

RESOLUTION NO. 9709
Fair Oaks Water District

PROTECTION OF DRINKING WATER FROM
CROSS-CONNECTIONS AND BACKFLOW

BY THIS RESOLUTION, the Board of Directors of the Fair Oaks Water District (District) establishes Backflow Prevention Requirements and Enforcement Measures within the District.

IT is the responsibility of the District to protect the public water system of the District against actual or potential cross-connections and backflow by isolating within premises, contamination or pollution that may occur because of undiscovered or unauthorized cross-connections on those premises.

THE District intends to eliminate existing connections between the public water system and other sources of water that are not approved as safe and potable for human consumption.

THE District discourages all uses of the public water system of the District other than potable water use.

THE District intends to comply with the California Administrative Code Title 17, Sections 7583 through 7605.

THE District participates with health agencies and other water purveyors to implement backflow prevention requirements and enforcement measures to insure public health goals are met.

The Cross-Connection Control and Backflow Prevention program is enacted as follows:

SECTION I - DEFINITIONS

The meanings of terms used in this Resolution are as follows:

- I.1 "Air-Gap Separation" (AG) means the unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet conveying water to a tank, plumbing fixture, receptor, or 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, and never less than 1 inch.
- I.2. "Approved Public Water System" means a water supply that has been

approved by the health agency having jurisdiction.

- I.3 "Approved backflow prevention assemblies" means accepted or acceptable under applicable specifications or standards stated or cited in this Resolution, or accepted as suitable for the proposed use under procedures and authority of the District or the Department. (Refer to Items "P" and "Q" in this Section.)
- I.4 "Approved Testing Laboratory" means a person or entity that is competent and possesses the necessary facilities, as determined by the District or the Department, to investigate and evaluate backflow prevention assemblies and is independent of backflow prevention assembly manufacturers.
- I.5 "Atmospheric Vacuum Breaker" (AVB) (non-pressure) consists of a float check, a check seat and an air inlet port. A shutoff valve immediately upstream may be an integral part of the assembly. The AVB is designed to allow air to enter the down stream water line to prevent backsiphonage. This unit may never be subjected to a backpressure condition or have a downstream shutoff valve, or be installed where it will be in continuous operation for more than 12 hours.
- I.6 "Auxiliary Water Supply" means any water supply on or available to a customer's premises other than water supplied by the District.
- I.7 "Backflow" means the flow of water or other liquids, mixtures, or substances into the distributing pipes of a potable water supply from any source(s) other than its intended source.
- I.8 "Backflow connection" means a connection or condition arranged whereby a backflow can occur.
- I.9 "Backpressure backflow" means backflow due to an increased pressure above the supply pressure.
- I.10 "Backsiphonage backflow" means the flowing back of used, contaminated, or polluted water from a plumbing fixture or vessel into a water supply pipe due to a negative pressure in that pipe.
- I.11 "Backflow prevention assembly" means an approved assembly, device, or means designed to prevent backflow. Such devices must be approved by a testing agency acceptable to the District or Department.
- I.12 "Certified Backflow Prevention Assembly Tester" means a person who has been certified by the Department as having the necessary training and competence to test backflow prevention assemblies.

- I.13 "Contamination" means an impairment of the potable water supply by the introduction or admission of any foreign substance that degrades the quality and creates potential a health hazard.
- I.14 "Cross-Connection" means any connection or arrangement between any part of a potable water supply 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 product, steam, water from other sources (potable or nonpotable), or any matter that may change the color or add odor to the water. Bypass arrangements, jumper connections, removable sections, swivel or changeover assemblies, or any other temporary or permanent connection arrangement through which backflow may occur are considered to be cross connections.
- I.15 "Customer" means any person, premise owner, water user, or entity to whom water is furnished or sold by the District.
- I.16 "Degree of Hazard" means an evaluation of potential risk to public health and the adverse effect of the hazard upon the potable water system.
- I.17 "Department" means the Department of Health Services, Office of Drinking Water for the State of California and/or the Department of Environmental Management, Division of Environmental Health for the County of Sacramento and the authorized representatives of those Departments.
- I.18 "District" means the Fair Oaks Water District and the authorized representatives of the District.
- I.19 "Double Check Valve Assembly" (DC) 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 fittings with properly located resilient-seated test cocks. *This assembly shall only be used to protect against a nonhealth hazard (pollutant).*
- I.20 "Health hazard" means a cross connection or potential cross connection involving any substance that could possibly, if introduced in the potable water supply, cause death, illness, spread disease, or otherwise adversely affect public health.
- I.21 "Internal Hazards" means cross connections occurring in internal plumbing.

- I.22 "Internal plumbing" shall mean all plumbing on the discharge side of an approved backflow preventer at the source of the potential contamination.
- I.23 "Irrigation Service" means a potable service connection which may be utilized for irrigation, and which is not used for either fire protection or domestic purposes, either residential or commercial.
- I.24 "Nonhealth hazard" means 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,
- I.25 "Nonpotable water" means water that is not safe to drink or is of questionable quality.
- I.26 "Pollution" means the presence of any foreign substance in water that tends to degrade its quality so as to constitute a potential nonhealth hazard or impair the usefulness of the water.
- I.27 "Potable water" means water that is safe for human consumption as described by the public health authority having jurisdiction.
- I.28 "Premises" means a piece of land together with any buildings and appurtenances located on that land.
- I.29 "Pressure Vacuum Breaker Assembly" (PVB) consists of an independent operating internally loaded check valve, an independent operating loaded air inlet valve located on the discharge side of the check valve, with properly located resilient-seated test cocks and a tightly closing resilient-seated shutoff valve attached at each end of the assembly designed to operate under pressure for prolonged periods of time to prevent backsiphonage. The pressure vacuum breaker may not be subjected to backpressure.
- I.30 "Public Water System" means the potable water supply system of the District or other water purveyor approved by or under the public health supervision of the Department of Health Services of the State of California.
- I.31 "Reduced Pressure Principle Assembly" (RP) 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 are equipped with properly located resilient-seated test cocks.

1.32 "Service Connection" means the point at which the public water system piping of the District ends and the water system piping of the Customer begins. Provided other special arrangements or agreements between the District and the customer have not been made, if a meter is installed as part of the public water system, then the term "service connection" means the downstream end of the meter.

1.33 "Severability" applies to this resolution. If any section, subsection paragraph, clause, or phrase of this ordinance is for any reason held to be invalid, or unconstitutional by a decision of a court of competent jurisdiction, it shall not affect the remaining portions of this ordinance, including any other section, subsection, sentence, clause, or phrase therein.

1.34 "Used water" means 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.

1.35 "Water Purveyor" means any person, corporation, public utility, municipality, district, or other agency or institution that operates a public water system.

SECTION II - PROTECTION OF PUBLIC WATER SYSTEM AT WATER SERVICE CONNECTION

II.1 Where Protection is Required: Protection is required at each District service connection to premises having an auxiliary water supply that may be of use.

II.2 Protection is required at each District service connection that supplies water to premises on which any substance is or may be handled in such a manner as to permit entry into the public water system, including water originating from the public water system which is or may be subjected to deterioration in water quality.

II.3 Protection is required at each service connection to any premises that has cross-connections unless such cross-connections are abated to the satisfaction of the District.

II.4 Protection is required at each service connection to any premises that utilizes any water treating chemical or substance is found that the equipment, mechanism, chemical or substance may cause pollution or

contamination of the domestic water supply. Use of the equipment or mechanism may be permitted only when equipped with an approved backflow prevention device or assembly.

SECTION III - REQUIRED SERVICE CONNECTION PROTECTION

The type of protection that is provided to prevent backflow into the public water system shall be commensurate with the degree of hazard that exists on the customer's premises. The types of approved backflow prevention assemblies that may be required (listed in an increasing level of protection provided) include: Double Check Valve Backflow Prevention Assembly (DC), Reduced Pressure Principle Backflow Prevention Assembly (RP), or an Air-Gap Separation (AG). The water customer or the District may choose a higher level of protection than is required by these rules and regulations but not less than the minimum protection required. Plants, facilities, or situations which are not listed in this Section shall be evaluated on a case by case basis and the appropriate type of protection shall be determined by the District.

The required minimum level of service connection protection at specific plants and facilities shall include, but not be limited to, the following:

- III.1 Automotive Plants - RP
- III.2 Autopsy Facilities - RP or AG
- III.3 Auxiliary Water Supply - RP
- III.4 Beverage Bottling Plants - RP
- III.5 Boilers - RP
- III.6 Breweries - RP
- III.7 Buildings:
 - a. Hotels, apartment houses, public and private buildings, or other structures where sewage pumps and/or sewage ejectors have been installed - RP
 - b. Any commercial structure in which the specific business activity cannot be ascertained - RP
 - c. Premises that use booster pumps or elevated storage tanks to distribute potable water within the premises - RP

- d. Any building that exceeds forty (40) feet in height as measured from the service connection to the highest water outlet - RP

III.8 Canneries, Packing Houses, and Reduction Plants - RP or AG

III.9 Chemical Plants - Any premises served from the District where there is a facility requiring the use of water in the industrial process of manufacturing, storing, compounding or processing chemicals. This will also include facilities where chemicals are used as additives to the water supply or in the processing of products - RP or AG

III.10 Chemically Contaminated Water Systems - Any premises served from the District where chemicals are used as additives to the water supply, or where the water supply is used for transmission or distribution of chemicals, or where chemicals are used with water in the compounding or processing of products - RP

III.11 Chiropractic Clinics/Businesses - RP

III.12 Cold Storage Plants - RP

III.13 Convalescent Homes - RP

III.14 Dairy Processing Plants - RP

III.15 Dental Clinics/businesses - RP

III.16 Dry Cleaning Facilities - RP

III.17 Dye Works - RP

III.18 Film Processing Facilities or Film Manufacturing Plants - RP

III.19 Fire Protection Systems that are supplied from the public water system:

a. Low-Hazard Fire Protection Systems:

- i) Premises where the fire protection system is directly supplied from the District, whether or not there is an auxiliary water supply on or to the premises (not interconnected) - DC
- ii) Premises where the fire protection system is supplied from the District and where either elevated

storage tanks or fire pumps which take suction from private reservoirs or tanks are used – DC

- iii) Premises where the fire protection system is directly supplied from the District and interconnected with another public water system - DC

b. High-Hazard Fire Protection Systems:

- i) Premises where the fire protection system is supplied from the District and is interconnected with an auxiliary water supply - RP
- ii) Premises where the fire protection system is supplied from the District and contains any hazardous substance, including anti-freeze and wetting or foaming agents - RP

III.20 Hospitals - RP

III.21 Ice Manufacturing Plants - RP

III.22 Irrigation Systems:

- a. Premises or locations where facilities are installed for pumping, injecting, or spreading fertilizers, pesticides, or other hazardous substances - RP
- b. Premises or locations where irrigation systems are subject to contamination from submerged inlets, auxiliary water supplies, ponds, reservoirs, swimming pools and other sources of stagnant, polluted, or contaminated water - RP
- c. Premises or locations having a separate service connection for irrigation purposes - RP

III.23 Laboratories - Including, but not limited to, teaching institutions, biological, and analytical facilities - RP

III.24 Laundries (Commercial) - RP

III.25 Medical Buildings and Clinics - RP

III.26 Metal Manufacturing, Cleaning, Processing, or Fabricating Plants - RP

III.27 Morgues - RP

III.28 Mortuaries - RP

III.29 Multiple Services - Includes two or more interconnected, or "looped" services provided to a single customer premises - RP at each service connection

III.30 New services to buildings that are not designed or used solely for residential purposes, and where the degree of health hazard cannot be accurately and immediately surmised - RP

III.31 Nursing Homes and Clinics - RP

III.32 Oil/Gas Production, Storage or Transmission Facilities - RP

III.33 Ornamental fountains and Ponds with recirculating pumps where the District or department determines that a health hazard or potential health hazard exists - RP

III.34 Paper and Paper Products Manufacturing Plants - RP

III.35 Plastic Manufacturing, Extruding, and Injection Molding - RP
(see also Chemical Plants)

III.36 Plating Plants - RP

III.37 Portable Chemical Spray or Cleaning Equipment which can be connected to a public water system - AG

III.38 Private Wells - RP

III.39 Radioactive Materials or Substances - Plants or facilities that process, handle, or store radioactive materials or substances - RP

III.40 Recirculating Pumps where the District or Department determines that a health hazard or potential health hazard exists - RP

III.41 Recirculating Hot Water Systems - RP

III.42 Reclaimed Water Distribution Systems:

- a. Premises where the public water system of the District is used to supplement a reclaimed water system - AG
- b. Premises where reclaimed water is used and there is no interconnection with the District public water system - RP

III.43 Restricted, Classified, or Other Closed Facilities - RP

III.44 Rubber Manufacturing Plants - Natural or synthetic - RP

III.45 Sand and Gravel Plants - RP

III.46 Sanitariums - RP

III.47 Schools, Colleges, and Universities - RP when actual or potential health hazard exists on the premises, including but not limited to boilers, laboratories, or irrigation

III.48 Sewage and Storm Drain Facilities - AG

III.49 Sewer Flushing through manhole or clean-out - AG

III.50 Solar Heating systems:

- a. Solar collector system which contains any hazardous substance and where there is a direct make-up connection to the public water system – RP
- b. Service connection protection is not required for "once through" solar heating systems including, but not limited to, domestic hot water systems, so long as the District or the Department has no specific cause to believe that a danger of backflow or backsiphonage exists.

III.51 Steam Generating Facilities/Steam Boiler Plants - RP

III.52 Vehicle Washing Facilities - RP

III.53 Veterinary Clinics/Businesses - RP

III.54 Water Tank Trucks - AG

SECTION IV - INSTALLATION OF BACKFLOW PREVENTION ASSEMBLIES

Instances requiring installation of backflow prevention assemblies are outlined below. Once a required backflow assembly has been installed, it shall remain in service as long as the service connection continues to be used and shall remain subject to the provisions of this resolution. If, in a manner rendering use impossible and approved by the District, the service is physically capped at the District's source main or at the service connection meter, the customer will be

exempted from testing and may remove the existing backflow assembly on that service.

IV.1 NEW SERVICE CONNECTIONS - At the time an application for a new water service is made, or plans are received for a new development, the District will review the application or plan to determine the need for a backflow prevention assembly on the Customer's service. If a backflow prevention assembly is required, it shall be the Customer's responsibility, and expense, to provide for the installation of the assembly in accordance with District requirements.

Where required by the District, installation of a backflow prevention assembly shall be a condition of water service. If practical, as determined by the District, the required assembly shall be located within 5 feet of the service connection.

IV.2 EXISTING SERVICE CONNECTIONS WITHOUT BACKFLOW PREVENTION ASSEMBLIES - The District will inspect the premises of existing service connections and shall determine if the premise(s) require a backflow prevention assembly. If it is determined that a backflow prevention assembly is required, the installation of a backflow prevention assembly shall be a condition of continued water service.

If a Customer fails to provide for the installation of the backflow prevention assembly within a reasonable time limit set forth in a written notification from the District or Department, the District shall suspend water service to the premises being served until such time as the District's requirements have been satisfied. As a condition of resumption of service, the District shall be reimbursed for its costs associated with the suspension of service.

IV.3 EXISTING BACKFLOW PREVENTION ASSEMBLIES

Backflow prevention assemblies in service at the time of adoption of this Resolution which do not comply with the provisions of this Resolution may continue to remain in use until such time as the assembly is determined, through the required testing or other means, to be defective and necessitating repair, or until such time as the premises facilities are changed thereby dictating a higher degree of required protection.

Any such assembly that is determined to be defective and needing repair shall be replaced by an assembly that complies with the provisions of this Resolution.

If a Customer fails to provide for the replacement of the existing defective backflow prevention assembly within a reasonable time limit set forth in a

written notification from the District or Department, the District shall suspend water service to the premises being served until such time as the District's requirements have been satisfied. As a condition of resumption of service, the District shall be reimbursed for its costs associated with the suspension of service.

SECTION V - INSTALLATION REQUIREMENTS FOR BACKFLOW PREVENTION ASSEMBLIES

V.1 Air Gap Separation (AG):

- a. An air-gap separation shall be approved by the District and shall be located on the Customer's side of and as close to the service connection as is practicable, as determined by the District.
- b. All piping from the service connection to the receiving tank shall be above grade and visible unless otherwise approved by the District.
- c. There shall be no outlet, tee, tap, take-off or connection of any sort to or from the supply pipe line between the service connection and the air-gap separation.

V.2. Double Check Valve Backflow Prevention Assembly (DC):

- a. DC shall be installed above ground in a horizontal and level position, on the customer side of, and as close to, the service connection as is practicable, as determined by the District.
- b. DC shall be installed a minimum of twelve inches (12") above finished grade and not more than thirty-six inches (36") above finished grade as measured from the bottom of the assembly, and with a minimum of twelve inches (12") side clearance. In addition, these shall be readily accessible for maintenance and testing, as determined by the District or Department.
- c. There shall be no outlet, tee, tap, take-off, or connection of any sort to or from the supply pipe line between the service connection and the backflow prevention assembly, or to the assembly itself.

V.3 Reduced Pressure Principle Backflow Prevention Assembly:

- a. Reduced Pressure Principle Backflow Prevention Assembly (RP) shall be installed above ground, in a horizontal and level position on the customer side of, and as close to the service connection as is practicable, as determined by the District.

- b. The RP shall be installed a minimum of twelve inches (12") above finished grade and not more than thirty-six inches (36") above finished grade as measured from the bottom of the assembly, and with a minimum of twelve inches (12") side clearance. These assemblies shall be readily accessible for maintenance and testing, as determined by the District or Department.
- c. There shall be no outlet, tee, tap, take-off, or connection of any sort to or from the supply pipe line between the service connection and the backflow prevention assembly, or to the assembly itself.
- d. RP shall be installed so that no part of the assembly will be submerged during normal operating and weather conditions, as determined by the District or Department.

SECTION VI - APPROVAL OF BACKFLOW PREVENTION ASSEMBLIES

All backflow prevention assemblies must be approved by the District prior to installation. The District's LIST OF APPROVED BACKFLOW PREVENTION ASSEMBLIES is identical to that list provided by the Department. This list includes, but is not necessarily limited to, the current list of approved backflow prevention assemblies as formulated by the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research.

The District or Department may approve any backflow prevention assembly that has been investigated and evaluated by an approved testing laboratory. An approved testing laboratory is defined as follows:

A person or entity that is competent and possesses the necessary facilities, as determined by the District or Department, to investigate and evaluate backflow prevention assemblies and is independent of backflow prevention assembly manufacturers.

Investigation and evaluation of backflow prevention assemblies shall include design and materials specifications, laboratory testing and field evaluation, as delineated in the current edition of the "Manual of Cross-Connection Control", published by the University of Southern California Foundation for Cross Connection Control and Hydraulic Research.

SECTION VII - CUSTOMER RESPONSIBILITY

The Customer owns the backflow prevention assembly. It is the responsibility of the Customer to furnish and install in a manner approved by the

District and by the County of Sacramento, and keep in good working order and safe condition, any and all backflow prevention assemblies as required by this Resolution. The District is not be responsible for any loss or damage directly or indirectly resulting from any cause.

If a backflow prevention assembly is removed for any reason, the Customer shall provide an approved backflow prevention assembly in its place. This assembly shall be tested by a certified backflow prevention assembly tester before water service is resumed.

SECTION VIII - AUTHORITY TO INSPECT

The Customer's premises, including access to any facilities and pertinent records, shall be available for inspection at all reasonable times to authorized representatives of the District and Department to determine if protection of the public water system is required. This accessibility shall be a condition for receiving water service.

SECTION IX - TESTING AND REPORTS

IX.1 Customers on whose premises testable backflow prevention assemblies are being installed or are in place shall have all such assemblies tested at the time of installation and annually thereafter, *or more often as required by the District or the Department*. All such tests shall be conducted at the expense of the Customer by a certified backflow prevention assembly tester. Backflow prevention assemblies shall be repaired or replaced according to the provisions of this resolution by the customer at customer expense whenever they are found to be defective.

IX.2 When a backflow prevention assembly is tested and fails the testing procedure, the certified tester shall affix a "failed" tag to the assembly. The Customer is allowed to make arrangements to have the assembly cleaned and retested. However, any repair work that would involve the replacement of internal parts is not allowed unless approved by the District or Department, which may instead require the Customer to upgrade or replace the existing assembly.

IX.3 Reports of tests of backflow prevention assemblies shall be filed with the District and the Department within twenty (20) days after tests are conducted. Only those reports from persons who possess a valid certificate of competence as issued by the Department will be accepted.

SECTION X - ENFORCEMENT

The District and its authorized representatives have the authority to enforce this Resolution. Any customer who violates any of the provisions of this Resolution, or later bypasses or renders inoperative any backflow prevention assembly installed under the provisions of this Resolution, is subject to discontinuance of water service.

The District or Department shall send an initial notice, in writing, requesting that the customer comply with backflow prevention requirements. The customer will be granted 60 days or less, as determined by the District and depending on circumstances, to comply with the requirements. If the customer fails to comply within the period specified by the District, the District will send a follow-up letter to the customer stating the customer must comply with provisions of this Resolution within 15 days (or less, as determined by the District and depending on circumstances), or face termination of water service. If the customer yet fails to comply within the period specified by the District, the customer shall be issued a notice that their water service shall be terminated in 24 hours (or less, as determined by the District and depending on circumstances). When termination occurs, water service shall not again be rendered until such violations have been corrected as verified by the District and the District recovers its costs from the customer related to the customer's non-compliance with provisions of this Resolution.

Passed and adopted by the Board of Directors of the Fair Oaks Water District this 23rd day of July, 1997 by the following vote:

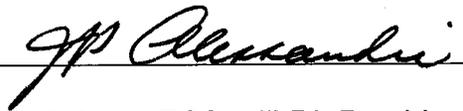
AYES: Directors Brown, Walker, Alessandri, and Hafar

NOES: None

ABSTAIN: None

ABSENT: Director Hoag




JOSEPH ALESSANDRI, President
Board of Directors
Fair Oaks Water District

ATTEST:


Richard Plecker
General Manager