Heceta Water People's Utility District
Ordinance 2019-01
Backflow Prevention and Cross-Connection Control Standards

Pursuant to Oregon Administrative Rules Chapter 333, Division 61 (333-061-0070 and 333-061-0071), it is the responsibility of the Heceta Water People's Utility District (HWPUD) to protect its drinking water by implementing and enforcing a cross connection and backflow prevention program.

Part 1

1.0 Definitions:

Cross Connection: Any physical arrangement where a public water system is connected, directly or indirectly (actual or potential), with any other non-drinkable water system, used water system or auxiliary supply, sewer, drain conduit, swimming pool, storage reservoir, plumbing fixture, swamp coolers, air conditioner units, fire protection system, or any other assembly which contains or may contain contaminated water, sewage or other liquid of unknown or unsafe quality which may be capable of impairing contamination to the public water system as a result of backflow. Bypass arrangements, jumper connections, removable sections, swivel or change-over assemblies, or other temporary or permanent assemblies through which or because of which backflow may occur are considered to be cross connections.

Backflow: The flow of water or other liquids, gases or solids from any source back into the distribution piping of the public potable water supply system.

Air Gap: The vertical physical separation between the free flowing discharge end of a potable water supply line and the overflow rim of the receiving vessel. The separation must be at least twice the inside diameter of the supply line, but never less than one inch. When located near walls, the air gap separation must be increased.

Atmospheric Vacuum Breaker: A devise which contains a float check (poppet), a check seat and an air inlet vent. When water pressure is reduced to a gauge pressure of zero or below, air enters the device, preventing backsiphonage. It is designed to protect against only low hazard cross connection.

Auxiliary Water Supply: Any water supply on, or available to the premises other than the public potable water supply.

Backflow Prevention Assembly: A backflow prevention assembly, such as a pressure vacuum breaker, a double check valve, or a reduced pressure principle assembly, plus the attached

resilient seated shut-off valves on the inlet and outlet ends of the assembly, and the appropriate test cocks for testing the assembly.

Backpressure: Water pressure which exceeds the operating pressure of the public potable water supply.

Backsiphonage: Backflow due to a negative or reduced pressure within the public potable water supply.

Boresight to Daylight. Providing adequate drainage for backflow prevention assemblies installed in vaults through the use of an unobstructed drain pipe.

Certified Backflow Assembly Tester: A person who is certified by the health authority, or other approval agency, to test backflow prevention assemblies.

Certified Cross Connection Control Specialist/Inspector: A person certified by the health authority, or other approval agency, to administer a cross connection control program and conduct cross connection surveys.

Confined Space: A space that:

1) Is large enough and so configured that an employee can bodily enter and perform assigned work; and
2) Has limited or restricted means for entry or exit. (i.e. tanks, vessels, silos, storage bins, hoppers, vaults, reservoirs and pits)
3) Is not designed for continuous employee occupancy.

Contamination: Impairment of the quality of the potable water by any physical, chemical, biological, or radiological substance that would present an unreasonable risk to health. Also defined as high hazard.

Degree of Hazard: The low or high hazard classification that shall be attached to all actual or potential cross connections.

Double Check Detector Assembly (DCDA): An approved assembly consisting of two approved double check valve assemblies set in parallel, with a meter on the bypass line to detect small amounts of water leakage or use. This unit must be purchased as a complete assembly. The assembly may be allowed on fire line water services in place of an approved double check valve assembly upon approval by the local authority.

Double Check Valve Assembly (DCVA): An approved assembly consisting of two independently operating check valves, loaded to the closed position by springs or weights, and installed as a

unit with, and between, two resistant seated shut-off valves and having suitable connections for testing.

Health Authority: The appropriate state or provincial departments or districts of public health or, in some cases, a local agency having jurisdiction.

Health Hazard: An actual or potential threat of contamination of a physical or toxic nature to the public potable water system or the consumer's potable water system that would be a danger to health.

High Hazard: A condition, device, or practice which is conducive to the introduction of waterborne disease organisms, or harmful chemical physical, or radioactive substances into a public water system and which presents an unreasonable risk to health.

Low Hazard: A hazard which could cause aesthetic problems or have a detrimental effect of the quality of the public potable water supply.

Point-of-Use-Isolation: The appropriate backflow prevention within the consumer's water system at the point at which the actual or potential cross connection exists.

Pollution: An impairment of the quality of the public potable water supply which does not create a hazard to the public health, but which does adversely affect the aesthetic qualities of such potable water for domestic use. It is also referred to as low hazard or non-health hazard.

Potable Water: Water which is safe for human consumption, free from harmful or objectionable materials, as described by the health authority.

Premise Isolation: The practice of protecting the public potable water supply by installing backflow prevention assemblies at or near the point where water enters the premises. This type of protection does not provide protection to personnel on the premises.

Pressure Vacuumed Breaker Assembly (PVBA): An approved assembly consisting of a spring-loaded check valve loaded in the closed position and an independently operating air inlet valve loaded to the open position and installed as a unit between two resilient seated shut-off valves and with suitable connections for testing. It is designed to protect against backsiphonage only.

Reduced Pressure Backflow Assembly (RPBA): An approved assembly consisting of two independently operating check valves, spring-loaded to the closed position, separated by a spring-loaded differential pressure relief valve loaded to the open position, and installed as a

unit with and between two resilient seated shut-off valves and having suitable connections for testing.

Service Connection: The point of delivery at which the water purveyor loses control of the water.

Thermal Expansion: The pressure created by heated water or fluid that is not given the room to expand.

Used Water: Any potable water which is no longer in the purveyor's distribution system. In most cases, the potable water has moved past (downstream of) the water meter.

Vacuum: Pressure below atmospheric pressure. The term vacuum includes all degrees of partial vacuums.

Water Purveyor: Any agency, subdivision of the state, municipal corporation, firm, company, mutual or cooperative association, institution, partnership, person or other entity that owns or operates a public potable water system. It also means the authorized agents of such entities as listed above.

2.0 Backflow Prevention Required:

2.1 An approved backflow prevention assembly shall be required at the service connection to a customer's water supply system when HWPUD determines that the potable water supplied by HWPUD may be subjected to contamination, pollution, or any other deteriorations of quality by conditions within the customer's water supply.

2.2 An approved backflow prevention assembly shall be required at the service connection when access to the premises is restricted such that a cross connection inspection cannot be performed or where intricate plumbing make it impractical to ascertain whether or not a cross connection exists.

2.3 An approved backflow prevention assembly shall be required at the service connection to any premises using a pump to draw water from an auxiliary water supply.

2.4 An approved backflow prevention assembly shall be required at the service connection to any premises where deemed by HWPUD to be necessary to accomplish the purpose of Oregon Administrative Rules (OAR) chapter 333, division 61 (333-061-0071 thru 333-061-0072).

3.0. Responsibilities:

3.1 Water customer: The water customer has the primary responsibility to keep pollutants and contaminants out of the public potable water supply system. This responsibility begins at the customer's service connection and includes any and all water distribution piping on the premises. If a cross connection or a potential for cross connection exists, the customer, at the customer's expense, shall install, test, and maintain approved back flow prevention assembly as required by the HWPUD. It is the responsibility of the water customer to prevent the creation of cross connection by modifications of the customer's plumbing system.

3.2 Water purveyor: The water purveyor has the responsibility to prevent contamination or pollution of public water supply system from backflow. This responsibility begins at the source and includes the entire water supply distribution system and ends at the customer service connection. The water purveyor shall not provide service to premises where an unprotected cross connection exists. The water purveyor has the responsibility for publishing and enforcing laws, rules, regulations, and policies necessary to carry out this responsibility.

3.3 Health Agency: The health agency has the responsibility for publishing and enforcing laws, rules, regulations, and policies to be followed in controlling cross connections. The health agency has the responsibility to ensure that adequate backflow prevention programs by water utilities are maintained.

3.4 Plumbing Official: The plumbing official has the responsibility for the enforcement of plumbing regulations concerned with preventing cross connections. The plumbing official has explicit responsibility of preventing cross connections from being designed and built into structures within its jurisdiction. Where the review of building plans suggests or detects the potential for cross connections being made as an integral part of the plumbing system, the official has the responsibility for requiring that such cross connection practices be either eliminated or provided with an approved backflow prevention assembly. (OAR 333-061-0071)

3.5 Certified Tester: When directed to test backflow prevention assemblies, a certified tester will have the following responsibilities:

a. The tester shall be responsible for performing accurate field tests and making reports to the customer and HWPUD.

b. The tester shall be equipped with and be capable of using all the necessary tools, gauges, and other equipment necessary to properly test backflow prevention assemblies and follow all OAR 333-061-0072 rules.

3.6 Cross Connection Control Inspector: The following responsibilities shall be that of an individual appointed by HWPUD's General Manager to carry out the backflow prevention control program:

- **a.** Prepare a master list of facilities and premises which are subject to inspection and the hazard for each;
- **b.** Maintain a current list of cross connection control staff and responsibilities;
- **c.** Consult with and advise customers of regulations and potential consequences of cross connections; monitor implementation of alternatives or corrections;
- **d.** Maintain records for inspections performed and for assemblies installed within HWPUD's service area;
- **e.** Monitor annual testing of installed assemblies and work with certified testers and customers to insure compliance with testing requirements of OAR 333-061-0070.

4.0 Hazard Potential: The potential degree of hazard to the public potable water supply system from a customer's water supply system shall be determined by HWPUD using the following hazard factors:

4.1 Health: An actual or potential condition, devises, or practice which, in the judgment of HWPUD, may create an impairment of the quality of the water which creates an actual hazard to the public health by poisoning or spread of disease.

4.2 Plumbing: An actual or potential plumbing cross connection in a customer's water supply system that may be either a pollution or contamination type hazard.

4.3 Non-Health: An actual or potential condition, device, or practice which, in the judgment of HWPUD may create an impairment in the quality of the water to a degree which does not create a hazard to the public health but which does adversely and unreasonably affect the aesthetic qualities of the public potable water supply or could cause damage to the public water supply or anything related that might damage the public water supply.

4.4 System: An actual or potential condition, device, or practice which, in the judgment of HWPUD, may create a threat of (a)danger to the physical properties of the public potable water supply system and of the customer's water supply system or (b)pollution or contamination which would have a protracted effect on the quality of the potable water in the system.

4.5 Determination: Based on OAR 333-061-0070(9), Table 42 has been established as follows:

High Hazard Table (Premises Requiring Isolation by an Approved Air Gap or a Reduced Pressure Principle Type of Assembly Health Hazard)
Agricultural (for example, farms, dairies)
Beverage bottling plants
Car washes
Chemical plants
Commercial laundries and dry cleaners
Premises where both reclaimed and potable water are used
Film processing plants
Food processing plants
Medical centers (for example: hospitals, medical clinics, nursing homes, veterinary clinics, dental clinics, blood plasma center)
Premises with irrigation systems that use the water supplier's water with chemical additions (for example: parks, playgrounds, golf courses, cemeteries, housing estates
Laboratories
Metal plating industries
Mortuaries
Petroleum processing or storage plants
Piers and docks
Radioactive material processing plants and nuclear reactors
Wastewater lift stations and pumping stations
Wastewater treatment plants
Premises with piping under pressure for conveying liquids other than potable water and the piping is installed in proximity to potable water piping
Premises with an auxiliary water supply that is connected to a potable water supply
Premises where the water supplier is denied access or restricted access for survey
Premises where the water is being treated by the addition of chemicals or other additives

This table will help HWPUD determine whether a RPBA will be required at a specific site.

5.0 Approved Backflow Prevention Assemblies; Methods: A backflow prevention assembly may be approved by HWPUD if at a minimum it has been issued a certificate of approval by the Foundation of Cross-Connection Control and Hydraulic Research of the University of Southern California or is on the list of approved assemblies accepted by the State of Oregon Health Division, Resources, and meets AWWA Standards C510-92 and C511-92. The following are recognized backflow prevention assemblies or methods, which HWPUD may require:

5.1 Air Gap: Requests for an Air Gap separation will be considered on a case by case basis and approval or disapproval by HWPUD shall be in writing.

5.2 Reduced Pressure Principle Assembly

5.3 Double Check Valve Assembly

5.4 Vacuum Breaker

6.0 Approved Backflow Prevention Assembly Installation Requirements: The customer shall install approved backflow prevention assemblies at the customer's expense and in compliance with the standards and specifications adopted by HWPUD.

6.1 Approved backflow prevention assemblies shall be installed at the service connection or as close as practicable to the service connection and in an accessible location. The assembly shall be installed prior to any branches in the customer's water supply system. The backflow prevention assembly shall have at least an equal diameter of the service connection.

6.2 Backflow prevention assemblies shall not be installed if the possibility that they may become submerged in water or installed in a location subject to flooding. When installation in a vault or basement is approved, adequate drainage shall be provided. Threaded plugs shall be installed in all test cocks.

6.3 When a backflow prevention assembly is installed in a vault or confined space, it shall be accessible and it shall be the customer's responsibility to provide safe and adequate access to the vault or confined space for the purpose of testing and maintenance of the assembly.

6.4 When a backflow prevention assembly is installed inside the customer's premises and is 5' above the floor, it shall be equipped with rigid, permanently installed scaffolding acceptable to HWPUD. The installation shall also meet the requirements set forth by the U.S. Occupational Safety and Health Administration and the State of Oregon Occupational Safety and Health codes.

6.5 A reduced pressure principle assembly shall be installed a minimum of 12" above grade. Where appropriate the customer may install a double check valve assembly below grade in a vault upon approval from the manufacturers' specifications.

6.6 When a customer requires a continuous water supply, the customer shall install two or more approved backflow prevention assemblies parallel to one another at the service connection.

6.7 Approval and final inspection of backflow prevention assembly installations shall be performed by HWPUD, prior to the assembly being put into service. The customer or representative shall call for an inspection by HWPUD.

6.8 Prior to backfill, all installations shall be inspected between the assembly and the service connection. Inspection shall be made by HWPUD within two (2) working days of notice to inspect.

IMPORTANT: Failure to notify the HWPUD prior to backfill will result in re-excavation of the assembly and point of connection, at the customer's expense, to facilitate inspection.

6.9 Final approval shall be granted following acceptance of the installation and a receipt of passing backflow assembly report.

NOTE: The installation of an approved backflow prevention assembly on the water service line will prevent the release of onsite pressure to the water supply system. Therefore, it is important that a temperature/pressure relief valve and/or thermal expansion tank be properly installed to relieve any excessive increase in onsite pressure due to hot water heating systems or other activities. HWPUD shall notify customers of this hazard and it shall be the customer's responsibility to install and maintain temperature/pressure relief valves or thermal expansion tanks within the premises' plumbing.

7.0 Plan Review Requirements:

7.1 All building or engineering plans submitted for approval shall be routed through HWPUD's General Manager or the Cross-Connection Control Specialist for backflow prevention approvals and requirements. Approved backflow prevention assemblies required by HWPUD or the Union Plumbing Code shall be shown and specified on all required building or engineering plans.

7.2 Approved backflow prevention assemblies required by HWPUD or Uniform Plumbing Code shall show the manufacturer model, and size of the assembly on the approved building or engineering plans. Final approval of installation and testing of approved backflow prevention assemblies is required.

7.3 Approved backflow prevention assemblies required on fire sprinkler systems constructed after the adoption of the ordinance shall be in accordance with the American Water Works Association (AWWA) Manual 14, Second Edition.

a. Class 1, 2 or Class 3 fire sprinkler system: Double Check Valve Assembly.

b. Class 4, 5 or Class 6 fire sprinkler system: would require a Reduced Pressure Principle Assembly.

8.0 Facility Inspections/Inspection of Use: Facility inspections shall be conducted by HWPUD to determine whether any cross-connection or other potential hazards exist and to determine compliance with this ordinance. This will be accomplished through questionnaires and on-site surveys. The customer's water supply system shall be available at all times during normal business hours for inspection by authorized personnel of HWPUD.

8.1 Customer assistance will help in facility inspections by filing out a questionnaire provided by HWPUD. The customer will have 30 days to return the questionnaire. The cross connection committee will decide if an on-site survey will need to be conducted.

8.2 If the customer does not return the first questionnaire, a second questionnaire will be sent, providing a 15 day window to return the completed questionnaire. If this questionnaire is not

returned, the cross connection coordinator will attempt to contact the customer by telephone to set up an appointment for an in-person survey by HWPUD.

8.3 In the event that the customer will not return the questionnaire nor allow HWPUD to do an on-site survey, the customer will be required to pay for the installation and maintenance of a Reduced-pressure Principle Backflow Assembly (RPBA) at their meter.

9.0 Testing and Maintenance of Backflow Assemblies: Testing of backflow prevention assemblies shall be performed by a certified tester. The costs of tests and maintenance required in the following paragraphs shall be covered by the customer.

9.1 Backflow prevention assemblies shall be tested upon installation, and annually thereafter. Test reports shall be prepared by the certified tester and copies of the reports shall be provided to the customer of the premises and to HWPUD within 10 days of the completed tests.

9.2 Any backflow prevention assembly which fails a periodic test shall be repaired or replaced. When water service has been terminated for non-compliance, the backflow prevention assembly shall be repaired or replaced prior to the resumption of water service. Backflow prevention assemblies shall be re-tested immediately after repair or replacement.

9.3 HWPUD may require backflow prevention assemblies to be tested at any time at the customer's expense in addition to the annual testing requirement as it shall be deemed necessary to verify test procedures and results.

9.4 If the customer refuses or does not comply with testing requirements, HWPUD shall have the necessary tests performed. All costs associated with testing shall be billed to the customer.

9.5 All repairs of backflow prevention assemblies shall be performed by certified plumber or home owner.

9.6 Any time fire services are discontinued for a period of time longer than necessary to test the assembly; the tester is required to notify the local fire official that the fire services are shut off for repair.

9.7 All certified testers performing tests on backflow prevention assemblies within the public water supplied by HWPUD shall provide HWPUD with a copy of the latest test gauge(s) being used by the tester.

10.0 Customer Non-compliance: The water service to any premises may be discontinued in the case of noncompliance with this ordinance. Non-compliance includes, but is not limited to, the following:

10.1 Refusal to allow HWPUD personnel reasonable access to the premises for the purpose of inspecting for cross-connection.

10.2 Removal of a backflow prevention assembly which has been required by HWPUD or bypassing of a backflow prevention assembly which has been required by HWPUD.

10.3 Providing inadequate backflow prevention when cross-connection exists.

10.4 Failure to install an approved backflow prevention assembly which has been required by HWPUD.

10.5 Failure to test and/or repair a backflow prevention assembly as required by the HWPUD.

10.6 Failure to comply with the requirements of this ordinance.

11.0 Certified Tester Non-Compliance: Non–compliance with any of the following by a Certified Tester shall be grounds for reporting the individual to the State of Oregon Health Division, Human Resources Department.

11.1 Improper testing or repair of backflow prevention assemblies.

11.2 Improper reporting of the results of testing of or of repairs made to backflow prevention assemblies.

11.3 Failure to meet certification requirements as required by the State of Oregon Health Division, Human Resources Department.

11.4 Related unethical practices.

12.0 Retroactive Application:

12.1 The provisions of the ordinance shall apply to all customers of the public potable water supplied by HWPUD. HWPUD shall perform inspections of customer's water supply systems to determine if actual or potential cross-connection exist and assess the degree of hazard to determine if an approved backflow prevention assembly is to be installed.

12.2 Backflow prevention assemblies installed before the effective date of these rules (2014) that were approved at the time of installation, but are not currently approved, shall be permitted to remain in service provided the assemblies are not moved, the piping systems are not significantly remodeled or modified, the assemblies are properly maintained, and they are commensurate with the degree of hazard they were installed to protect. The assemblies must be tested at least annually and perform satisfactorily to the testing procedures set forth in these rules. (OAR 333-061-0070(14))

12.3 A change in 'type of use' shall require HWPUD to conduct a new survey of use. If the survey determines an approved backflow prevention assembly is required, installation shall be completed by the customer before HWPUD may grant the change.

12.4 All customers existing prior to the date of passage of this ordinance shall comply with the standards set forth in this ordinance within a period of time as determined by HWPUD based upon the degree of hazard.

13.0 Enforcement: HWPUD shall cause the water service to a premise, to be immediately discontinued or denied by physical break in the service until the customer has corrected the condition in non-conformance with this ordinance in any of the following situations:

13.1 When it becomes known that a condition such as a cross-connection, plumbing, or sanitary hazard, or other violation of this ordinance is present.

13.2 In those cases of extreme emergency, and where an immediate threat to life or public health is found to exist.

13.3 When, in other cases and after a reasonable length of time has been allowed as determined by HWPUD, the tests, repairs, and or replacement of assemblies or any other requirement within this ordinance is not performed in accordance with this ordinance.

14.0 Costs of Compliance: All costs associated with purchase, installation, inspection, testing, replacement, maintenance, parts, and repairs of backflow prevention assemblies are the financial responsibility of the customer.

15.0 Variance: Any variance from the requirements of this ordinance shall be requested in writing by the customer of the premises affected and approved by the HWPUD General Manager and/or designee upon finding that the requested variance is consistent with the purpose of this ordinance and that the variance will provide the same protection to the potable water supply and public potable water supply system as the regulation for which the variance is sought. The decision of the HWPUD General Manager and/or designee may be appealed in writing to the Board of Directors of HWPUD whose decision shall be final.

16.0 Constitutionality and Saving Clause: If any provision, section, sentence, clause, or phrase of this ordinance or application of same to any person or set of circumstances is for any reason held to be unconstitutional, void, invalid, or for any reason unenforceable, the validity of the remaining portions of the ordinance or its application to other persons or circumstances shall not be affected thereby, it being the intent of HWPUD in adopting and approving this ordinance that no portion hereof or provision or regulation contained herein shall become inoperative or fail by reason of any unconstitutionality or invalidity of any other portion, provision, or regulation.

Approved by the Board of Directors on February 19, 2019.

Approved and adopted by the Board of Directors on April 16, 2019.