

Nov. 7-2016 meeting  
approval 12/13/16  
approved at  
meeting

## WATER

### SECTION 1 – IN GENERAL

#### A. Definitions.

For the purposes of this chapter, the following words and phrases shall have the meanings respectively ascribed to them by this section:

*Applicant.* The individual, group of individuals, partnership, firm, association, institution, corporation, political subdivision or agency making application for the establishment of a new water system or expansion of an existing water system.

*Complex.* More than three single family dwelling units.

*Connection.* A tap into the water distribution main for the purpose of supplying water to a potential user.

*Connection fee.* A charge payable to the county or authorized representative for connection to a county water system.

*Connector.* The person connecting or connected to a water system.

*Housing development or complex.* Includes but is not limited to multi-family units, apartments and mobile home sites.

*Multi-family units.* Two (2) or more single family units in one structure.

*Potable water.* Water which does not contain pollution, contamination, excessive minerals or infection, and is considered satisfactory for domestic consumption.

*Single family residential unit.* A group of rooms, including cooking accommodations, occupied as a single housekeeping unit.

*Supply.* Water from subsurface and surface sources, or water from the extension of an existing water system.

*Utility director* means the County Administrator or his designee that is authorized to enforce its water and sewer rules and regulations, and the provisions of the sewer use standards.

*Water main.* A conduit used for the purpose of conveying water from a supply to a point where an individual user may make connection for service or to a dead end.

*Water system.* All well lots, wells or other supply, pumping stations, treatment plants, water mains and storage facilities, valves, fire hydrants, and all other appurtenances, excluding the private individual water service lines from the property side of the water meter to its destination.

## **B. Penalties.**

Any person violating any provision of this chapter shall be guilty of a misdemeanor and may be punished by a fine of not less than twenty-five dollars (\$25.00) nor more than five hundred dollars (\$500.00) or by imprisonment in jail for not less than thirty (30) days nor more than six (6) months, or by both, and each day of violation shall be a separate offense. The county may apply to an appropriate court for an injunction or other legal process to prevent or stop any practice in violation of this chapter.

## **SECTION 2 – WATER SYSTEMS**

### **A. Generally.**

1. No applicant shall supply water in the County until the water system has been approved by the director. Should any water system be disapproved by the director, written notice of the reasons therefor shall be given to the applicant. If no action is taken within ninety (90) days from the date the application is filed with the County, then such application shall be deemed to be approved.
2. Where an applicant has previously established a water system and proposes to expand such system in the county, the applicant shall, prior to approval, agree to either:
  - a. Where an existing supply exists, sell water to the County for a specified rate; convey to the County the new system, exclusive of any supply or storage facility together with appurtenant real estate, at no cost to the County; convey at the cost of construction the expanded supply and storage facility together with the appurtenant real estate and pay a connection fee in accordance with the schedule of current charges for initial water connections; or
  - b. Where a new supply is to be developed, build and convey to the County at no cost, the complete internal distribution system within the area to be served; convey to the County at cost all well lots on which are located existing wells utilized in the system, wells or other supply, treatment plant, storage facilities and all appurtenant real estate. The County shall have the option to participate with the applicant in developing a new supply by paying one-half (½) the cost of drilling, test pumping and chemical analysis, such costs to be reimbursed to the applicant from connection fees if the supply is determined by the director to be adequate for County use. The County shall pay all costs in developing

storage facilities. The applicant shall pay a connection fee in accordance with the schedule of current charges for initial water connections.

- c. In either a. or b. above, the applicant shall convey the established water system to the County if the parties can concur on a fair market value for such system. Should the parties be unable to agree on such value, the County reserves the right of condemnation of the established water system.
- d. In lieu of a. and b. above, the applicant may convey, at no cost to the County, the existing water system, the original supply, and the new water system that will serve the expanded area and pay a connection fee equal to the actual cost of the meters.

3. Where an applicant desires to establish a new water system for areas within the County which are served by the County or not served at all, the applicant shall, prior to approval, agree to either:

- a. Extend mains and laterals to connect with the existing County-owned water system at no expense to the County and provide sufficient storage for his purposes, which storage facility shall meet state standards; or provide a complete water system to serve the new area, convey the water distribution system within such new area to the County at no cost, and convey all supply and treatment facilities and other appurtenances to the County at cost and pay the existing connection fee.
- b. Construct and convey at no cost to the County, the water distribution system within the area to be served, convey all supply and treatment facilities and other appurtenances to the County at cost, and participate with the County in developing a new well by paying one-half the cost of drilling, test pumping and chemical analysis, such cost to be reimbursed to the applicant from connection fees if the supply is determined by the director to be adequate for County use, and pay connection fees in accordance with the schedule of current charges for initial water connections. The County shall pay all costs incurred in developing storage facilities.
- c. In lieu of a. and b., the applicant may convey, at no cost to the County, the new water system which will serve the

expanded area and pay a connection fee equal to the actual cost of the meters.

The requirements contained in paragraphs (1) and (2) above may be waived by the County.

**B. Application; Compliance with Provisions.**

Except as hereafter noted, the application for a new water system or for the extension of an existing water system shall be made in writing, shall state in detail the type of water supply, the number, nature and location of connections proposed to be served and shall be accompanied by scale drawings showing location and capacity of pumping stations, treatment plants and storage facilities, and pipe sizes and materials of the proposed water distribution facilities; including mains, valves, fire hydrants and other appurtenances together with such other information as the director may require.

It shall be unlawful for any person to begin construction of a water system in a new subdivision or expansion of a water system in an existing subdivision, housing development or complex prior to submission and approval of the plans for the water system therein having been obtained from the director. No new water system or extension of an existing water system in the County serving or being capable of serving three (3) or more living units shall be operated until all provisions of this chapter are complied with by the applicant, except when such system is in an agricultural zone where the total development will consist of less than fifteen (15) units or in residentially zoned areas with lot minimums of forty thousand (40,000) square feet and one hundred fifty (150) feet of road frontage, and the total development will be less than fifteen (15) lots.

**C. Connection Required.**

1. All buildings located within the county where the County-owned water system is at the lot line, or within the street or easement adjoining such lot line, or as required by the concurring resolution under § 15.2-5137 of the Code of Virginia, shall be connected with such system.
2. The connection fee shall be in accordance with the current schedule of charges for initial water connections. The owner or tenants occupying such buildings shall use the County-owned system for water consumed or used in and about the premises on which such

buildings are located.

3. Buildings constructed and occupied prior to the date of the adoption of this ordinance shall be exempted from the requirement to connect to such system.

**D. Defacing Equipment; Illegal Use of Water.**

No person shall deface or injure any house, well, valve wheel, fire plug or other fixture connected with or pertaining to the water system. No person shall tamper with or place any material on the meter, meter box or valve of a water main or service pipe; or obstruct access to any fixture connected with the water system; or remove, open or injure any pipe, fire hydrant, meter, meter box or valve. The owner of the premises shall be responsible for the water obtained illegally from the owner's service connection.

**SECTION 3 - CROSS-CONNECTIONS**

**A. Definitions.**

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

*Auxiliary water system.* Any water system on or available to the premises other than the waterworks. These auxiliary waters may include water from another county's waterworks; or water from a source such as wells, lakes, or streams; or process fluids; or used water. They may be polluted or contaminated or objectionable, or constitute a water source or system over which the county does not have control.

*Backflow.* The flow of contaminants, pollutants, process fluids, used water, untreated waters, chemicals, gases, non-potable waters into any part of a waterworks.

*Backflow prevention device.* Any approved device, method, or type of construction intended to prevent backflow into a waterworks.

*Consumer.* The owner or person in control of any premises supplied by or in any manner connected to a waterworks.

*Contamination.* Any introduction into pure water of micro-organisms, wastes, wastewater, undesirable chemicals, or gases.

*Cross-connection.* Any connection or structural arrangement, direct or indirect, to the waterworks whereby backflow can occur.

*Degree of hazard.* This is a term derived from an evaluation of the potential risk to health and the adverse effect upon the waterworks.

*Double gate—double check valve assembly.* An approved assembly

composed of two (2) single, independently acting check valves including tightly closing shut-off valves located at each end of the assembly and petcocks and test gauges for testing the water-tightness of each check valve.

*Health hazard.* Any condition, device, or practice in a waterworks or its operation that creates, or may create, a danger to the health and well-being of the water consumer.

*Pollution.* The presence of any foreign substance (chemical, physical, radiological, or biological) in water that tends to degrade its quality so as to constitute an unnecessary risk or impair the usefulness of the water.

*Process fluids.* Any fluid or solution which may be chemically, biologically, or otherwise contaminated or polluted which would constitute a health, pollution, or system hazard if introduced into the waterworks. This includes, but is not limited to:

- (1) Polluted or contaminated waters;
- (2) Process waters;
- (3) Used waters originating from the waterworks which may have deteriorated in sanitary quality;
- (4) Cooling waters;
- (5) Contaminated natural waters taken from wells, lakes, streams, or irrigation systems;
- (6) Chemicals in solution or suspension; and
- (7) Oils, gases, acids, alkalis, and other liquid and gaseous fluids used in industrial or other processes, or for fire fighting purposes.

*Pure or potable water.* Water fit for human consumption and use that is sanitary and normally free of minerals, organic substances, and toxic agents in excess of reasonable amounts for domestic usage in the area served and normally adequate in supply for the minimum health requirement of the persons served.

*Reduced pressure principle back-flow prevention device.* A device containing a minimum of two (2) independently acting check valves together with an automatically operated pressure differential relief valve located between the two (2) check valves. During normal flow and at the cessation of normal flow, the pressure between these two (2) checks shall be less than the supply pressure. In case of leakage of either check valve, the differential relief valve, by discharging to the atmosphere, shall operate to maintain the pressure between the check valves at less than the supply pressure. The unit must include tightly closing shut-off valves located at each end of the device, and each device shall be fitted with properly located test cocks. These devices must be of the approved type.

*Service connection.* The terminal end of a service line from the

waterworks. If a meter is installed at the end of the service, then the service connection means the down-stream end of the meter.

*System hazard.* A condition posing any actual, or threat of, damage to the physical properties of the waterworks or a consumer's water system.

*Waterworks.* All structures and appliances used in connection with the collection, storage, purification and treatment of water for drinking or domestic use and the distribution thereof to the public or residential consumers as set forth in Title 62.1, Chapter 4, Section 62.1-45a, 1950 Code of Virginia, as amended.

**B. General.**

No applicant or customer shall install or maintain a water service connection to any premises where cross-connections are abated or controlled by the county, nor shall the applicant or customer install or maintain any connection whereby water from an auxiliary water system may enter a waterworks or customer's water system unless the auxiliary water system and the method of connection and use of such system shall have been approved by the county.

**C. Cross-Connections – Corrections Thereof.**

The county, to protect the public water system from contamination or pollution due to backflow or back-siphoning through the water service connection, if in the judgment of the county, a cross-connection does or may exist, shall have the right to require the necessary control devices to be installed by the applicant or customer at his expense, to insure the protection of the county system. The county shall also designate at least one (1) agent to act as the cross-connection inspection, who will review, approve, inspect, and re-inspect cross-connection control installations. The county shall keep on record a result of all tests, inspections, and re-inspections of all devices controlling cross-connections.

The customer shall install all necessary devices required by the county and shall maintain these devices in good working condition, and shall make the premises open for inspections by the county and shall furnish all necessary information required to make proper inspections.

**D. Applicants for Water Service.**

All applicants for water service for developments other than single-family residential shall include with the application the necessary building and plumbing plans showing all information required by the county for the

review and approval process.

**E. Properties Requiring Cross-Connection Protection and Types of Protection.**

Generally, all properties connected to the county water system shall have approved cross-connection or backflow prevention devices installed on each water service line where, in the judgment of the county, a health, pollution, or system hazard may exist to the waterworks. The county shall designate the type of protection and device required for each service depending on the degree of hazard that exists or may exist. The degree of hazard shall be determined by the county upon review of the application and shall inform the applicant as to what devices are required. In some cases, the county may have to inspect the existing or proposed plumbing system when completed to determine the exact device required.

Generally, properties meeting the following description shall have the associated control devices:

- (1) Premises having an auxiliary water system, unless such auxiliary system is accepted as an additional source by the county and the source is approved by the state health department shall have "a safe air gap" which shall be at least two (2) times the inside diameter of the water inlet pipe, but shall not be less than one (1) inch.
- (2) Premises on which any substance is handled in such a manner as to create an actual or potential hazard to a waterworks (this shall include premises having sources or systems containing process fluids or water originating from a waterworks which are no longer under the control of the county), shall have an air gap or an approved reduced pressure principle backflow preventer.
- (3) Premises having internal cross-connections that, in the judgment of the county, or the state health department, may not be easily correctable or intricate plumbing arrangements which make it impracticable to determine whether or not cross-connections exist, shall have adequate protection devices to properly protect against a potential cross-connection and the degree of hazard determined by the county.
- (4) Premises where, because of security requirements or other prohibitions or restrictions, it is impossible or impractical to make a complete cross-connection survey, shall have adequate protection devices to properly protect against a potential cross-connection and the degree of hazard determined by the county.
- (5) Premises having a repeated history of cross-connections being established or re-established, shall have adequate protection devices to

properly protect against the degree of hazard determined by the county.

(6) Premises having fire protection systems utilizing combinations of sprinklers, fire loops, storage tanks, pumps, anti-freeze protection, or auxiliary water, shall have an approved air gap.

(7) Systems having direct connections from waterworks with no pumps or storage facilities, no connections to other water supplies, no anti-freeze or other chemicals added to the fire system, and all sprinkler heads discharging to the atmosphere are not required to have positive protective devices, although the owner may wish to install a check valve to keep the sprinkler system filled at all times.

(8) Systems having direct connections to the waterworks plus one or more of the following: Approved storage tanks, fire pumps taking suction from approved storage tanks, and with all facilities served by the waterworks must be provide an air gap, an approved double gate-double check valve assembly, or a reduced pressure principle backflow preventer (reduced pressure device). Storage facilities must meet the requirements for pure water storage and the water in the tank must be maintained in pure water condition.

(9) Systems having direct connections to the waterworks similar to "G" and with an auxiliary supply within 1700 feet of the pump connection must provide an air gap, a double gate-double check valve assembly, or a reduced pressure device depending on the quality of the auxiliary supply. A pump connection adjacent to a river, pond, or other raw water sources requires an air gap. An auxiliary source from an approved water supply requires either of the two (2) mechanical devices.

(10) Systems having direct connections to the waterworks and inter-connections with auxiliary supplies such as pumps taking suction from raw water sources, exposed storage tanks, industrial water supplies, connections to unapproved groundwaters, or where anti-freeze or other chemicals are added must provide an air gap.

(11) Systems having direct connections to the waterworks from buildings having combined industrial and fire systems either with or without storage tanks or pump connections must provide an air gap.

(12) Systems having direct connections to waterworks serving lawn sprinkler or irrigation systems must provide an air gap, double gate-double check assembly, or a reduced pressure device. If the sprinkler or irrigation system is also connected to an auxiliary source, an adequate design must be provided to prevent backflow.

(13) Premises having booster pumps connected to the waterworks shall be equipped with a low pressure cut-off device to shut off the booster pump

when the pressure in the waterworks drops to a minimum of 10 PSI gauge.

F. Approved Devices.

All backflow and cross-connection prevention devices shall be of the approved type and shall have been tested by a recognized testing laboratory or evaluation agency and be of satisfactory materials and approved by the county and state health department. A list of all approved devices shall be kept by the county.

G. Location of Devices.

All cross-connection and backflow protection devices shall be located as approved by the county during review and approval of application, and shall provide adequate room and access for inspections and testing.

H. Inspections, Re-inspections and Testing.

The county shall make thorough inspections and operational tests at least annually of backflow and cross-connection prevention devices. Where private storage facilities are provided, the county may take water samples monthly to be tested to verify that the water remains of satisfactory bacteriological quality.

If, upon inspection by the county, any device or facility does not pass inspections and testing, it shall be immediately corrected by the customer. Results of any testing and inspections made by the county shall be available for inspection to the customer and the county shall notify, in writing, the customer of any device or facility that fails testing or inspection.

I. Disconnection; Termination of Service.

Where any cross-connection or backflow prevention devices have not been installed, removed, bypassed, or where devices have not passed inspections or tests and corrective action is not being taken to restore the device in proper working order, the county may deny or discontinue service to the premises. The county may also discontinue service to property with protective devices, if the county system's pressure is lowered to 10 PSI gauge or if the customer denies access to the premises for inspection or testing.