Ordinance No. 94-12

AN ORDINANCE ADOPTING A CROSS CONNECTION CONTROL PROGRAM FOR ALL WATER SYSTEMS OWNED AND OPERATED BY MASON COUNTY

WHEREAS, WAC 246-290-490 Establishes cross connection control regulations;

WHEREAS, Purveyors (in this case Mason County) have the responsibility to protect public water systems from contamination due to cross connections. Cross connections which can be eliminated shall be eliminated;

WHEREAS, Mason County shall develop and implement a cross connection control program acceptable to the State Department of Health;

WHEREAS, this ordinance replaces ordinance no. 21-03 and which limits the existing cross connection program to the Beards Cove Water System and ordinance no. 128-98 which references Hartstene Pointe and is in the Mason County Code under chapter 13.19;

WHEREAS, this ordinance will replace those that are currently found in the County Code in chapter 13.19;

WHEREAS, The Board of County Commissioners held a public hearing on December 4, 2012 to consider the recommendations of the Department of Public Works and Utilities to change the coverage of the cross connection program from Beards Cove and Hartstene Pointe to all public water systems owned and operated by the Mason County;

WHEREAS, this hearing was advertised in the legal newspaper for Mason County;

NOW THEREFORE IT BE ORDAINED that the Board of County Commissioners of Mason County hereby adopts the cross connection control program for all public water systems owned and operated by Mason County.

This ordinance shall be in full force effective on this date

DATED this 4th day of December, 2012

BOARD OF COUNTY COMMISSIONERS
MASON COUNTY, WASHINGTON

Lynda Ring Erickson
LYNDA RING ERICKSON, Chair

Tim Sheldon
TIM SHELDON, Commissioner

Terri Jeffreys
TERRI JEFFREYS, Commissioner

ATTEST

Shannon Goudy
SHANNON GOUDY,
Clerk of the Board

APPROVED AS TO FORM

TIM WHITEHEAD,
Ch. Deputy Prosecuting Attorney

MASON COUNTY DRINKING WATER SYSTEMS

Cross-Connection Control Ordinance

PURPOSE

The purpose of a Cross Connection Control Program is to protect the health of water consumers and the potability of the water system. This program is designed to maintain the quality of Mason County public water supplies by the elimination and prevention of cross connections between the distribution system and other sources of water or liquids used for other purposes. The policies and procedures presented in this program are designed in compliance with WAC 246-290-490

GENERAL

Except where specifically designated herein, all words used in this program shall carry their customary meanings. Words used in the present tense shall include the future, and all plural words shall include the singular. The word "shall" indicates a mandatory action, and the word "may" denotes a use of discretion in making a decision.

DEFINITIONS

Air Gap Separation (AG): Shall mean the unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet supplying water to a tank, plumbing fixture, or other assembly, and the maximum flood level rim of the receptacle. This gap shall be at least double the diameter of the supply pipe measure vertically above the flood rim of the vessel. In no case shall this gap be less than 1 inch.

Approved Backflow Prevention Assembly: Shall mean any assembly to prevent backflow that has been approved for use by the System Manager and DOH. Approved assemblies shall be those that have successfully passed performance tests of the University of Southern California Engineering Center or another approved testing laboratory.

Atmospheric Vacuum Breaker (AVB): Shall mean a backflow prevention assembly which is operated by atmospheric pressure in combination with the force of gravity. The unit is so designed to work on a vertical plane only. The moving part consists of a poppet valve, which must be carefully sized to slide in a guided chamber and effectively shut off the reverse flow of water when a negative pressure exists in the supple system. An AVB is designed to protect against back siphonage events only.

Auxiliary Supply: Shall mean any water supply on or available to the premises other than the County public water supply/

Backflow: Shall mean the flow, other than in the intended direction of flow, of any foreign liquids, gasses or other substances (including water) into the distribution system of the public water supply.

Backflow Assembly Tester: Shall be a person certified by Washington State in the inspection and testing of approved backflow prevention devices.

Back Pressure: Shall mean any induced pressure caused by a pump, elevated tank, boiler, pressure vessel, or any other means that could create pressure within a customer's system greater than the operating pressure of the public water supply distribution system.

Back Siphonage: Shall mean backflow of water due to a negative or reduced pressure within the water system.

Building Inspector: Shall be a Building Inspector of Mason County.

County Inspector: Shall be that person or persons employed by the County that have been trained and are qualified to perform the designated inspection work.

Cross Connection: Shall mean any actual or potential connection whereby w public water supply is connected directly or indirectly, with any other water supply system, sewer, drain, conduit, pool, storage reservoir, plumbing fixture or other assembly which contains, or may contain, contaminated water, sewage or other waste or liquid of unknown or unsafe quality, which may be capable of imparting contamination to the public water supply system as a result of backflow (reversed flow).

Customer: Shall mean any person, persons, firm or corporation that is furnished potable water from the public water supply system through a legal service connection to the public water supply distribution system.

Double Check Detector Assembly (DCDA): Shall mean an assembly composed of two (2) single, independently acting, approved check valves, including resilient seated shut-off valves located at each end of the assembly and properly located tests cocks to test the water tightness of each check valve. Double check valve assemblies are designed to protect the water supply system from both back siphonage and back pressure events. They are not suitable for use in protecting the water system from health threatening substances.

Hazards:

> **Degree:** Shall express the results of an evaluation of a health, system, or plumbing hazard.
>
> **Health:** Shall mean any condition, assembly, or practice in a water supply system and/or its operation that creates, or may create, a danger to the health and well-being of a customer.

Plumbing: Shall mean a potential or existing cross connection in a customer's water system that may permit back siphonage in the event of a negative or reduced pressure in the supply line.

System: Shall mean a threat to the physical properties of the public or the customers potable water system by a material not dangerous to health, but aesthetically objectionable and having a degrading effect on the quality of the potable water within the system.

Industrial Fluids: Shall mean any fluid or solution which may be chemically, biologically, or otherwise contaminated or polluted in a form or concentration that would constitute a health or plumbing hazard if introduced into a potable water supply. This may include, but is not limited to, all types of processed waters originating from the public water or auxiliary supply, which may deteriorate in sanitary quality. Types processed waters include chemicals in fluid form, circulated cooling waters that are chemically or biologically treated or stabilized with toxic substance, and contaminated natural waters, as from springs, stream, or ponds.

Liquids: Shall mean any substance that flows readily but does not expand indefinitely, such as water and industrial fluids.

Mason County DCD: Shall also be referred to and the County, herein.

Pressure Vacuum Breaker Assembly (PVBA): Shall mean a backflow prevention assembly which consists of a spring-loaded check valve, an independently operating air-inlet valve, inlet and discharge shut-off valves, and properly installed test cocks. The air-inlet valve is internally loaded to the open position, normally by means of a spring. This internally loading allows the device to be installed on the pressure side of the shut-off valve. A PVBA is designed to protect against back siphonage events only.

Public Health Officer: Shall be the duly appointed Public Health Officer of the Southwest Washington Health District. Any act in this program required or authorized by the public Health Officer may be done on his/her behalf by an authorized representative of DOH.

Public Water Supply: Shall be the system operated and maintained by the County, which is a water supply intended or used for human consumption or other domestic use. The public water supply system included source, storage, transmission and distribution facilities where water is furnished by the County to the customers of the County.

Reduced Pressure Principal Backflow Prevention Assembly (RPBA): Shall mean an assembly containing a minimum of two (2) independently acting, approved check valves, together with an automatically operated pressure differential relief valve located between the two check valves. During normal flow the pressure between these two checks shall be less than the upstream (supply) pressure. In case of a leakage of either check valve, the differential valve, by discharging to the atmosphere, shall operate to maintain not less than two psi of pressure between the supply pressure and the zone between the two check valves. The unit must

include resilient seated shut-off valves located at each end of the assembly, and each assembly shall be fitted with properly located test cocks.

Service Connection: Shall mean a connection between the public water supply distribution system and the customers system.

System Manager: Shall mean the Water System Manager, Mason County, Washington. Any act in this program required or authorized by the System Manager may be done on his/her behalf by the authorized representative of Mason County.

CODE AUTORITY AND ENFORCEMENT

The enforcement of this Cross Connection Program, in the area served by the Mason County Owned and Operated Drinking Systems, shall be in accordance with the Uniform Plumbing Code, latest Edition, and WAC 246-290, Rules and Regulations of the State Board of Health relating to public water supplies.

GENERAL POLICY

It is the intention of this program to provide for the permanent abatement or control of all cross connections. Where it is physically and economically infeasible to find or to permanently eliminate all cross connection of the customers water systems, and when it is deemed necessary by the appropriate inspector, there shall be installed at the service connection a suitable backflow prevention assembly commensurate with the degree of hazard to the public water supply.

The following methods of cross connection control are considered minimum protection at the service connection.

1. The public water supply to a premises having auxiliary water supply from an additional public supply with no known cross connection shall require an approved DCVA at the service connection.
2. The public water supply to a premises on which is handled a substance that is objectionable (not a health hazard) in a manner constituting a potential cross connection shall require a DCVA at the service connection.
3. The public water supply to a premises on which there is an auxiliary water supply and internal cross connections that are not correctable or intricate plumbing arrangements which make it impractical to ascertain whether or not cross connection exist, shall require a RPBA at the service connection.
4. The public water supply to a premises on which material dangerous to health or toxic substances are handled shall have installed a RPBA at the service connection.
5. The public water supply to a premises where entry is restricted so that inspection for cross connection cannot be made at a sufficient frequency or sufficient short notice to assure that cross connection do not exist shall have installed a ROBA at the service connection.

6. The public water supply to a premises on which any substance is handled under pressure so as to permit entry into the public water supply, or where a cross connection could reasonably be expected to occur, shall have installed a RPBA or DCVA, according to the health hazard at the service connection.
7. The public water supply to a premises having a repeated history of cross connections being established or re-established, shall have installed a RPBA at the service connection.

SURVEILLANCE PROGRAM

The County is charged with the responsibility of ensuring that the public water supply is not compromised by events resulting from cross connections. As such, a Surveillance Program based on proper management, adequate record keeping, and aggressive inspections must be properly implemented by the County.

Such a program for cross connections initially requires the inspection of all new and existing buildings, structures, and grounds. The procedure requires the County Inspector(s) and the Building Inspector(s) to assist with the requirements of DOH. Each must be knowledgeable in the field of plumbing and building inspection, pipe arrangements, and cross connection control.

The systematic program of inspection shall be established with priority given on the basis of risk to public health and shall be conducted according to the following outline:

A. New and Proposed Construction
    1. Upon application for a building permit, the Building Inspector shall require a detailed set of plans and specifications for the plumbing installations, and shall make such detailed plans and specifications available to the County Inspector.
    2. The Building Inspector and the County Inspector shall review these plans and specifications to determine the probability of cross connections, the availability of the auxiliary water supplies, the handling of substances which, if introduced into the water system, would constitute a health, plumbing, or system hazard. If, upon review, it is determined that any of these conditions will exist, the County Inspector shall coordinate with the property owner to ensure such cross connections are properly controlled, or eliminated.
    3. During the construction phase of any new building, structure, or ground installations, and during the regular plumbing inspections, the County Inspector shall perform the required cross connection control inspection. Upon completion of the inspection, but prior to the approval of any water service connection, the County Inspector shall advise the customer in writing that further backflow preventing testing is, or is not required. The customer shall also be notified that Washington State certified backflow assembly tester must test the backflow assembly, and that the test report form completed by the certified tester must be received by the County Inspector prior to the regular use of the customer's water system.

4. Upon receipt of an application for new water service, but prior to the installation of such new service, a cross connection inspection shall be made by the County Inspector and required backflow prevention assemblies shall be installed at the time the new service is installed.

B. Existing Buildings, structures, and Grounds
   1. An initial survey of the water system customers shall be conducted by the County to determine if any cross connections currently exist. The initial cross connection determination shall proceed according to the following steps:
      a) A survey form shall be sent to each customer explaining the program and stressing the relationship between the cross connections and water-borne disease epidemics, types of health hazards, and cross connections. The survey shall also include a brief questionnaire with desired information, such as a auxiliary water supply, any chemicals used, and certain types of fixtures installed. This survey shall be returned by the water system customer to the County.
      b) Based upon the responses received from the questionnaire, if the County determines that a customer has a potential cross connection, a letter requesting an appointment for inspection by the County Inspector shall be sent to the waters system customer.
      c) Upon completion of the inspection, the County Inspector shall orally brief the customer or his/her representative of the inspection findings.
      d) The County Inspector shall prepare a written report for the water system customer and the System Manager that shall include the following information:
         1. Complete identifying information contained in heading.
         2. List of all potential or actual cross connections found, including the location and options for method of control for each.
         3. List of any industrial fluids, chemicals or other contamination liquids used or pumped under pressure, the use of each, and an indication of the probability of cross connection.
         4. Any applicable drawings, sketches, blueprints, etc. used in support of the inspection.
         5. A summary of the findings of the inspection.
         6. Recommendations for actions to be taken by the customer.
      e) The System Manager, upon completion of review of the report, shall prepare a letter to the customer outlining the corrective action required, and the time period in which the corrective action must be completed. A copy of this letter shall be send to the customer (return receipt requested), and a copy shall be maintained at the County.
      f) When all required actions have been completed, the file copy of the completed actions shall be placed in the County's cross connection control file.
      g) Each premises required to be in compliance with the program shall be re-inspected annually, or more often if the degree of hazard so indicates.
   2. The backflow prevention devices at the wastewater treatment plant and the Community Center shall be inspected and tested annually by certified backflow assembly tester.

CORRECTIVE MEASURES

Corrective measures for cross connections shall follow the guidelines in the most recently published *Accepted Procedure and Practice in Cross Connection Control* of the Pacific Northwest Section (PNWS) of the AWWA.

CODE

The following are the abbreviations for assembles or methods used to prevent of eliminate cross connections:

1.	Air Gap	AG
2.	Reduced Pressure Backflow Assembly	RPBA
3.	Double Check Valve Assembly	DCVA
4.	Double Check Detector Assembly	DCDA
5.	Pressure Vacuum Breaker Assembly	PVBA
6.	Atmospheric Vacuum Breaker	AVB

PROCEDURES FOR INSTALLATION, INSPECTION, AND MAINTENANCE OF BACKFLOW-PREVENTION ASSEMBLIES

A. Initial Installation
   1) When it is determined that a RPBA, DCVA, DCDA, PVBA, or AVB is required, the County shall inform the owner/manager of the need for a device.
   2) Approved assemblies shall be installed as specified in the Uniform Plumbing Code, the PNWS-AWWA Cross Connection Control Manual, or the Mason County Owner and Operated Drinking Systems Design Standards, whichever is the more restrictive.
   3) Upon completion of the installation of the backflow assembly, a certified backflow assembly tester shall make such tests as are required to ensure proper operation of the assembly. If the assembly fails any portion of the test, the assembly shall be rejected until such time that a repaired or a replaced assembly passes all portions of the tests. The test results shall then be supplied in the County.

B. Inspection and Maintenance
   1) All backflow prevention assemblies shall be tested not less that annually. The testing shall be made by a certified backflow prevention assembly tester, and the results are to the forwarded to the County.
   2) Maintenance
      a) When a backflow prevention assembly is determined to be defective, the tester shall notify the County immediately.
      b) Upon receipt of notification of the defective assembly, the customer shall take the necessary steps to repair or replace the defective assembly. The defective assembly shall be repaired or replaced by the qualified person, who has specific training in backflow prevention assembly repair.
      c) Upon completion of repair or replacement, the backflow prevention assembly shall be tested by a certified backflow prevention assembly tester.

RECORDS AND REPORTS

The following information shall be available through the County's record keeping program.

1. Information regarding installations.
2. Test results for installations.
3. Information about testers.
4. Tester's certifications histories.
5. Mailing addresses of installation owners.
6. Device manufacturers and model and approved status.

MASON COUNTY

DRINKING WATER SYSTEMS

In order to protect the public potable water supply from possible contamination or pollution due to backflow from a customer's private internal system, Mason County has established a Cross Connection Control Program. The County recognizes that there are varying degrees of risks associated with different types of uses and will consider this when determining if a cross connection exists and what, if any backflow prevention device will be required.

Please complete the following survey and return it to _____

Name_____

Address_____

Phone Number_____Alt. Phone Number_____

1. Please indicate if your home has or will have any of the following fixtures, equipment, or areas on site:

	Yes	No
Fire sprinkler system	___	___
Irrigation system	___	___
Air conditioning system	___	___
Bathtub, below rim filter	___	___
Bidets	___	___
Boiler feed lines	___	___
Decorative ponds	___	___
Dialysis Equipment	___	___
Floor Drains	___	___
Flushing floor drains	___	___
Heat exchangers	___	___

Heat pumps	___	___
Hose Bibbs	___	___
Hot tub	___	___
Sumps	___	___
Photo developing sinks	___	___
Sewer connected equipment	___	___

2. Please provide the following information on any existing backflow protection that you are aware of:

Existing Cross Connection Protection

Hazard/Location	Assembly Type	Make	Model	Serial No.	Testing Information

3. Please provide the name of any products or chemicals that you mix with water for use in your home, such as fertilizers, etc.

_____

Thank you for your attention to this matter. Please call _____at _____ if you have any questions or concerns.