish any pertinent information regarding the piping and chemical storage on such property where cross-connections are deemed possible.

Section 11 - Responsibility of Customer

The customer shall be responsible for the elimination of or protection against all cross-connections on his premises.

The customer shall maintain any backflow prevention assembly within his premise in good operating condition. The customer shall correct any malfunction of the backflow prevention which is revealed by periodic testing.

The customer shall be responsible for the payment of all fees for annual testing, re-testing in the case that the assembly fails to operate correctly, and repairs.

A customer must immediately notify the Davie County Public Utilities Department if the customer has reason to believe that backflow has occurred from the customer's private water system to the public water system.

A customer shall send a copy of all test within thirty days to Davie County Public Utilities.

Section 12 - Unapproved Source of Supply

No person shall connect or cause to be connected any supply of water not approved by the State of North Carolina to the public water supply system.

Where a connection to a county water line is made, and the property owner continues to have a well or other source of water, it shall be unlawful for the plumbing servicing any building upon such property to be so connected that any water outlet within the building may be served with water from any source other than the county connection, and it shall also be unlawful to have plumbing cross-connected or so installed that water from the county water system or the private water system may in any way become intermingled.

Section 13 – Violations

A written notice of violation shall be given to any person who is determined to be in violation of any provision of this ordinance.

Such notice shall set forth the violation and the time period within which the violation must be corrected. The violation must be corrected within a reasonable time, as specified in the notice, not to exceed thirty (30) days from receipt of the violation notice. If the Director and/or Cross Connection Inspector determines that the violation is occurring on a customer's private water system and that such violation has created or contributed to the existence of an imminent hazard, the customer may be required to correct the violation immediately.

Water service may be terminated to a customer if the customer fails to correct a violation or to pay any civil penalty or expense assessed under this section. Termination of water service will be without prejudice to the county's ability to assert any other remedy available to the county against the customer or any other person responsible for the violation.

The violation of any provision of this ordinance shall subject the violator to a civil penalty. Each subsequent day that a violation listed in (i) - (iv).continues shall constitute a separate and distinct offense according to the following schedule:

- Unprotected cross-connection involving a private water system which is an imminent

- hazard - \$1,000/day
- Unprotected cross-connection involving a private water system which is high hazard - \$750/day
- Unprotected cross-connection involving a private water system which is a moderate hazard- \$500/day
- Unprotected cross-connection for which no other civil penalty is prescribed - \$250/day

Each violation listed in (v) - (ix) shall be considered a onetime violation subject to the following schedule:

- Any tester who falsifies records will loose their approved tester status and/or be subject to a \$500 penalty
- Submitting incomplete records or failing to submit records may cause the tester to be removed from the approved tester list and/or \$250 penalty
- Failing to test backflow prevention assemblies as required - \$100
- Failing to maintain backflow prevention assemblies as required - \$100
- Any other violation of this ordinance - \$100

The Director may increase any civil penalty assessed under this section by \$100 or fifty percent (50%) of the maximum civil penalty associated with the violation, whichever is greater, for a second violation of the same provision within a two year period. Water service may be terminated after a third violation of the same provision within a two year period. Any person violating any provision of this ordinance shall pay to the county all expenses incurred by the county in repairing any damage to the public water system caused in whole or in part by such violation and any expense incurred by the county in investigating such violation. All such expenses are deemed to be a part of the civil penalty assessed with the violation.

Section 14 - Right of Appeal

Upon notice of the backflow prevention method required, the owner may request a hearing to review the selection process with the Davie County Public Utilities Department personnel. If the owner is dissatisfied with the results of this review, a written request for a hearing must be sent to the Director within ten (10) days of the Departmental review. Within ten (10) days, a formal hearing with the Director will be scheduled. A written response will be issued within ten (10) days after the hearing. The owner shall thereafter have the right of further appeal to the County Commissioners.