

ORDINANCE

946

CITY OF LACEY

AN ORDINANCE ADOPTING THE CITY OF LACEY CROSS CONNECTION AND BACK-FLOW PREVENTION MANUAL AND AMENDING SECTION 13.48.070 OF THE LACEY MUNICIPAL CODE.

WHEREAS, the City has developed and wishes to implement a comprehensive cross connection and backflow control program in accordance with RCW Chapter 70.54 and Washington Administrative Code Chapter 248-54-285, and

WHEREAS, it is of benefit to all water customers that the location of all cross connections and backflow risks to the domestic water supply be located, proper backflow protection devices installed and a regular program of inspections and testing of backflow protection devices be conducted; now, therefore

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF LACEY, WASHINGTON, as follows:

Section 1: Those certain standards and guidelines entitled "City of Lacey Cross Connection and Backflow Prevention Manual" dated March, 1992, are hereby adopted as the official cross connection and backflow prevention requirements and conditions for all existing and new domestic water service customers of the City. Compliance with the provisions of the City of Lacey Cross Connection and Backflow Prevention Manual shall be a condition of receiving the City of Lacey domestic water supply.

Section 2: Section 13.48.070 of the Lacey Municipal Code is hereby amended to read as follows:

"Cross-connections and ~~private-supply~~ backflow protection.

(a) It is unlawful for any person to install a cross-connection between any private water supply within or adjacent to any premises and the public water supply system of the city. Any such cross-connection ~~or inner-connection~~ now existing or hereafter installed is hereby declared a nuisance and may be abated at once by the City without notice by ~~the-city-council~~ by disconnecting such cross-connections or by cutting off the supply of water from the city distribution system to the premises supplied.

(b) No system to supply water for human consumption shall be constructed or installed in violation of RCW 70.54 or WAC 248-54-285.

(c) Service of the city water supply system to any premises upon which a private water supply system is used or maintained contrary to the provisions of this section may be discontinued or refused.

(d) It is unlawful for any person to allow any contaminants to backfeed from their private facility and/or property into the city distribution system. Any connections now existing or hereafter installed that could allow for backfeed of any contaminants into the city distribution system shall be disconnected and/or eliminated. Connections which cannot be discontinued and/or eliminated shall require the installation of an approved backflow protection device

and regularly inspected and tested in accordance with the City of Lacey Cross Connection and Backflow Prevention Manual.

(e) Service of the city water supply system to any premises upon which the potential for backflow into the city system exists may be discontinued or refused unless corrective action is taken in accordance with the City of Lacey Cross Connection and Backflow Prevention Manual.

PASSED BY THE CITY COUNCIL OF THE CITY OF LACEY, WASHINGTON,
this 23rd day of July, 1992.

CITY COUNCIL

By Gene Carquestedell
Mayor

Attest:

Charlotte S. Taylor
City Clerk

Approved as to form:

[Signature]
City Attorney

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Monday

CITY OF LACEY

CROSS CONNECTION



BACKFLOW PREVENTION MANUAL



CITY OF **LACEY**

February, 1992



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I. Definitions

A. Approved

Accepted by the Director of Public Works as meeting an applicable specification stated or cited in this regulation.

B. Auxiliary Water Supply

Any water supply to the premises other than the City's approved public potable water supply.

C. Backflow

The flow of water or other liquids, mixtures or substances, under positive or reduced pressure in the distribution pipes of a potable water supply from any source other than its intended source.

D. Backflow Preventer

A device or means designed to prevent backflow or back siphonage. Most commonly categorized as air gap, atmospheric vacuum breaker, double check valve assembly, pressure vacuum breaker, and reduced pressure device.

D.1 Air Gap

A physical separation sufficient to prevent backflow between the free-flowing discharge end of the potable water system and any other system. Physically defined as a distance equal to twice the diameter of the supply side pipe diameter but never less than one inch.

D.2 Atmospheric Vacuum Breaker

A device which prevents back siphonage by creating an atmospheric vent when there is either a negative pressure or sub-atmospheric pressure in a water system.

D.3 Double Check Valve Assembly

An assembly of two independently operating spring loaded check valves with tightly closing shut off valves on each side of the check valves, plus properly located test cocks for the testing of each check valve.

D.4 Pressure Vacuum Breaker

A device containing one or two independently operated spring loaded check valves and an independently operated spring loaded air inlet valve located on the discharge side of the check or checks. Device includes tightly closing shut-off valves on each side of the check valves and properly located test cocks for the testing of the check valve(s).

D.5 Reduced Pressure Device

An assembly consisting of two independently operating approved check valves with an automatically operating differential relief valve located between the two check valves, tightly closing shut-off valves on each side of the check valves plus properly located test cocks for the testing of the check valves and the relief valve.

E Backpressure

A condition in which the owners system pressure is greater than the suppliers system pressure.

F. Back Siphonage

The flow of water or other liquids, mixtures or substances into the distribution pipes of a potable water supply system from any source other than its intended source caused by the sudden reduction of pressure in the potable water supply system.

G. City

The City of Lacey or their duly authorized representative.

H. Containment

A method of backflow prevention which requires a backflow protection device at the water service entrance to effectively isolate the premise from the distribution system.

I. Contaminant

A substance that will impair the quality of the water to a degree that it creates a health hazard to the public leading to poisoning, the spread of disease or a violation of water quality standards.

J. Cross-Connection

Any actual or potential connection between the public water supply and a source of contamination or pollution.

K. Owner

Any person who has legal title to, or license to operate or occupy, a property upon which a cross-connection inspection will be made or upon which a cross-connection is present.

L. Director

The Director, or his delegated representative in charge of the City of Lacey Department of Public Works.

M. Person

Any individual, partnership, company, public or private corporation, political subdivision or agency of the State or the United States or any other legal entity.

N. Permit

A document issued by the City which allows the use of a backflow preventer.

O. Pollutant

A foreign substance that will degrade water quality and would constitute a moderate hazard, or impair the usefulness or quality of the water to a degree that is not a hazard to the public health but which does adversely and unreasonable effect such water for domestic use.

P. Water Service Entrance

That point in the owners water system beyond the sanitary control of the City; generally considered to be the outlet end of the water meter and always before any unprotected branch.

II. Purpose and Scope

This manual establishes minimum standards for the City to protect the public potable water supply from possible contamination of pollution due to backflow or back siphon from a customers private internal system into the public potable water system.

This manual establishes minimum cross-connection control operating policies, provides guidelines and requirements for installation, testing, and maintenance of approved backflow devices and establishes permitting, and inspection requirements for existing and new backflow protection devices.

III. Authority

- A. The Federal Safe Drinking Water Act of 1974 and the statutes of the State of Washington Title 43 RCW and Chapter 248-54 WAC require purveyors to "protect public water systems from contamination due to cross-connections".
- B. City of Lacey Municipal Code, Chapter 13.48.070 prohibits the presence of cross-connections.
- C. The City Water System Plan adopted by resolution 605 includes cross-connection program requirements.

IV. Responsibility

The Director shall be responsible for the protection of the public potable water distribution system from contamination or pollution due to the backflow or back siphonage of contaminants or pollutants through water service connections.

If the Director determines a backflow device is required at any customer's premises, the Director, or his delegated agent, shall give notice to said customer to install an approved backflow prevention device at one or more locations to his premises. Installation of requested backflow protection devices shall be a condition of continued water service from the City.

Upon installation the customer shall contact the City requesting inspection and testing of said device or devices. The customer shall be subject to all applicable inspection and testing fees as may be established.

V. Failure to Comply

Any person, firm or corporation who willfully violates any of the provisions of this manual or Lacey Municipal Code, Chapter 13.48.070, "Cross-Connection and Private Supply" is guilty of a misdemeanor further;

Any person, firm or corporation who willfully violates any provisions and requirements of this manual shall be subject to discontinuance of supply of City water to the premise. Discontinuance of the City potable supply to the premise shall remain in effect until corrective action as required by the Director is completed, tested and approved.

VI. Requirements

A. General

The City will operate a cross-connection control program which fulfills the requirements of the State of Washington Cross-Connection Regulations and is approved by the City of Lacey.

The owner shall allow their property to be inspected for possible cross-connection and shall follow the provisions of the City's program if a cross-connection is permitted.

If the City requires that the public supply be protected by containment, the owner shall be responsible for water quality beyond the outlet end of the containment device and should utilize fixture outlet protection for that purpose. Fixture outlet devices shall be installed in accordance with the Uniform Plumbing Code. A plumbing permit and inspections may be required.

B. City of Lacey

On new installations, the City will provide on-site evaluation and/or inspection of plans in order to determine the type of backflow preventer, if any, that will be required, will issue permits, and perform inspection and testing. In any case, a minimum of a meter setter check valve will be required on any new construction.

For premises existing prior to the start of this program, the City will perform evaluations and inspections of plans and/or premises and inform the owner by letter of any corrective action deemed necessary, the method of achieving the correction, and the time allowed for the correction to be made. Ordinarily, sixty days will be allowed; however, this time period may be shortened depending upon the degree of hazard involved and the history of the device(s) in question.

Premises will be inspected on or after the expiration date of required action to correct a cross-connection. Premises that have failed to comply with the City's request shall receive written notice that water service to the premise will be terminated within a period not to exceed seven calendar days. In the event the owner informs the City of extenuating circumstances as to why the correction has not been completed the City may grant a time extension up to but not exceeding thirty days.

The City will not allow any cross-connection to remain unless it is protected by an approved backflow preventer for which a permit has been issued and which will be regularly tested to insure satisfactory operation.

If the City determines at any time that a serious threat to the public health exists, the water service will be terminated immediately.

The City shall perform all inspection and testing for all backflow devices. Testing and inspection shall include the initial installation, on-site reviews of existing installations, after any repairs or maintenance, after any relocation and the annual testing requirement.

When an initial installation or annual test identifies a backflow device is not properly functioning, the owner shall correct the malfunction as directed by the City. The owner shall contact the City after correcting the malfunction for inspection and retesting of the device(s).

C. Owner

The owner shall be responsible for the elimination or protection of all cross-connections on their premises.

The owner after having been informed by a letter from the City shall at their expense, install any and all backflow preventers requested.

The owner shall correct any malfunction of the backflow preventer which is revealed by periodic City testing.

The owner shall inform the City of any proposed or modified cross-connections and also any existing cross-connections of which the owner is aware but has not been found by the City.

The owner shall install only backflow preventers approved by the City.

Any owner having a private well or other private water source shall not cross-connect to the City's system.

The owner shall provide access to premises to the City at the City's request. Failure to provide access to inspect facilities shall be grounds for termination of water service.

The owner shall be responsible for the payment of all fees for permits, annual or semi-annual device testing, re-testing in the case that the device fails to operate correctly, and any re-inspections for non-compliance with City requirements. Permits and fee schedules shall be as specified in the applicable sections of development permit fees of the City.

VII. Applicability

The provisions of this manual are applicable to all connections to the City domestic water supply. The City recognizes there are varying degree of risks associated with different types of uses and will consider this when determining if a cross connection exists and applicable backflow prevention devices. Table 1 lists common backflow devices that may be required. NOTE: The following Tables 1, 2, 3 and 4 are derived from American Water Works Association Cross Connection Control Manual, May 1990.

Table 1: Abbreviations

<u>Abbreviation</u>	<u>Description</u>	<u>Level of Protection</u>
AG	Air Gap	1
RPBA	Reduced Pressure Backflow Assembly	2
RPDA	Reduced Pressure Detector Assembly	2
DCVA	Double Check Valve Assembly	3
DCDA	Double Check Detector Assembly	3
PVBA	Pressure Vacuum Breaker Assembly	4
AVB	Atmospheric Vacuum Breaker	5

NOTE: Lower numbers in the "Level of Protection" column indicate higher levels of protection.

There are premises which require mandatory premise isolation. These types of premises and minimum protection requirements are shown in Table 2. Table 2 is not considered to include all premises. The City may require backflow protection of any facility it deems appropriate and a risk to the domestic system. Table 3 lists the types of facilities the City may require backflow protection devices.

Table 2: Premises Requiring Mandatory Service Protection

<u>Premises</u>	<u>Protection</u>	<u>Premises</u>	<u>Protection</u>
Beverage bottling plants	RPBA	Nursing homes	RPBA
Car washes	RPBA	Petroleum processing or storage plants	RPBA
Chemical plants	RPBA	Piers and docks	RPBA
Fire sprinkler services	DCVA	Radioactive material processing plants or nuclear reactors	RPBA
Food processing plants	DCVA	Hospitals, medical centers and clinics	RPBA
Sewage lift stations	RPBA	Sewage treatment plants	RPBA
Sewage pump stations	RPBA	Tall buildings (over 30', domestic water)	DCVA
Laboratories	RPBA	Unapproved auxiliary supply	RPBA
Metal plating industries	RPBA		
Mortuaries	RPBA		

Table 3: Facilities Requiring Backflow Protection

<u>Facilities</u>	<u>Protection</u>	<u>Facilities</u>	<u>Protection</u>
Battery manufacturing or repair facilities	RPBA	Film processing facilities	RPBA
Boat marinas	RPBA	Ice manufacturing plants	RPBA
Canneries	DCVA	Mobile home parks	DCVA
Cold storage plants	RPBA	Packing houses (slaughter houses)	RPBA
Commercial laundries	RPBA	Paper product plants	RPBA
Concrete mixing plants	DCVA	Parks and playgrounds	DCVA
Dairies	DCVA	Plasma centers	RPBA
Dry cleaners	RPBA	Sand and gravel plants	DCVA
Dry docks	RPBA	Ship repair facilities	RPBA
Farms	DCVA	Shopping centers	DCVA

In addition to mandatory backflow protection for certain types of premises there are numerous fixtures, equipment areas, or other common use areas which could have cross connection and backflow potential. These fixtures, equipment areas and other areas must be inspected and analyzed to determine potential risk to the system. Table 4 lists typical fixtures, equipment areas and other areas that may or may not require backflow protection devices.

**Table 4: Fixtures, Equipment and Areas
with Backflow Potential**

<u>Fixtures, Equipment and Areas</u>	<u>Minimum Protection</u>	<u>Fixtures, Equipment and Areas</u>	<u>Minimum Protection</u>
Air compressors	DCVA	Etching tanks	AG/RPBA
Air conditioning systems	RPBA	Fermenting tanks	AG/RPBA
Air washers	RPBA	Fertilizer injection equipment	RPBA
Aquarium make-up water	AG/RPBA	Film processors	RPBA
Aspirators, medical	AVB	Fire department connections	DCVA
Aspirators, weedicide, herbicide and pesticide	AVB	Fire sprinkler systems	DCVA
Autoclaves	RPBA	Floor drains	AG
Autopsy tables	RPBA	Flushing floor drains	AVB
Baptismal founts	AG/AVB	Foamite systems	RPBA
Bathtub, below rim filler	Not Allowed	Fountains, ornamental	AG/RPBA
Bedpan washers	AVB	Fume hoods	AVB
Beverage dispensers using CO ₂	RPBA	Garbage can washers	AVB/PVB/
Bidets	AG-Internal	Garbage disposals	AVB
Boat lifts	RPBA	Heat exchangers	RPVA
Boiler feed lines	AG/RPBA	Heat pumps	RPBA
Bottle washing equipment	RPBA	High pressure washers	DCVA
Box hydrants	PVBA/DCVA	Hose bibbs	AVB
Brine tanks	AG/DCVA	Hoses, kitchen rinse	AVB
Can washing equipment	AVB/PVBA	Hot tubs	AG/RPBA
Chemical feeder tanks	AG/RPBA	Hot water heating systems	RPBA
Chilled water systems	RPBA	Hot water boilers	RPBA
Chlorinators	RPBA	Humidifier tands and boxes	AG
Coffee urns	AG/AVB	Hydraulically operated equipment	DCVA
Computer cooling lines	AG/RPBA	Hydrotherapy baths	AVB
Condensate tanks	AG/RPBA	Ice makers	AG
Cooking kettles	AG/AVB	Industrial fluid systems	RPBA
Cooling towers	AG/RPBA	Intertied (looped) water systems	DCVA
Decorative ponds	AG/RPBA	Irrigation systems	AVB/PVB/
Degreasing equipment	RPBA	Janitor sinks	AVB
Demineralized water systems	RPBA	Kitchen equipment	AVB
Dental cuspidors	RPBA	Laboratory equipment	RPBA
Detergent dispensers (dishwasher)	AVB	Laundry machines, commercial	RPBA
Dialysis equipment	RPBA	Lavatories	AVB
Dishwashers	AVB	Livestock drinking tanks	AG/AVB
Drinking fountains	AG	Make-up tanks	AG/RPBA
Dye vats and tanks	AG/RPBA	Mobile carpet cleaners	RPBA
Dynamotors	DCVA	Mop sinks	AVB
Emergency generators	RPBA	Outboard motor test tanks	AG/AVB

Table 4: Fixtures, Equipment and Areas with Backflow Potential (continued)

<u>Fixtures, Equipment and Areas</u>	<u>Minimum Protection</u>	<u>Fixtures, Equipment and Areas</u>	<u>Minimum Protection</u>
Perchlorethylene reclaim	RPBA	Steam cleaners	RPBA
Pesticide applicator trucks	AG/RPBA	Steam ejectors	RPBA
Photo developing tanks and sinks	RPBA	Steam generating facilities	RPBA
Photostat equipment	RPBA	Sterilizers	RPBA
Pipette washers	AVB	Stills	RPBA
Potato peelers	AVB	Sumps	AG
Poultry feeders	RPBA	Swimming pools	AG/RPBA
Private hydrants	DCVA	Toilets (internal)	AG
Processing tanks	AG/RPBA	Trap primers	AG
Pump seal water	AG	Ultrasonic baths	AG
Pumps, pneumatic ejector	RPBA	Urinals (internal)	AG
Pump prime lines	DCVA	Used water systems	RPBA
Pumps, water operated ejector	RPBA	Vats	AG/AVB
Radiator flushing equipment	RPBA	Washing pools	AG/RPBA
Recreational vehicle dump stations	RPBA	Wall hydrants	AVB
Serrated faucets	AVB	Wash basins	AG/AVB
Service sinks	AVB	Wash-up sinks	AG/AVB
Sewer connected equipment	AG	Wash tanks	AG/AVB
Sewer flughing	AG	Waste water lines	AG
Shampoo basins/hose rinse	AVB	Water-air sprays	DCVA
Showers, telephone	AVB	Water closets (internal)	AG
Sitz baths	AVB	Water cooled equipment	DCVA
Soap mixing tanks	AG/AVB	Water ejectors	RPBA
Solar heating systems	RPVA	Water recirculating systems	DCVA
Solution tanks	AG/RPBA	Water settling	DCVA
Spas	AG/RPBA	Water treatment tanks	AG/RPBA
Specimen tanks	AG/RPBA	Water trucks	DCVA
Starch tanks	AG/DCVA	Wet vacuum systems	RPBA
Stream-air sprays	RPBA	Whirlpool baths	AVB
		Windshield washer fluid aspirators	RPBA
		X-ray processors	RPBA

VIII. Installation and Testing

Installation and testing of all backflow protection devices shall be in accordance with Cross Connection Control Manual Accepted Procedures and Practice produced by the American Water Works Association. The latest edition shall be used. Copies can be purchased from the State Department of Health Drinking Water Section.

In addition, all backflow protection devices shall be installed at a location that is easily accessible for inspection and testing. Devices located in vaults shall have adequate clearances and depths to allow the City to inspect and test. Devices that cannot be easily and readily inspected shall be required to be relocated and replumbed as required by the City. The owner shall contact the City for applicable installation requirements and standards.

IX. Existing Backflow Protection Devices

Any existing backflow protection device in use can continue to be used providing:

1. The devices are functioning properly based on inspection and test by the City.
2. The degree of protection is satisfactory for protection of the City's domestic system as determined by the Director.

Backflow devices that do not meet the above conditions shall be removed and installed with new approved devices.