

The following ordinance proposed by the Board of Supervisors of Patrick County at a regular meeting on March 14, 2011 on motion by Jack Boyce, seconded by Ron Knight and carried, is hereby adopted:

**AN ORDINANCE ENTITLED
“THE CROSS CONNECTION ORDINANCE”**

WHEREAS, the purpose of this Ordinance is to prevent the backflow of contaminate waters and other substances through cross-connections with the PSA water supply and hereby finds that clean water and clean air is a necessary and proper objective.

NOW THEREFORE, BE IT ORDAINED by the Patrick County Board of Supervisors that the following policies, rules, and regulations to prevent and control cross-connections and backflow into the public water supply be adopted.

Definitions:

Air gap separation means 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.

Auxillary water system means any water system on or available to the premises other than the waterworks. These auxiliary waters may include water from another purveyor’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 water purveyor does not have control.

Backflow means the flow of contaminants, pollutants, process fluids, used water, untreated waters, chemicals, gases or nonpotable waters into any part of a waterworks.

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

Bureau means the bureau of sanitary engineering of the state department of health.

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

Consumer's water system means any water system located on the consumer's premises, supplied by or in any manner connected to a waterworks.

Contamination means any introduction into pure water of microorganisms, wastes, wastewater, undesirable chemicals or gases.

Cross connection means any connection or structural arrangement, direct or indirect, to the waterworks whereby backflow can occur.

Degree of hazard means conditions derived from an evaluation of the potential risk to health and the adverse effect upon the waterworks.

Designated agent means the designated agent of the Public Service Authority (PSA).

Double gate double check valve assembly means an approved assembly composed of two single, independently acting check valves including tightly closed shutoff valves located at each end of the assembly and petcocks and test gauges for testing the watertightness of each check valve.

Existing ground level means the level above which surface water will not accumulate under normal conditions.

Flood level rim means the top edge of the receptacle over which water could overflow.

Health hazard means 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.

Owner means the person having legal title to the property or the person in charge, care and control of the property where the facilities in question are located; also, the tenants of such property.

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

Pollution hazard means a condition through which an aesthetically objectionable or degrading material may enter the waterworks or consumer's water system.

Process fluids means 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.
- (7) Oils, gases, acids, alkalis and other liquid and gaseous fluids used in industrial or other processes, or for firefighting purposes.

Pure water or potable water means water fit for human consumption and use which 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 backflow prevention device means a device containing a minimum of two independently acting check valves together with an automatically operated pressure differential relief valve located between the two check valves. During normal flow and at the cessation of normal flow, the pressure between these two checks shall be no 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 shutoff 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 means 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 downstream end of the meter.

Service line means that portion of the water line from the consumer's side of the water meter to the first water outlet.

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

Toxin means any substance of solids or liquids harmful for human consumption.

Used water means any water supplied by a water purveyor from waterworks to a consumer's water after it has passed through the service connection.

Vacuum breaker, atmospheric means a vacuum breaker designed so as not to be subjected to continuous static line pressure.

Vacuum breaker, pressure type means a vacuum breaker designed to be operated under conditions of static line pressure.

Water purveyor means an individual, group of individuals, partnership firm, association, institution, corporation, municipal corporation, county or authority which supplies water to any person within this state from or by means of any waterworks.

Waterworks means all structures, equipment and appurtenances used in the storage, collection, purification, treatment of and distribution of pure water except for the piping and fixtures inside the building where such water delivered, as set forth in Code of Virginia Section 32.1-167.

Inspections: Pursuant to the policies, rules, and regulations program, the PSA hereby authorized its designated agent in accordance with this cross-connection control program and the waterworks of the Virginia Department of Health to inspect the plumbing in every building or premises served by the PSA waterworks system as frequently as may be necessary to ensure that

such plumbing has been installed and is maintained in a manner as to prevent the possibility of pollution or contamination of the public water supply. The designated agent of the PSA, or the designated agent of the PSA, shall notify, or cause to be notified in writing, the owner, occupant or authorized agent of the owner of any such building or premises to correct, within a reasonable time set by the designated agent, any plumbing installed or existing contrary to or in violation of this division and which may create the risk of pollution to the county water supply or otherwise adversely affect the public health.

Inspection to be at reasonable hour; warrant to enable inspection; termination of service to uninspected premises.

- (a) The designated agent shall inspect all premises or buildings during reasonable hours and under such circumstances as to minimize the inconvenience to the owner or occupants of the premises or their agents. Should any owner, occupant or agent refuse to allow the designated agent access to the premises for the purposes of conducting an inspection, or should the designated agent not be able to contact the owner, occupant or agent for the purposes of obtaining permission to inspect, the designated agent shall have the right to apply immediately to a magistrate or other judicial officer for a proper warrant to carry out the necessary inspection. The provisions of this section shall apply to all initial inspections and to such follow-up inspections as may be necessary.
- (b) In addition to the warrant procedure set forth in subsection (a) of this section, the designated agent may commence administrative proceedings to discontinue water service to the uninspected premises. Except in emergency cases involving the imminent risk of pollution of the county water supply, the designated agent shall give ten days' written notice to the owner or occupant of the affected premises, or to a responsible agent, of the designated agent's intention to terminate the water service. The designated agent shall afford to the owner, occupant or agent a hearing on the questions of whether water service shall be terminated. This hearing shall be scheduled and conducted in such a manner that, to the maximum extent feasible, the inconvenience and burden on the owner, occupant or agent shall be minimized. The hearing shall take place before the designated agent or a designated principal assistant. The designated agent shall not

terminate the water service to the premise in question if it is found as a fact that:

- (1) The owner, occupant or agent has presented clear, convincing and credible evidence that there are no cross connection hazards within the subject premises; and
- (2) No purpose of this division would be served by conduction an on-site inspection of the premises.

In all cases, the hearing provided by this subsection shall be scheduled within the ten-day period immediately following the giving of written notice to the owner, occupant or agent. Upon a showing of good cause, the designated agent may grant a reasonable continuance of the hearing so scheduled but the designated agent, nevertheless, shall retain the right to terminate the water service at the expiration of the ten-day period if, in his discretion, public health considerations require such action. The designated agent shall, in all cases, render his decision immediately after the taking of all evidence at the hearing, or as soon thereafter as may be practicable, but in no case later than 24 hours following the termination of the taking of evidence. The designated agent shall cause his finding of fact and disposition of the case to be reduced to writing, and shall preserve the same for a period of one year.

- (3) In emergency circumstances where the designated agent has reasonable cause to believe that a cross connection hazard exists in the subject premises and that such hazard jeopardizes the integrity or the purity of the county water supply, he shall forthwith terminate the water service to the subject premises. The designated agent shall thereafter immediately afford the owner, occupant or agent the notice and opportunity to be heard pursuant to the procedures set forth in subsection (b) of this section. In all cases where the designated agent shall summarily terminate water service, as provided under this subsection, the designated agent shall act with dispatch in notifying the owner, occupant or agent, and shall exercise the utmost diligence in scheduling a prompt hearing on the matter.
- (4) Notwithstanding the provisions of subsections (a) and (b) of this section, the designated agent shall not terminate any water service in cases where the designated agent has reliable information from any sources indicating that cross connection hazards do not exist on the premises to which access for inspection cannot be gained.

Required hazard and backflow prevention devices generally.

- (a) The cross connection hazard and backflow prevention devices required shall be as set forth in the chart following subsection (b) of this section.
- (b) When investigation discloses that unusual or extraordinary hazards require more stringent means of protection, the designated agent shall have the authority to require the installation of the same. The designated agent shall in all cases specify the facts constituting the greater hazard found to require more stringent protective measures. The more stringent protective measures shall be related to such unusual or extraordinary hazards and shall be no more burdensome than is reasonable necessary to alleviate or guard against such hazards. The designated agent shall specify in writing to the owner the manner in which the more stringent protective measures alleviate or guard against the unusual or extraordinary hazards.

General prohibition against cross connections.

Cross connection between approved potable community or noncommunity water systems with other unapproved systems or equipment containing water or other substances of unknown or questionable safety are prohibited, except when and where, as approved by the designated agent, protective devices such as the reduced pressure zone backflow preventer or its equivalent are installed, maintained and tested to ensure proper operation on a continuing basis. The designated agent of the PSA may deny or discontinue the water service to a consumer if the required backflow-prevention device is not installed. If it is found that the device (s) has been removed or bypassed or if a cross-connection exists on the premises, or if the pressure in the waterworks is lowered below ten (10) pounds per square inch gauge, the designated agent shall take positive action to insure that the waterworks is adequately protected at all times. Water service to such premises shall not be restored until the deficiencies have been corrected or eliminated in accordance with the Commonwealth of Virginia Waterworks Regulations and to the satisfaction of the designated agent.

Standards for backflow prevention devices.

- (a) Devices for the prevention of backflow shall be tested and certified to meet the standards of the agencies listed as follows:
- (b) American Society of Sanitary Engineers.

- (c) American Water Works Association.
- (d) American National Standards Institute.
- (e) University of Southern California Foundation for Cross-Connection Control.
- (f) Department of Health, Education and Welfare list of accepted equipment for interstate carriers.
- (g) In addition, all backflow prevention devices shall be approved by the state department of health. A list of approved devices shall be kept on file in the office of the designated agent of public works.

Submission of plans prior to construction of certain facilities.

Certified plans for the following types of facilities shall be submitted in duplicate to the designated agent prior to construction:

- (1) Hospitals, mortuaries, clinics, nursing homes.
- (2) Laboratories.
- (3) Piers, docks, waterfront facilities.
- (4) Sewage treatment plants, sewage pumping stations or stormwater pumping station.
- (5) Food and beverage processing plants.
- (6) Chemical plants and dyeing plants.
- (7) Metal plating industries.
- (8) Petroleum processing or storage plants.
- (9) Radioactive materials processing plants or nuclear reactors.
- (10) Car Washes.
- (11) Lawn sprinkler systems and irrigation systems.
- (12) Fire service systems.
- (13) Farms, where the water is used for other than household purposes.
- (14) Others specified by the designated agent, when reasonable cause can be shown for a potential backflow or cross connection hazard.

Location and installation requirements for protective devices.

- (a) Backflow prevention devices shall be accessibly located, preferably in the same form with the fixture they serve. In all cases, installation shall be in accordance with the manufacturer's recommendations.
- (b) Atmospheric vacuum breakers shall be installed with the critical level at least six inches above the flood-level rim of the fixture they serve and on the discharge side of the last control valve to the fixture.

- (c) Pressure vacuum breakers shall be installed with the critical level at least 12 inches above the flood-level rim of the fixture they serve.
- (d) Reduced pressure principle backflow preventers and double check valve assemblies shall be installed a minimum of 12 inches above existing ground level in an easily accessible location for testing and maintenance.

General procedure for maintenance of program.

In order to maintain a program of cross connection and backflow prevention control consistent with this division, the designated agent of public works shall perform the following acts:

- (1) Initially, a checklist specifying potential hazards shall be sent to each resident served by the county water systems for their review and completion. The completed form shall be returned to the designated agent of public works' office.
- (2) The designated agent of public works shall review the completed form and require the installation of proper backflow prevention devices where needed in accordance with this division or with regulations of the state department of health.
- (3) Subsections (1) and (2) of this section shall be repeated for each new water customer and shall be repeated for existing water customers at least once every three years.

Notice of violation of division; failure to correct violation.

The designated agent of the PSA shall notify the owner or authorized agent of the owner of the building or premises in which there is found a violation of this division, apprising such person of the facts of such violation. The designated agent shall set a reasonable time for the owner to have such violation removed or corrected. Upon failure of the owner to have the violation corrected by the end of the specified time interval, the designated agent may, if in the designated agent's judgment a health hazard exists, cause the water service to the building or premises to be terminated.

Cross Connections, Hazards and Recommended Minimum Types of Prevention Devices

			Degree of Hazard			Required Minimum Device				
Type of Connection			Severe	Moderate	Minor	Air Gap ¹	For Backflow		For Backsiphonage	
						Reduced Pressure Device ²	Double Check Valve Assembly	Pressure Vacuum Breaker	Atmosphere Vacuum Breaker	
I.	Direct water connection subject to back pressure from:									
	A.	Pumps, tanks & lines handling:								
		1 Toxic substance*	X			X				
		2 Nontoxic substance**		X			X	X		
	B.	Water connection to steam & steam boilers								
		1. Boiler or steam connection to toxic substances*	X			X				
		2 Boiler or steam connection to nontoxic substances (boiler blowoff through approved gap)**		X		X	X	X		
II.	Inlet water connection not subject to backpressure:									
	A.	Sewer connected line waste	X			X				
	B.	Inlets to receptacles containing toxic substances*	X			X	X		X	X
	C.	Inlets to receptacles containing nontoxic substances**		X		X	X	X	X	X
	D.	Inlets into domestic water tanks			X	Each case should be treated separately				
	E.	Coils or jackets used at heat								

		exchanges in compressors, degreasers, etc.								
		1. In sewer lines	X			X	X			
		2. In lines carrying toxic substances*	X			X	X			
		3. In lines carrying non-toxic substances**		X		Each case should be treated separately				
	F.	Flush valve toilets	X			X	X			X
	G.	Toilet & urinal tanks		X		X				X
	H.	Trough urinals		X		X				X
	I.	Valved outlets or fixtures with hose attachments that may constitute a cross-connection to:								
		1. Toxic substances*	X			X	X		X	X
		2. Nontoxic substances**		X		X	X	X	X	X
	J.	Recirculating water in cooling towers	X	X	X	X				
	K.	Makeup tanks for sewage & process water	X			X				
III.	Containment									
	A.	Hospitals	X			X	X			
	B.	Mortuaries	X			Each case should be treated separately				
	C.	Clinics	X			X	X			
	D.	Nursing homes	X			X	X			
	E.	Laboratories	X			X	X			
	F.	Piers, docks, waterfront facilities	X			X	X			
	G.	Sewage pumping stations with water-cooled pumps	X			X	X			
	H.	Sewage pumping stations, hose bibs, stormwater pumping station	X	X	X	Each case should be treated separately				
	I.	Food & beverage processing plants:								
		1. Subject to backpressure	X	X	X	X	X			
		2. Not subject to backpressure	X	X	X	X	X	X		
	J.	Chemical plants, dyeing plants:								
		1. Toxic*	X			X				
		2. Nontoxic**		X	X		X	X		

K.	Metal plating industries	X			X				
L.	Petroleum processing or storage plants	X			X				
M.	Radioactive materials processing plants or nuclear reactors	X			X				
N.	Car washes		X		X	X			
O.	Lawn sprinkler systems, irrigation systems	X	X	X	X	X		X	
P.	Fire service	See section 6.04.07 of the Commonwealth of Virginia Waterworks Regulations							
Q.	Slaughterhouse & poultry processing	X	X		X	X			
R.	Farms	X	X	X	Each case should be treated separately				
S.	Auxiliary sources (nonapproved)	X	X	X	Each case should be treated separately				

¹ For backflow or backsiphonage.

² This device must be in an aboveground location and provisions made to prevent freezing.

* Health hazard. Hazard which presents danger to health and well-being of water consumer.

**Pollution hazard. Hazard from aesthetically objectionable or degrading material.

Records

All cross connection control program records are to be kept and maintained by the designated agent of public works for a period of ten years after their effective date.

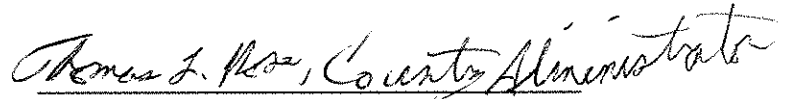
Criminal and civil penalties.

1. Any owner or customer who willfully or knowingly violates any provision of this Ordinance shall be guilty of a Class 2 Misdemeanor, punishable by a sentence of no more than 6 months in jail, or a fine of no more than \$1,000.00 or both such sentence and fine.
2. Any owner or customer who willfully or knowingly permits a violation of this Ordinance to remain uncorrected after the expiration of a period of time set by the Public Service Authority for the correction of such violation shall be guilty of a Class 2 Misdemeanor.
3. The foregoing criminal penalties shall be in addition to civil liability otherwise existing for damage caused to the County's water system by a violation of this Ordinance, or to any criminal or civil penalties,

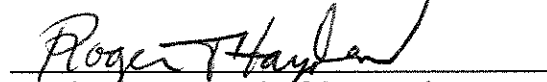
injunctions, or charges imposed under Section 32.1-27 of the Code of Virginia, 1950, as amended.

This Policy Rules and Regulations shall be effective immediately.

Adopted this the 14th day of March, 2011.



Thomas L. Rose, County Administrator



Chairman, Board of Supervisors
Of the County of Patrick, VA