

# SHOA Backflow and Cross-Connection Ordinance and Backflow Prevention Program

## Skyridge Homeowners Association PWS 41-06047

### SECTION 1 CROSS-CONNECTION CONTROL – GENERAL POLICY

#### 1.1 Purpose

The purpose of this ordinance is

1.1.1 To protect the public potable water supply of Skyridge HOA from the possibility of contamination or pollution by isolating within the customer's internal distribution system(s) or the customer's private water system(s) such contaminants or pollutants that could backflow into the public water system; and,

1.1.2 To promote the elimination or control of existing cross-contaminations, actual or potential, between the customer's in-plant potable water system(s) and nonpotable water systems, plumbing fixtures, and industrial piping systems; and,

1.1.3 To provide for the maintenance of a continuing program of cross-connection control that will systematically and effectively prevent the contamination or pollution of all potable water systems.

#### 1.2 Responsibility

The Board of Directors shall be responsible for the protection of the public potable water distribution system from contamination or pollution due to the backflow of contaminants or pollutants through the water service connection. If, in the judgment of said Board of Directors an approved backflow-prevention assembly is required (at the customer's water service connection; or, within the customer's private water system) for the safety of the water system, the Board of Directors or its designated agent shall give notice in writing to said customer to install such an approved backflow-prevention assembly(s) at specific location(s) on his/her premises. The customer shall immediately install such approved assembly(s) at his/her own expense; and, failure, refusal, or inability on the part of the customer to install, have tested, and maintain said assembly(s) shall constitute grounds for discontinuing water service to the premises until such requirements have been satisfactorily met.

### SECTION 2 DEFINITIONS

#### 2.1 Board of Directors

The Board of Directors in charge of the water system of the Skyridge HOA is invested with the authority and responsibility for the implementation of an effective cross-contamination control program and for the enforcement of the provisions of this ordinance.

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## **2.2 Approved**

Accepted by the authority responsible as meeting an applicable specification stated or cited in this ordinance or as suitable for the proposed use.

## **2.3 Auxiliary Water Supply**

Any water supply on or available to the premises other than the purveyor's approved public water supply. These auxiliary waters may include water from another purveyor's public potable water supply or any natural source(s), such as a well, spring, river, stream, harbor, and so forth; used waters; or industrial fluids. These waters may be contaminated or polluted, or they may be objectionable and constitute an unacceptable water source over which the water purveyor does not have sanitary control.

## **2.4 Backflow**

The undesirable reversal of flow in a potable water distribution system as a result of cross-connection.

## **2.5 Backpressure**

A pressure, higher than the supply pressure, caused by a pump, elevated tank, boiler, or any other means that may cause backflow.

## **2.6 Backsiphonage**

Backflow caused by negative or reduced pressure in the supply piping.

## **2.7 Backflow Preventer**

An assembly or means designed to prevent backflow.

**2.7.1. Air gap.** The unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet conveying water or waste to a tank, plumbing fixture, receptor, or other assembly and the flood level rim of the receptacle. These vertical, physical separations must be at least twice the diameter of the water supply outlet, never less than 1 in. (25mm).

**2.7.2. Reduced-pressure backflow-prevention assembly.** The approved reduced-pressure principle backflow-prevention assembly consists of two independently acting approved check valves together with a hydraulically operating, mechanically independent pressure differential relief valve located between the check valves and below the first check valve. These units are located between two tightly closing resilient-seated shutoff valves as an assembly and equipped with properly located resilient-seated test cocks.

**2.7.3. Double check valve assembly.** The approved double check valve assembly consists of two internally loaded check valves, either spring-loaded or internally weighted, installed as a unit between two tightly closing resilient-seated shutoff valves and fitting with properly located resilient-seated test cocks. This assembly shall only be used to protect against a non-health hazard (that is, a pollutant).

## **2.8 Contamination**

An impairment of a potable water supply by the introduction or admission of any foreign substance that degrades the quality and creates a health hazard [OAR 333-061-0070(8)].

## 2.9 Cross-Connection

A connection or potential connection between any part of a potable water system and any other environment containing other substances in a manner that, under any circumstances would allow such substances to enter the potable water system. Other substances may be gases, liquids, or solids, such as chemicals, waste products, steam, water from other sources (*potable or nonpotable*), or any matter that may change the color or add odor to the water.

## 2.10 Cross-Connection – Controlled

A connection between a potable water system and a nonpotable water system with an approved backflow-prevention assembly properly installed and maintained so that it will continuously afford the protection commensurate with the degree of hazard.

## 2.11 Cross-Connection Control by Containment

The installation of an approved backflow-prevention assembly at the water service connection to any customer's premises, where it is physically and economically unfeasible to find and permanently eliminate or control all actual or potential cross-connections within the customer's water system; or it shall mean the installation of an approved backflow-prevention assembly on the service line leading to and supplying a portion of a customer's water system where there are actual or potential cross-connections that cannot be effectively eliminated or controlled at the point of cross-connection.

**2.12 Hazard, Degree of** The term is derived from an evaluation of the potential risk to public health and the adverse effect of the hazard upon the potable water system. **(See attached Table from OAR 333-061-0070 which lists degree of health hazards)**

**2.12.1. Hazard – health.** A cross-connection or potential cross-connection involving any substance that could, if introduced into the potable water supply, cause death or illness, spread disease, or have a high probability of causing such effects.

**2.12.2. Hazard – plumbing.** A plumbing-type cross-connection in a consumer's potable water system that has not been properly protected by an approved air gap or an approved backflow-prevention assembly.

**2.12.3. Hazard – non-health.** A cross-connection or potential cross-connection involving any substance that generally would not be a health hazard but would constitute a nuisance or be aesthetically objectionable, if introduced into the potable water supply.

**2.12.4. Hazard – system.** An actual or potential threat of severe damage to the physical properties of the public potable water system or the consumer's potable water system or of a pollution or contamination that would have a protracted effect on the quality of the potable water in the system.

## 2.13 Industrial-Fluids System

Any system containing a fluid or solution that may be chemically, biologically, or otherwise contaminated or pollute in a form or concentration, such as would constitute a health, system, pollution, or plumbing hazard, if introduced into an approved water supply. This may include, but not be limited to, **polluted or contaminated waters**; all types of process waters and **used waters originating from the public potable water system that may have deteriorated in sanitary quality (such as irrigation water siphoned back into the potable water system)**; chemicals in fluid form; plating acids and alkalies; circulating cooling waters connected to an

open cooling tower; and/or cooling towers that are chemically or biologically treated or stabilized with toxic substances; contaminated natural waters, such as wells, springs, streams, rivers, bays, harbors, seas, irrigation canals or systems, and so forth; oils, gases, glycerin, paraffins, caustic and acid solutions, and other liquid and gaseous fluids used in industrial or other purposes for fire-fighting purposes.

#### **2.14 Pollution**

The presence of any foreign substance in water that tends to degrade its quality so as to constitute a non-health hazard or impair the usefulness of the water.

#### **2.15 Water – Potable**

Water that is safe for human consumption as described by the public health authority having jurisdiction.

#### **2.16 Water – Nonpotable**

Water that is not safe for human consumption as described by the public health authority having jurisdiction.

#### **2.17 Service Connection**

The terminal end of a service connection from the public potable water system, that is, where the water purveyor loses jurisdiction and sanitary control over the water at its point of delivery to the customer's water system. If a meter is installed at the end of the service connection, then the service connection shall mean the downstream end of the meter. There should be no unprotected takeoffs from the service line ahead of any meter or backflow-prevention assembly located at the point of delivery to the customer's water system. Service connection shall also include water service connection from a fire hydrant and all other temporary or emergency water service connections from the public potable water system.

#### **2.18 Water - Used**

Any water supplied by a water purveyor from a public potable water system to a consumer's water system after it has passed through the point of delivery and is no longer under the sanitary control of the water purveyor.

### **SECTION 3 REQUIREMENTS**

#### **3.1 Water System**

**3.1.1** The water system shall be considered as made up of two parts; the utility system and the customer system.

**3.1.2** The utility system shall consist of the source facilities and the distribution system and shall include all those facilities of the water system under the complete control of the utility, including the water meter at which point the customer's system begins.

**3.1.3** The source shall include all components of the facilities utilized in the production, treatment, storage, and delivery of water to the distribution system.

**3.1.4** The distribution system shall include the network of conduits used for the delivery of water from the source to the customer's system.

3.1.5 The customer's system shall include those parts of the facilities beyond the termination of the utility distribution system that are utilized in conveying utility-delivered domestic water to points of use.

## 3.2 Policy

3.2.1 No water service connection to any premises shall be installed or maintained by water purveyor unless the water supply is protected through compliance with state laws and regulations such as OAR 333-061-0070 through 333-061-0074 and this Skyridge HOA Cross-Connection Ordinance. Service of water to any premises shall be discontinued by the water purveyor if a backflow-prevention assembly required by the Skyridge HOA Cross-Connection Ordinance is not installed, tested, and maintained, or if it is found that a backflow-prevention assembly has been removed, bypassed, or if an unprotected cross-connection exists on the premises. Service will not be restored until such conditions or defects are corrected.

3.2.2 The customer's system should be open for inspection at all reasonable times to authorized representatives of the Skyridge HOA to determine whether cross-connections or other structural or sanitary hazards, including violations of these regulations, exist. When such a condition becomes known, the **Board of Directors shall deny or immediately discontinue service to the premises by providing for a physical break in the service line until the customer has corrected the condition(s) in conformance with state and city statues relating to plumbing and water supplies and the regulations adopted pursuant thereto.**

3.2.3 An approved backflow-prevention assembly shall be installed on each service line to a customer's water system at or near the property line or immediately inside the building being served; but in all cases, before the first branch line leading off the service line wherever the following conditions exist:

3.2.3a In the case of premises having an **auxiliary water supply** that is not or may not be of safe bacteriological or chemical quality and that is not acceptable as an additional source by the Board of Directors, the public water system shall be protected against backflow from the premises by installing an approved backflow-prevention assembly in the service line, appropriate to the degree of hazard.

3.2.3b In the case of premises on which any industrial fluids or any other **objectionable substances** are handled in such a fashion as to create an actual or potential hazard to the public water system, the public system shall be protected against back-flow from the premises by installing an approved backflow-prevention assembly in the service line, appropriate to the degree of hazard. This shall include the handling of process waters and waters originating from the utility system that have been subject to deterioration in quality.

3.2.3c In the case of premises having (1) **internal cross-connections that cannot be permanently corrected** and controlled, or (2) **intricate plumbing and piping arrangements** or where entry to all portions of the premises is not readily accessible for inspection purposes, making it impracticable or impossible to ascertain whether or not dangerous cross-connections exist, the public water system shall be protected against backflow from the premises by installing an approved backflow-prevention assembly in the service line.

3.2.4 The type of protective assembly required under subsections 3.2.3a, 3.2.3b, and 3.2.3c shall depend upon the degree of hazard that exists as follows:

3.2.4a In the case of any premises where there is an auxiliary water supply as stated in subsection 3.2.3a of this section and it is not subject to any of the following rules, the

public water system shall be protected by an approved air-gap separation or an approved **reduced-pressure principle backflow-prevention assembly**.

3.2.4b In the case of any premises where there is water or substance that would be objectionable but not hazardous to health, if introduced into the public water system, the public water system shall be protected by an **approved double check valve assembly**.

3.2.4c In the case of any premises where there is any material dangerous to health that is handled in such a fashion as to create an actual or potential hazard to the public water system, the public water system shall be protected by an **approved air-gap separation or an approved reduced-pressure principle backflow-prevention assembly**. Examples of premises where these conditions will exist include sewage treatment plants, sewage pumping stations, chemical manufacturing plants, hospitals, mortuaries, and plating plants.

3.2.4d In the case of any premises where there are “uncontrolled” cross-connections, either actual or potential, the public water system shall be protected by an approved **air-gap separation or an approved reduced-pressure principle backflow-prevention assembly** at the service connection.

3.2.4e In the case of any premises where, because of security requirements or other prohibitions or restrictions, it is impossible or impractical to make a complete in-plant cross-connection survey, the public water system shall be protected against backflow from the premises by either an **approved air-gap separation or an approved reduced-pressure principle backflow-prevention assembly** on each service to the premises.

3.2.4f In the case of any premises where, in the opinion of the Board of Directors, an undue health threat is posed because of the presence of extremely toxic substances, the Board of Directors may require an **air gap at the service connection to protect the public water system**. This requirement will be discretion of the Board of Directors and is dependent on the degree of hazard.

3.2.5 Any backflow-prevention assembly required herein shall be a model and size approved by the Board of Directors. The term *approved backflow-prevention assembly* shall mean an assembly that has been manufactured in full conformance with the standards established by the American Water Works Association titled:

ANSI/AWWA C510-89 – *Standard for Double Check Valve Backflow-Prevention Assembly*, and AWWA C511-89 – *Standard for Reduced-Pressure Principle Backflow-Prevention Assembly*, and have met completely the laboratory and field performance specifications of the Foundation for Cross-Connection Control and Hydraulic Research (FCCCHR) or the University of Southern California established by “Specification of Backflow-Prevention Assemblies” – Sec. 10 of the most current issue of the *Manual of Cross-Connection Control*.

Said AWWA and FCCCHR standards and specifications have been adopted by the Board of Directors. Final approval shall be evidenced by a “Certificate of Approval” issued by an approved testing laboratory certifying full compliance with said AWWA standards and FCCCHR specifications.

The following testing laboratory has been qualified by the Board of Directors to test and certify backflow preventers: Foundation for Cross-Connection Control and Hydraulic Research, University of Southern California, University Park, Los Angeles, CA 90089.

Testing laboratories other than the laboratory listed above, will be added to an approved list as they are qualified by the Board of Directors.

Backflow preventers that may be subjected to backpressure or backsiphonage that have been fully tested and have been granted a certificate of approval by said qualified laboratory and are listed on the laboratory's current list of approved backflow-prevention assemblies may be used without further testing or qualification.

3.2.6 It shall be the duty of the customer-user at any premises where backflow-prevention assemblies are installed to have certified inspections and operational tests made at least once per year. In those instances where the Board of Directors deems the hazard to be great enough, certified inspections may be required at more frequent intervals. These inspections and tests shall be at the expense of the water user and shall be performed by the assembly manufacturer's representative, Skyridge HOA personnel, or by a certified tester approved by the Board of Directors. It shall be the duty of the Board of Directors to see that these tests are made in a timely manner. The customer-user shall notify the Board of Directors in advance when the tests are to be undertaken so that the customer-user may witness the tests if so desired. These assemblies shall be repaired, overhauled, or replaced at the expense of the customer-user whenever said assemblies are found to be defective. Records of such tests, repairs, and overhaul shall be kept and made available to the Board of Directors.

3.2.7 All presently installed backflow-prevention assemblies that do not meet the requirements of this section but were approved assemblies for the purpose described herein at the time of installation and that have been properly maintained, shall, except for the inspection and maintenance requirements under subsection 3.2.6, be excluded from the requirements of these rules so long as the Board of Directors is assured that they will satisfactorily protect the utility system. Whenever the existing assembly is moved from the present locations, requires more than minimum maintenance, or when the Board of Directors finds that the maintenance constitutes a hazard to health, the unit shall be replaced by an approved backflow-prevention assembly meeting the requirements of this section.

The foregoing ordinance was first approved by the Board of Directors of the Skyridge Homeowners Association of Lane County, Oregon, on the 17<sup>th</sup> day of March, 2014.

Votes:

Yes: 5

No: 0

Abstaining: 0

Absent: 0

APPROVED BY: Christine Horn  
President, SHOA

ATTEST:

M. Carolyn Magrath  
Secretary, SHOA

**TABLE 48\* \*\***

**PREMISES REQUIRING ISOLATION\* BY  
AN APPROVED AIR GAP  
OR  
REDUCED PRESSURE PRINCIPLE TYPE OF ASSEMBLY**

**HEALTH HAZARD**

1.	Agricultural (e.g. farms, dairies)
2.	Beverage bottling plants**
3.	Car washes
4.	Chemical plants
5.	Commercial laundries and dry cleaners
6.	Premises where both reclaimed and potable water are used
7.	Film processing plants
8.	Food processing plants
9.	Medical centers (e.g., hospitals, medical clinics, nursing homes, veterinary clinics, dental clinics, blood plasma centers)
10.	Premises with irrigation systems that use the water supplier's water with chemical additions (e.g., parks, playgrounds, golf courses, cemeteries, housing estates)
11.	Laboratories
12.	Metal plating industries
13.	Mortuaries
14.	Petroleum processing or storage plants
15.	Piers and docks
16.	Radioactive material processing plants and nuclear reactors
17.	Wastewater lift stations and pumping stations
18.	Wastewater treatment plants
19.	Premises with piping under pressure for conveying liquids other than potable water and the piping is installed in proximity to potable water piping
20.	Premises with an auxiliary water supply that is connected to a potable water supply
21.	Premises where the water supplier is denied access or restricted access for survey
22.	Premises where the water is being treated by the addition of chemical or other additives

**KEEP THIS FOR YOUR RECORDS**

\* Refer to OAR 333-061-0070(8) Premise Isolation Requirements.

\*\* A Double Check Valve Backflow Prevention Assembly could be used if the water supplier determines there is only a non-health hazard at a beverage bottling plant.



# Backflow Prevention Program

The SHA Backflow Prevention Program consists of:

- 1) **Master list of facilities and premises** which are subject to testing, and those that are not. This Master List is updated each year with test results obtained from the Certified Tester's Backflow Assembly Test Reports. Each year, the backflow device data (Type, Size, Make, Model and Serial Number) for each location is reconciled with the data entries on the Tester's reports. This also allows us to easily compare test results and device identity from year to year, to better assure there are no gaps in our monitoring system.
  - a. The MASTER LIST for the SHOA is attached hereto.
- 2) **Designation of Hazard Levels.** The Master List designates the Hazard Level for each Location within the Subdivision. The Health Hazard level is informed from the Table in OAR 333-061-0070(8) (version from 2013).
- 3) **Annual Report Summaries.** Following the Master List are copies of the Annual Summary Reports submitted to the Oregon Health Authority. These reports have been maintained since 2009, when the cross-protection/backflow prevention program was first implemented.