PREPARED BY:

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Milpitas

CITY OF MILPITAS

CROSS-CONNECTION CONTROL PLAN

IN ACCORDANCE WITH THE CROSS-CONNECTION CONTROL POLICY HANDBOOK ADOPTED IN 2024

JUNE 2025

Cross-Connection Control Plan

Prepared for

City of Milpitas

Project No. 270-A1-23-21

Version Number: 1

I certify that the information submitted in this Cross-Connection Control Plan is accurate and drafted to be in compliance with the Cross-Connection Control Policy Handbook, and is informed by discussions with the Public Water System.

Signed by:
Christian Di Renzo
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Jun-16-2025

Public Water System Representative
Christian Di Renzo, Public Works Director

Date

June 16, 2025

Prepared by: Courtney Rubin
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LIST OF ACRONYMS AND ABBREVIATIONS

AG	Air Gap
AMI	Advanced Metering Infrastructure
ANSI	American National Standards Institute
BPA	Backflow Prevention Assembly
CCCP	Cross-Connection Control Plan
CCCPH	Cross-Connection Control Policy Handbook
City	City of Milpitas
CO	City Ordinance
DC	Double Check Valve Backflow Prevention Assembly
DCDA	Double Check Detector Backflow Prevention Assembly
DCDA-II	Double Check Detector Backflow Prevention Assembly – Type II
DDW	Division of Drinking Water
ERP	Emergency Response Plan
FY	Fiscal Year
Program	City of Milpitas Cross-Connection Control Program
PVB	Pressure Vacuum Breaker Backflow Prevention Assembly
PWS	Public Water System
RP	Reduced Pressure Principle Backflow Prevention Assembly
RPDA	Reduced Pressure Principle Detector Backflow Prevention Assembly
RPDA-II	Backflow Prevention Assembly – Type II Recycled Water
SBWR	South Bay Water Recycling
SVB	Spill-Resistant Pressure Vacuum Breaker Back siphonage Prevention Assembly
Swivel-Ell	Swivel-Ell Backflow Prevention Assembly
SWRCB	State Water Resource Control Board
Worker	Utility Maintenance Worker

1.0 CROSS-CONNECTION CONTROL PLAN

1.1 Introduction

The State Water Resources Control Board (SWRCB) adopted the Cross-Connection Control Policy Handbook (CCCPH) on December 19, 2023. The effective date for the CCCPH is July 1, 2024, replacing the previous regulations covered under Title 17, Chapter V, Sections 7583-7622 under California Code of Regulations (Title 17). The 2023 adopted version of the CCCPH is included in Appendix A of this document. Title 17 became inoperative and repealed 90 days after July 1, 2024. The CCCPH expands on the previous Title 17 requirements for initial and follow-up hazard assessments, training, backflow prevention testing and certification, maintenance of records, incident response, reporting and notification, public outreach and education, and local entity coordination. The CCCPH requires any public water system (PWS) to develop a Cross-Connection Control Plan (CCCP) to describe how the PWS will manage and administer their Cross-Connection Control Program (Program).

1.2 Purpose

The intent of this document is to describe the Program implemented and administered by the City of Milpitas (City). The purpose of this CCCP is to protect the health of the water customers by:

1. Proper installation and maintenance of backflow preventers on services to premises where actual or potential cross-connections exist. The presence of backflow preventers is intended to prevent the backflow or back-siphonage of contaminants or pollutants from a customer's premises into the PWS.
2. Promoting the elimination of existing or future cross-connections through inspection and regulation of plumbing and water piping within or between a customer's premises and the PWS.

1.3 City of Milpitas Service Area

The City is a public community water system managed by the City government and overseen by an elected City Council. The City owns and maintains the public water system, sewer collection system, and stormwater system. The PWS includes five reservoirs and four pump stations. The City is a recycled water retailer from South Bay Water Recycling. The City maintains about 183 miles of potable mains and 24 miles of recycled water mains. At the writing of this plan, there are 15,362 potable water services and 255 recycled water services. The breakdown of potable water services is 12,442 single-family homes, 121 multi-family homes, 709 commercial/institutional, and 290 industrial.

2.0 DEFINITIONS

The following definitions describe terms and phrases pertinent to the various elements of this CCCP. The definitions presented in this section are divided into three groups, within which each definition is listed alphabetically: 1) Water and Water System Definitions; 2) Agencies/Personnel; and 3) Equipment Definitions.

2.1 Water and Water System Definitions

Air Gap Separation (AG)

The term "air gap separation" shall mean a physical break between the free-flowing discharge end of a potable water supply pipeline and an open or non-pressure receiving vessel. An "approved air gap separation" shall be at least twice the diameter of the supply pipe measured vertically above the overflow rim of the vessel, in no case less than 1-inch.

Approved Water Supply

A water source that has been approved by the SWRCB for domestic use in a PWS and designated as such in a domestic water supply permit.

Auxiliary Water Supply

A source of water, other than an approved water supply, that is either used or equipped or can be equipped to be used as a water supply, and is located on the premises of, or available to, a water customer.

Backflow

The undesirable flow of water or other liquids, gases, mixtures, or substances, under pressure, into the distributing pipes of a potable supply of water from any source other than an approved water supply. Back-siphonage or backpressure are the two conditions that cause backflow to occur.

City Water System

The City water system consists of the source facilities and distribution system under the control of the City water utilities department up to and including water meters. The City water system may also be referred to as the public water system or the distribution system.

Contamination/Contaminant

Any impairment of the quality of the potable water by sewage, industrial fluids or waste liquids, compounds or other materials to a degree that creates an actual hazard to the public health through poisoning or through the spread of disease.

Cross-Connection

Any actual or potential connection or structural arrangement between a PWS, including a piping system connected to the PWS and located on the premises of a water customer or available to the water customer, and any source or distribution system containing liquid, gas, or other substances not from an approved water supply.

Customer's Water System

All facilities beyond the water meter. The customer's system or systems may include both potable and non-potable water systems.

Distribution System

Shall include the network of conduits used for the delivery of water from the source to the customer's water system. See also City Water System.

Hazard, Degree of

A hazard assessment must identify the degree of hazard (or no hazard) to the City's distribution system through evaluation of customer premises based on the following classifications:

High Hazard Cross-Connection

A cross-connection that poses a significant threat to the potability or safety of the public water supply. Materials entering the public water supply through a high hazard cross-connection are contaminants or health hazards.

Low Hazard Cross-Connection

A cross-connection that has been found to not pose a significant threat to the potability or safety of the public water supply but may adversely affect the aesthetic quality of the potable water supply. Materials entering the public water supply through a low hazard cross-connection are pollutants or non-health hazards.

No Hazard Cross-Connection

A cross-connection that poses no hazard to potability or safety of the public water supply.

Isolation

Otherwise known as Internal Protection. The appropriate type or method of backflow prevention within the customer's potable water system at the point of use, commensurate with the degree of hazard.

Pollution/Pollutant

The presence of any foreign substance (organic, inorganic, or biological) in water that tends to degrade its quality to constitute a hazard or to impair the usefulness or quality of the water to a degree that does not create an actual hazard to public health, but which does adversely and unreasonably affect such waters for domestic use.

Premises

All areas on a customer's property that are served or have the potential to be served by the PWS.

Premises Containment

Protection of a PWS distribution system from backflow from a customer's premises through the installation of one or more air gaps or backflow prevention assemblies, installed as close as practical to the customer's service connection at the water meter, in a manner that isolates the water customer's water supply from the PWS distribution system.

Public Water System (PWS)

A system for the provision of piped water to the public for human consumption, which has five or more service connections or regularly serves an average of 25 individuals daily at least 60 days per year. Additionally, a PWS consists of the source facilities and the distribution system and shall include all those facilities of the water system under the complete control of the City up to the point of the service connection at the water meter to the customer's water system.

Recycled Water

Wastewater that is suitable for uses other than potable use due to appropriate levels of treatment. For the City, tertiary treated recycled water is available through South Bay Water Recycling (SBWR).

Service Connection

The point where a water customer's piping is connected to the PWS or the point in the customer's water system where the PWS can be protected from backflow using an AG or a BPA. Typically, this location is immediately after the water meter.

Used Water

Any water supplied by the City from the PWS to a customer's water system after it has passed through the service connection at the water meter and is no longer under the control of the City.

Water System

The water system shall be considered as made up of two parts: The PWS and the customer's water system.

2.2 Agencies/Personnel

Backflow Prevention Assembly Tester

A person who is certified as a Backflow Prevention Assembly Tester pursuant to Section 4 of this CCCP. A certified Backflow Prevention Assembly Tester is authorized to test backflow prevention assemblies at customer premises.

Cross-Connection Control Program Coordinator

The designated individual, under the guidance of the Public Works Division Manager- Engineering, that is involved in the development of and being responsible for reporting, tracking, and other administration duties for the CCCP. This person must hold a Cross-Connection Control Specialist Certification.

Cross-Connection Control Specialist

A person who is certified as a Cross-Connection Control Specialist pursuant to Section 4 of this CCCP. A certified Cross-Connection Control Specialist must obtain a Backflow Prevention Assembly Tester Certificate prior to becoming a Cross-Connection Control Specialist. Only a Cross-Connection Control Specialist is authorized to assess the hazard level present at customer premises. A Cross-Connection Control Specialist that maintains a Backflow Prevention Assembly Tester certificate is also able test backflow prevention assemblies.

State Water Resources Control Board

Unless otherwise specified, means the SWRCB, Division of Drinking Water (DDW) or the local primacy agency having been delegated authority by the SWRCB to enforce the requirements of Chapter 3 of the CCCPH.

User Supervisor

A person designated by a water user to oversee a water use site and responsible for the avoidance of cross-connections.

Water Supplier

The person who owns or operates the approved water supply system. The City owns and operates the public community water system and is the Water Supplier.

Water Customer

Any person or entity obtaining water from an approved water supply system.

2.3 Equipment Definitions

Backflow Prevention Assembly (BPA)

A generic term referencing multiple types of mechanical assembly designed and constructed to prevent backflow, such that while in-line it can be repaired and its ability to prevent backflow, as designed, can be field tested, inspected, and evaluated. The assembly must have passed laboratory and field evaluation tests performed by a recognized testing organization that has demonstrated its competency to the SWRCB, Division of Drinking Water.

Double Check Detector Backflow Prevention Assembly (DCDA)

A double check valve backflow prevention assembly that includes a bypass with a water meter and double check backflow prevention assembly, with the bypass water meter accurately registering flow rates up to two gallons per minute and visually indicating all rates of flow. This type of assembly may only be used for protection from back-siphonage and backpressure events (low hazard connection). These devices are not allowed for new installations unless approved by the City Engineer.

Double Check Detector Backflow Prevention Assembly – Type II (DCDA-II)

A double check valve backflow prevention assembly that includes a bypass around the second check, with the bypass having a single check valve and a water meter accurately registering flow rates up to two gallons per minute and visually indicating all rates of flow. This type of assembly may only be used for protection from back-siphonage and backpressure events (low hazard cross-connection). These devices are not allowed for new installations unless approved by the City Engineer. Double Check Valve Backflow Prevention Assembly (DC)

An assembly consisting of two independently acting internally-loaded check valves, with tightly closing shut-off valves located at each end of the assembly (upstream and downstream of the two check valves) and fitted with test cocks that enable accurate field testing of the assembly. This type of assembly may only be used for protection from back-siphonage and backpressure events (low hazard cross-connection). These devices are not allowed for new installations unless approved by the City Engineer.

Pressure Vacuum Breaker Backflow Prevention Assembly (PVB)

An assembly with an independently-acting internally-loaded check valve and an independently-acting loaded air inlet valve located on the discharge side of the check valve; with test cocks and tightly closing shutoff valves located at each end of the assembly that enable accurate field testing of the assembly. This type of assembly may only be used for protection from back siphonage (low hazard and high hazard cross-connection) events and is not to be used to protect from backpressure events. These devices are not allowed for new installations unless approved by the City Engineer.

Reduced Pressure Principle Backflow Prevention Assembly (RP)

An assembly with two independently acting internally-loaded check valves, with a hydraulically operating, mechanically independent differential-pressure relief valve located between the check valves and below the upstream check valve. The assembly shall have shut-off valves located upstream and downstream of the two check valves, and test cocks to enable accurate field testing of the assembly. This type of assembly may be used for protection from back siphonage and backpressure events (low hazard and high hazard cross-connection). To be approved these assemblies must be accessible for in-line maintenance and testing and be installed per City Standards. A schematic of this assembly is provided in Appendix D.

Reduced Pressure Principle Detector Backflow Prevention Assembly (RPDA)

A reduced pressure principle backflow prevention assembly that includes a bypass with a water meter and reduced pressure principle backflow prevention assembly, with the bypass water meter accurately registering flow rates up to two gallons per minute and visually indicating all rates of flow. This type of assembly may be used for protection from back-siphonage and backpressure events (low hazard and high hazard cross-connection). To be approved these assemblies must be accessible for in-line maintenance and testing and be installed per City Standards. A schematic of this assembly is provided in Appendix D.

Reduced Pressure Principle Detector Backflow Prevention Assembly – Type II (RPDA-II)

A reduced pressure principle backflow prevention assembly that includes a bypass around the second check, with the bypass having a single check valve and a water meter accurately registering flow rates up to two gallons per minute and visually indicating all rates of flow. This type of assembly may be used for protection from back siphonage and backpressure events (low hazard and high hazard cross-connection). To be approved these assemblies must be accessible for in-line maintenance and testing and be installed per City Standards. A schematic of this assembly is provided in Appendix D.

Spill-Resistant Pressure Vacuum Breaker Backsiphonage Prevention Assembly (SVB)

An assembly with an independently-acting internally-loaded check valve and an independently-acting loaded air inlet valve located on the discharge side of the check valve; with shutoff valves at each end and a test cock and bleed/vent port, to enable accurate field testing of the assembly. This type of assembly may only be used for protection from back siphonage events (low hazard-connection) and is not to be used to protect from backpressure events. These devices are not allowed for new installations.

Swivel-Ell Backflow Prevention Assembly (Swivel-Ell)

An assembly consisting of a reduced pressure principle backflow prevention assembly combined with a changeover piping configuration (swivel-ell connection) designed and constructed pursuant to Section 5 of this CCCP. These devices are not allowed for new installations.

3.0 CCCP ADMINISTRATION

This section describes the legal authority and administration of the CCCP.

3.1 Legal Authority (CCCPH 3.1.3 & CO Title VIII, Public Works, Chapter 3 VIII-3-1)

The City administers the Program in accordance with City Ordinance (CO), Title VIII, Public Works Chapter 3 – Backflow Prevention & cross-Connection Control. The original adoption was in 1988 in agreement with Title 17, Chapter V, Sections 7583-7622, California Code of Regulations. The CO will be amended in Fiscal Year (FY) 25-26 to include new elements presented in this CCCP and in compliance with CCCPH.

The CO includes the authority to implement corrective actions if a water customer fails to comply in a timely manner with provisions regarding the installation, inspection, field testing or maintenance of a BPA required by the CCCPH. Additional authority exists to eliminate existing or future cross-connections through inspection and regulation of plumbing and water piping within a customer's premises, PWS or between them. The City's corrective actions include the ability to discontinue water service until all violations or non-compliant conditions have been corrected.

The current Municipal Code is included in Appendix B.

3.2 CCCP Administration

The Program is administered within the City's Public Works Department by the Utilities Engineering Section. This Section is responsible for reporting on several regulatory programs involving water, wastewater, recycled water, and stormwater. Program administration includes cross-connection control reporting, backflow testing & hazard assessment notification, record keeping, and enforcement. For privately-owned BPA's the City typically requires the water customer to perform annual inspection/testing, initial hazard assessment and as-needed hazard assessment through a City prescribed process detailed in the CCCP. In FY24-25 the City conducted initial hazard assessments at high-hazard non-residential premises. City-owned BPA's have these services performed either by City staff or by City administered contract.

Figure 3-1 shows the current organizational chart for the Public Works Department Utilities Engineering Section. Additional Program activities spanning across other departments are discussed in more detail in Section 9 of this CCCP.

The Cross-Connection Specialist reports directly to the Public Works Division Manager - Engineering. The Specialist is responsible for carrying out the administrative responsibilities of the CCCP under the guidance of the Public Works Division Manager - Engineering. Additional- staff include Associate and Assistant Civil Engineers, as well as an Engineering Aide who is available to assist- with the administrative duties of the CCCP. Professional consultant and contract services are used as needed.

Public Works Call Center: 408-586-2600 – The Public Works Call Center is the City's emergency water phone number answered during normal business hours. For calls received during nonbusiness hours, the calls are automatically forwarded- to 911 police department dispatch. For all calls, the operator will dispatch calls to the correct personnel and department. The cross-connection Control Specialist or a designee on-call water operator will be notified as necessary to investigate a potential backflow event.

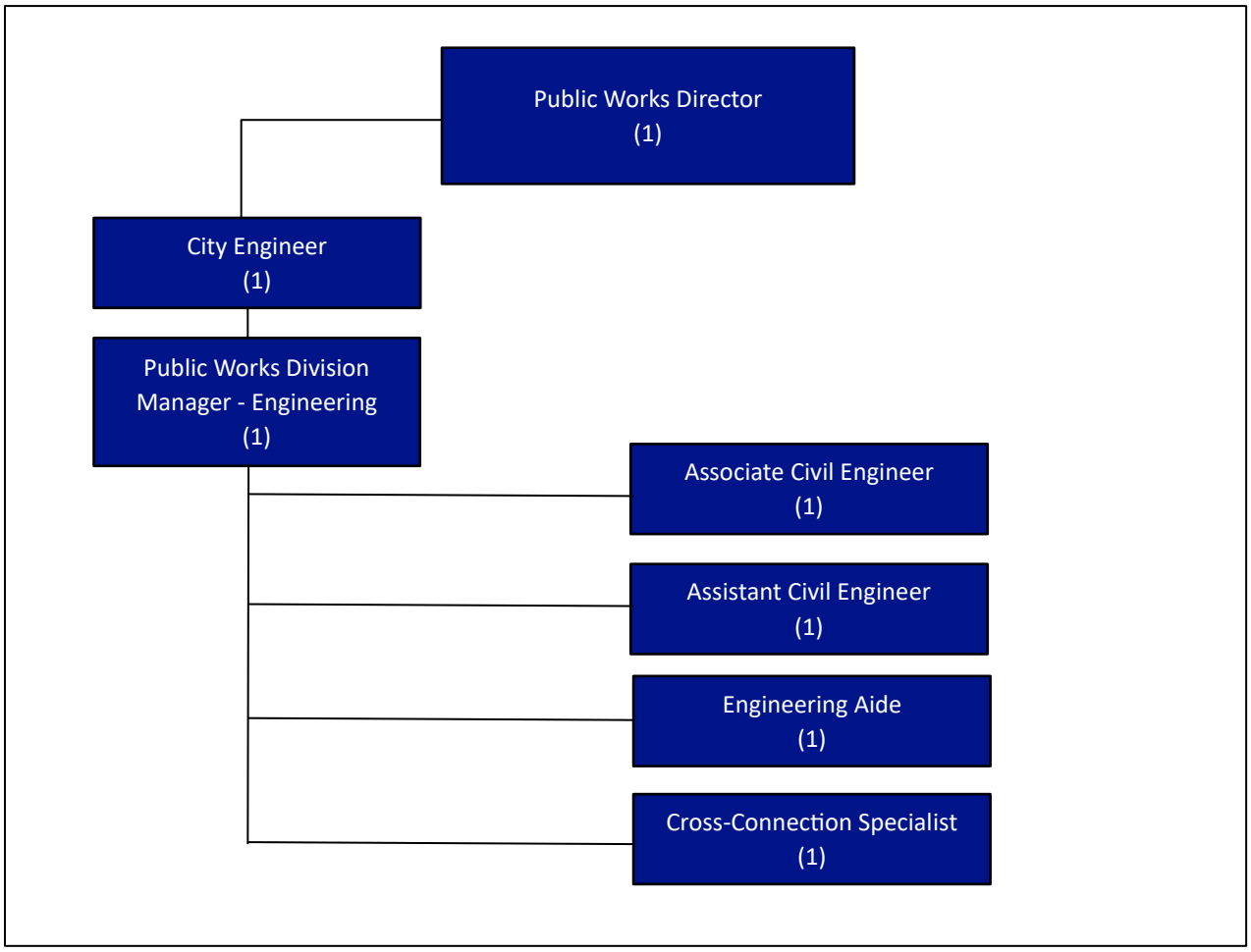

Figure 3-1. Current Organizational Chart for the Public Works Department Utilities Engineering Section

4.0 CERTIFICATION REQUIREMENTS

This section specifies the certification requirements for Backflow Prevention Assembly Testers and Cross-Connection Control Specialists.

4.1 Backflow Prevention Assembly Tester Certification Requirements

Chapter 3, Article 4 of the CCCPH provides the requirements of a SWRCB recognized and American National Standards Institute (ANSI) accredited organization certifying Backflow Prevention Assembly Testers. Within an accredited organization, the program must include provisions for revocation of a backflow prevention assembly testers certification and a publicly available list of certified backflow prevention assembly testers. Certification from an accredited organization requires completion of a program that includes the following:

- Timed and proctored written exams with prescribed number of test questions and covering specified material.
- Performance of a hands-on exam demonstrating proficiency in accurately determining the operating condition of an RP, DC, PVB, and SVB.
- Recertification no less frequently than every three years including both a written and performance exam.
- Prerequisite of either two years prior experience or completion of an instructional training course.

4.1.1 Approved Backflow Prevention Assembly Tester & Specialist Lists (CCCPH 3.4.1 & CO Title VIII Public Works Chapter 3.7.00)

The City maintains a list of testing companies who have Backflow Prevention Assembly Tester qualified to perform backflow related work within the City. This list is available on the City's Cross Connection Control and Backflow Prevention webpage and a link to the webpage is also included in the City's backflow testing requirement notification letter. The current list will remain active through November 2025.

Beginning in FY25-26, the City will require testing companies to annually submit applications as a Backflow Prevention Assembly Tester qualified to perform backflow related work and as a Cross-Connection Control Specialist qualified to perform hazard assessments. Companies will also be required to provide State contractor board licensing information indicating if licensed to perform work adjacent to BPA's (C-36 A or B, C-16 or D-64). Applications will be received from August 1st through September 30, 2025. The new lists will become active December 1, 2025, in advance of the FY25-26 annual testing cycle that will begin in June 2026.

The requirements to be listed as a City's qualified Backflow Prevention Assembly Testers are:

- The tester must hold a valid certification for backflow prevention assembly testing from a recognized certification organization.
- The tester company must annually re-apply and provide electronically, a copy of their certification and a copy of their tester gauge(s) calibration report results.
- The tester company must possess a current City of Milpitas business license.

- The tester company must provide proof of liability insurance in the form of a certificate of insurance in the amount of $1,000,000 naming the City of Milpitas, elected officials, employees, agents, and volunteers shall be included as insured.
- The tester must register and utilize the City's online platform for test report submissions. This platform is currently hosted by SwiftComply. The Sample Report can be found in Appendix C.

Beginning in FY25-26, backflow companies submitting applications as a Backflow Prevention Assembly Tester will be required to pay a fee as established in the City's Municipal Fee Schedule. The City will also require all non-residential customers with BPA's to annually submit who they have selected as a City qualified tester.

Backflow Prevention Assembly Testers and Cross-Connection Control Specialists are required to ensure that the City has the most recent copy of their certifications and tester gauge calibration reports. Both Backflow Prevention Assembly Testers and Cross-Connection Control Specialists are required to submit their qualifications.

Backflow Prevention Assembly Testers may be removed from the City's qualified lists if any of the following conditions apply:

- Expiration of tester certification
- Not maintaining a calibrated gauge
- Improperly testing or repairing assemblies
- Falsifying results or documents
- Failure to enter completed test reports online

4.2 Cross-Connection Control Specialist Certification Requirement (CCCPH 3.4.1 & CO Title VIII Public Works Chapter 3.7.00)

Cross-Connection Control Specialists that maintain their Backflow Prevention Assembly Tester certification can perform BPA inspection and testing in addition to conducting onsite hazard assessments.

Cross-Connection Control Specialists shall maintain valid certification from a certifying organization recognized by the SWRCB pursuant to CCCPH Chapter 3 Article 4. Certification requires completion of a program that includes the following:

- Timed and proctored written exams with prescribed number of test questions and covering specified material.
- Completion of an instructional training course.
- Recertification no less than every three years.
- Recertification through an exam, 12 contact hours of continuing education, or a combination of both.

Cross-Connection Control Specialist from the certifying organization must contain:

- Provisions for revocation of a specialist's certification.
- Publicly available list of certified specialists.
- For initial certification or when an examinee has not held a valid certification for three or more years, a valid backflow prevention assembly tester certification will be required as well as completion of an instructional training course.

Beginning in FY25-26, the City will require testing companies to annually submit applications to be considered qualified as a Cross-Connection Control Specialist.

The requirements to be listed as a City's qualified Cross-Connection Control Specialist are:

- All other requirements as required for the approved backflow tester.
- The specialist must hold a valid certification for Cross-Connection Specialist from a recognized certification organization.
- The specialist must register and utilize the City's online platform for hazard assessment report submissions.

Cross-Connection Control Specialists may be removed from the City's qualified lists for the same reasons as Backflow Prevention Assembly Testers may be removed.

Beginning in FY25-26, testing companies submitting applications to be a Cross-Connection Control Specialist will be required to pay a fee as established in the City's Municipal Fee Schedule. The City will also require all non-residential customers with BPA's to annually submit who they may have selected as a City qualified Cross-Connection Control Specialist.

5.0 CROSS-CONNECTION CONTROL PROTECTION REQUIREMENTS (CCCPH 3.2.2 & CO TITLE VIII PUBLIC WORKS CHAPTER 3.3.00)

Unprotected cross-connections with the PWS are prohibited. No water service connection to any premises shall be installed or maintained by the City unless the water supply is protected from contamination and pollution. Whenever backflow protection is found to be necessary, the City will require the water customer to install, test, and maintain an approved backflow prevention assembly at the expense of the water customer for continued water service or before a new water service will be granted.

CO Title VIII Chapter 3.04 allows customers with non-compliant assemblies (but were compliant at the time of installation), and which have been properly maintained, to not replace the assembly if the City Engineer is assured that the assembly will satisfactorily protect the PWS. If the City Engineer determines a replacement is required, the customer is provided up to 180 calendar days to comply.

CO Title VIII Chapter 3.06 provides customers up to 180 calendar days to install backflow protection where none exists.

Notices will provide 30 calendar days for compliance and through customer due diligence, extensions up to 150 calendar days may be allowed at the discretion of the City Engineer.

City owned devices that may be non-compliant or nonexistent will be made complaint in FY25-26.

Wherever backflow protection is found to be necessary on a water supply line entering a water customer's premises, then all water supply lines from the City's potable mains entering such premises, buildings, or structures shall be protected by an approved backflow prevention assembly.

The type of assembly to be installed will be in accordance with the requirements of this Chapter. If it is found that a backflow protection control or assembly has been removed or bypassed, water service will be discontinued until corrected, and fines may be imposed.

Topics addressed in this section include:

- Open for Inspection
- Approval of Assemblies
- Evaluation of Hazard
- Existing Customers – With a Non-Complying Device

5.1 Backflow Protection Requirements (CO Title VIII Public Works Chapter 3.4.00)

CO Title VIII Public Works Chapter 3.4.00 is scheduled for an amendment in FY25-26 to list approved backflow prevention assemblies. Pending this amendment, an approved backflow prevention assembly shall be installed per draft City standard details and be selected from the City’s list of approved backflow prevention assemblies. Draft standard details are included in Attachment D. Finalization of these details are expected in FY25-26.

Protection is required when the following conditions exist:

- When a premises contains an auxiliary water supply, the water supply to the premises shall be protected against backflow.
- When a premises has the potential for any onsite industrial fluid or any other objectional substance handled in such a manner that could permit the fluid or substance to enter the water system, the PWS shall be protected against backflow from the premises.
- When a premises has internal cross-connections that cannot be permanently corrected or controlled to the satisfaction of the state, local health department, or City Engineer, the PWS shall be protected against backflow.
- When a premises has intricate piping arrangements or where entry to all or portions of the site are restricted so that inspections for cross-connections cannot be made with sufficient frequency or at sufficiently short notice to assure that no cross-connection exist, the PWS shall be protected against backflow.
- When a premises has a history of repeated cross-connections being established or reestablished, the PWS shall be protected against backflow.

5.2 Determination of New Backflow Prevention Device (CO Title VIII Public Works Chapter 3.5.00)

A PWS must protect its water distribution system in accordance with the hazard present on a customer's premises. CO Title VIII Public Works Chapter VIII 3.5.00 will be amended in FY25-26. The type of backflow prevention device for new work will be amended and swivel-ell assemblies will be prohibited. Device protection implemented, but not specified in the CO, by customer type is shown in Table 5-1.

Table 5-1. Prescribed Protection by Customer Type

Customer Type	Minimum Backflow Assembly Type	Degree of Hazard
Irrigation services	RP	High
Commercial and industrial systems	RP	High
Commercial fire systems	RPDA	High/Low
Hillside residences where PVC piping is not used	RP	High
Residential properties with two or more units	RP	High
Low hazard fire services including single-family homes with fire sprinkler systems	RP	High/Low
Construction meters	RP	High

Unless specified otherwise, the City will protect its water distribution system from high hazard cross-connections pursuant to the example high hazard cross-connection control premises listed in Appendix D of the CCCPH, by way of premises containment, using one or more RP's.

Existing installations (including below ground) of SC, DC & DCDA backflow prevention device types will be considered acceptable provided the devices are serviceable and satisfactory to the City Engineer. Refer to Sections 5.3.3 through 5.3.7 for more detail.

5.2.1 Toxic, Sewage, or Hazardous Substances

1. Premises where toxic or hazardous substances are handled in any manner which may allow for contamination of the PWS shall be protected by an RP at the service connection.
2. Premises where the PWS is used to supplement the RW supply shall be protected by an Air Gap and/or an RP at the discretion of the City Engineer.
3. Premises where recycled water is used and there is no interconnection with the potable water system shall have a minimum protection type of an RP.
4. Premises where there are wastewater pumping and/or treatment plants and there is no interconnection with the potable water system shall have a minimum protection type of RP.

5.2.2 Auxiliary Water Supplies

Protection from auxiliary water supplies shall comply with the following:

1. On a premises where there is an unapproved auxiliary water supply that is interconnected with the PWS, an AG shall be used.
2. On a premises where there is an unapproved auxiliary water supply and there are no interconnections with the PWS, an RP shall be used.

5.2.3 Commercial Fire Systems

Protection from commercial fire systems shall be no less than a RPDA and comply with the following:

1. A high hazard cross-connection fire system, including but not limited to fire systems that may utilize chemical addition (e.g., anti-freeze) or an auxiliary water supply, must have no less than RPDA protection.
2. Premises where the fire system is directly supplied from the PWS and there is an unapproved auxiliary water supply on or to the premises (not interconnected) will use an RPDA.
3. Premises where the fire system is supplied from the PWS and where either elevated storage tanks or fire pumps which take suction from the private reservoirs or tanks are used will use a RPDA.
4. All fire service connections must receive at least the same level of protection on a premises.

5.2.4 Single-Family Residence Fire Systems

Low hazard fire systems on single-family residential customer premises will require an RP unless all the following five criteria are met:

1. The customer premises has only one service connection to the PWS;
2. A single service line onto the customer premises exists that subsequently splits on the property for domestic flow and fire protection system flow, such that the fire protection system may be isolated from the rest of the customer premises;
3. A single, water industry standard, water meter is provided to measure combined domestic flow and fire protection system flow;

4. The fire protection system is constructed of piping materials certified as meeting NSF/ANSI Standard 61; and
5. The fire protection system's piping is looped within the structure and is connected to one or more routinely used fixtures (such as a water closet) to prevent stagnant water.

5.2.5 Swivel-Ell Assemblies (CCCPH 3.2.2(d))

The City will not utilize swivel-ells for temporary potable water, as the City requires a permanent potable water backup for critical services using recycled water such as cooling towers or dual plumbed buildings.

5.3 Hazard Assessments (CCCPH Article 2, 3.2.1 & CO Title VIII Public Works Chapter 3.04-3.06)

CO Title VIII Public Works Chapter 3.04-3.06 will be amended in FY25-26 to ensure all backflow prevention assemblies comply with Table 5-1 and the adopted CCCPH.

A project was completed by the City in April 2025 to assess all high-hazard premises in the City (483 premise). A breakdown of the findings is as follows: 57 were adequate, 336 had in-line single-check fire underground backflow preventor, 45 had double check assemblies, 3 had RP's and 42 had no visible protection.

Notices advising of deficiencies have been sent out to 147 customers, (57) were advised that their assemblies were adequate; (45) were advised that their double check assemblies needed to be upgraded to an RP; (3) were advised that their RP required repair; and (42) were advised to install an RP. The remaining 336 customers with in-line single-check underground backflow preventors will receive notice at a future date to allow time for education and outreach prior to being informed that the preventor must be replaced by December 2033 per the CCCPH. A copy of the Notices is included in Appendix E.

For locations not assessed by the City, initial assessment of hazards on a customer's premises will be performed by a certified Cross-Connection Control Specialist per Section 4.2 hired by the customer. The purpose of assessment is to determine whether high, low, or no hazard are present. The required type of backflow prevention assembly at a customer's premises will be determined by the degree of hazard and observed water use. The observations and final determination of the required backflow prevention assembly will be included in a final report that will be uploaded by the Cross-Connection Control Specialists to an online City portal that can be accessed on the City's Cross Connection Control and Backflow Prevention webpage.

The notice to complete initial assessments and the requirements of the assessment have been included in the annual test notices that were mailed the in June 2025. High-hazard premises previously assessed by the City were not required to complete another assessment. These notices were mailed to all non-residential customers. A copy of the letter being sent in 2025 for initial hazard assessments is included in Appendix F.

Note: City owned devices (210) will have assessments completed in FY25-26. City owned recycled devices (60) are not scheduled for assessment.

5.3.1 Access for Inspection (CO Title VIII Public Works Chapter 3-3.02)

The customer's water system shall always be accessible for inspection to an authorized representative of the City to assess whether a cross-connection or hazard exists. When an imminent hazard to public health or safety becomes known, the City may deny or immediately discontinue water service to the premises until the customer has corrected the condition to the satisfaction of the City.

5.3.2 New Construction

The City evaluates all new water supply requests through review of plans and specifications submitted to the City to assess backflow protection requirements.

If a BPA is required, the City may require the customer to have a Cross-Connection Control Specialist (per Section 4.2) complete an initial hazard assessment. Installation, testing and upload of hazard results to the online City portal are required and test results to the online platform are also required prior to granting water service. Refer in part to Section 3.3.3(a) of the CCCPH.

5.3.3 Initial Hazard Assessment (CCCPH Article 2, 3.2.1)

All non-residential customers (except the 483 high-hazard premises already assessed by the City) are required to have an evaluation performed by a certified Cross-Connection- Control Specialist hired by the customer for the potential of backflow into the PWS through an initial hazard assessment. The assessment will consider the following items:

The existence of cross-connections:

1. The type and use of materials handled and present, or likely to be, on the customer premises
2. The degree of piping system complexity and accessibility
3. Access to auxiliary water supplies, pumping systems, or pressure systems
4. Distribution system conditions that increase the likelihood or a backflow event
5. Customer premises accessibility
6. Any previous backflow incidents on the customer premises
7. The requirements and information provided in the CCCPH

All non-residential customer's Cross-Connection Prevention Specialist selected per Section 4.2 will perform the initial assessment using a combination of the following actions:

1. Review of building permits
2. Review of as-built or record drawings
3. Review of customer classification
4. Consideration of the date of construction
5. Cross referencing of billing records with known backflow assemblies
6. Field inspections
7. Review of Google maps and aerial photos
8. Reporting from backflow assembly testers

The due date for non-residential customers that have not had their initial assessment completed by the City is to submit their initial assessment by September 1, 2025. An extension up to 60 days may occur as necessary.

The due date for residential customers with known auxiliary wells, graywater systems, and/or pools to have assessments completed will occur no later than FY26-27. Customer self-reporting forms and other tools such as a satellite photography may be used.

Assessments for recycled water customers will not be required. Customers of the recycled water system are assessed through the SBWR permitting process.

5.3.4 Follow Up Hazard Assessments

Unless protection is provided by an RP, and unless the RP continues to successfully pass the annual tests, the customer's Cross-Connection Control Specialist selected per Section 4.2 will perform subsequent assessments under the following criteria:

1. If a customer's premises changes ownership, excluding single-family residences
2. If a customer's premises is newly connected to the PWS
3. If evidence exists of potential changes in the activities or materials on a customer's premises
4. If backflow from a customer's premises occurs
5. If the SWRCB requests a hazard assessment of a customer's premises
6. If the City concludes an existing hazard assessment may no longer be correct

Notification to the customer of this requirement will be in each annual test notice. Additionally, internal City coordination will occur between the Planning and Finance Departments with the Water Engineering Section to monitor changes in business licenses and permit applications.

Follow up hazard assessments require the Cross-Connection Control Specialist to have hazard results uploaded to the online City portal managed by the City's Cross-Connection Specialist.

5.3.5 Hazard Assessment Outcomes (CO Title VIII Public Works Chapter 3.04 & 3.06)

Following completion of either initial hazard assessments or subsequent assessments completed by the certified Cross-Connection Control Specialist selected per Section 4.2, the customer may need to address various outcomes related to backflow protection as further described below.

5.3.6 Non-Complying Assembly

Existing non-residential backflow prevention assemblies that do not meet the requirements (per the amended CO Title VIII Public Works Chapter 3.04 & 3.06 and as set forth in the CCCPH) will be required to either repair or replace the backflow prevention assembly to meet the requirements. This will occur for both high hazard locations assessed by the City and customer completed assessments.

City assessed high-hazard locations with non-complying assemblies have been divided into two groups based on CCCHP requirements – 1) Existing fire services with non-testable, below-grade, single-check; and 2) All other services that require repair or replacement. The first group will be required to upgrade to an RP by December 2033 per the CCCPH allowed time, while the second group will be required to complete improvements within 180 calendar days of the notice.

Customer completed initial hazard assessments with non-complying devices will be required to repair or replace- within 180 calendar days of notice.

Notices received by customers that have up to 180 calendar days to comply will initially be provided 30 calendar days to comply and through customer due diligence, extensions up to 150 calendar days will be provided.

5.3.7 Without an Assembly

All non-residential customers and premises (except the 483 high-hazard premises already assessed by the City) existing prior to the adoption of the CCCPH are required to have an initial hazard assessment completed by the certified Cross-Connection Control Specialist selected per Section 4.2. Upon upload of this information to the City portal, if it is determined that a premises requires backflow prevention, the City will provide a written notice to the customer to install an approved backflow prevention assembly within 180 calendar days or the City will discontinue water service. Notices received by customers will initially provide 30 calendar days for the installation and through customer due diligence, extensions up to 150 calendar days will be provided.

5.3.8 Non-Residential Fire Sprinkler Systems

Commercial and industrial premises with sprinkler systems have varying hazard levels depending on the class of fire sprinkler system (Class 1, 2, 3, or 4). Whether a fire system uses water only, chemical agents, fire suppression substances or is equipped with a Fire Department connection all new installations and/or replacements will require the installation of an RPDA unless determined otherwise by the City Engineer. The City will know all premises that may require installation of a backflow prevention assembly through its completion of initial hazard assessments for high-hazard customers and by other customers required to submit their assessments by September 1, 2025. High- hazard customers included in the City conducted initial assessment will need to upgrade to an RP by December 2033, per the CCCPH allowed time. Customers receiving notices in June 2025 will also have up to 180 calendar days after receipt of notice to complete their required improvements. Notices received by customers will initially provide 30 calendar days for the installation and through customer due diligence, extensions up to 150 calendar days will be provided.

5.3.9 Residential Fire Sprinkler Systems

Single-family and multi-family homes with sprinkler systems typically have a low hazard level. These systems will require the installation of an RP unless determined otherwise by the City Engineer. Hazard assessments of these residential systems are not scheduled, instead administrative tools including, but not limited to, permitting information will be used. In FY25-26 coordination will occur among the Utility Engineering Section, Building, Fire and Finance to determine the number of locations and addresses of residential units with fire sprinkler systems. Once this is complete, public education/outreach will occur prior to notices sent out requiring an assessment. Once the assessment results are known, a timeline to achieve compliance will be set prior to December 2033 per the CCCPH allowed time.

5.3.10 Recycled Water Systems

The approximately 255 recycled water services in the City serve industrial, commercial and multi-family residential. Three services serve industrial processes, and the remaining services serve irrigation only. Many of these services have BPA's as required by SBWR at time of installation, however it is known that some recycled water services did not require a BPA at time of installation by SBWR. There currently are no dual-plumbed facilities in the City.

Beginning in FY25-26, new recycled water service customers will be required by the City to have an RP, unless determined otherwise by the City Engineer, included in their application prior to the City submitting the customer application and plans to SBWR for further review and approval.

Existing recycled water customers without an RP will be required to install an RP, unless determined otherwise by the City Engineer, no later than December 2033.

6.0 BACKFLOW PREVENTION ASSEMBLIES (CCCPH ARTICLE 3)

This section provides a description of approved backflow prevention assemblies and of backflow prevention assembly installation requirements.

6.1 Approved Backflow Prevention Assemblies (CCCPH 3.3.1 & CO Title VIII Public Works Chapter 3.03)

Only approved backflow prevention assemblies will be allowed for new installation by a water customer to protect the PWS. Approved backflow preventors, which may be subjected to back-pressure or back siphonage, must be fully tested and granted a certificate of approval by a certified laboratory. The City will provide, upon request, to any water customer required to install a backflow preventer, the City's standard detail that notes approved backflow prevention assemblies.

Approved backflow prevention assemblies must have passed both laboratory and field evaluation tests in accordance with standards found in any of the following:

- The latest edition of the Foundation for Cross-Connection Control and Hydraulic Research of the University of Southern California Manual of Cross-Connection Control;
- The certification requirements for backflow prevention assemblies in the Standards of ASSE International current as of 2020; or
- An equivalent testing organization approved by the SWRCB.

Additionally, only backflow prevention assemblies noted in the City's standard detail will be allowed for new installation. Backflow prevention assemblies must not be modified from the configuration granted approval. Backflow Prevention Assembly Testers are required to notify the City if a water customer or City-owned backflow prevention assembly has been modified.

6.2 Installation Requirements (CCCPH 3.3.2 and CO Title VIII Public Works Chapter 3.6.00)

Backflow prevention assemblies shall be installed by the customer on the customer's water service side according to City standard details and prior to issuance of a final occupancy permit for new water services. The backflow prevention assemblies shall be installed in a manner prescribed in the CCCPH and as close as practical to the customer's service connection on the customer's premises for containment. The City shall provide final authority in determining the required location. If internal protection installed as isolation protection and further proposed for the purpose of containment, the City must be able to access the customer's premises and ensure that the on-site protections meet the requirements of the CCCPH. All backflow prevention assemblies shall be readily accessible for field testing and maintenance. Requirements for the specific elements of backflow prevention assemblies are described in the following subsections.

6.2.1 Air Gap Separation (AG)

The approved AG is to be installed on the customer's premises at the water customer's service connection and in accordance with CCCPH requirements. The received water container must be located on the water customer's premises at the water customer's service connection. Alternate locations must be approved by the City. All piping between the water customer's service connection and the discharge location of the receiving water container must be above grade and accessible for visual inspection. If installed at the customer service connection, the air gap must be approved by the SWRCB prior to installation. The water inlet piping shall terminate a distance of at least two pipe diameters of the supply inlet, but in no case less than one inch above the overflow rim of the receiving tank.

6.2.2 Reduced Pressure Principle Backflow Prevention Assembly (RP)

The approved RP assembly shall be installed on the customer's side of and as close to the service connection as is practical. The assembly shall be installed such that the lowest point of the assembly is a minimum of 12 inches above the finished grade and not more than 18 inches above grade measured from the bottom of the assembly and with a minimum of 12 inches side clearance, unless an alternative is approved by the City. However, a minimum side clearance of 24 inches must be provided on the side of the assembly that contains the test cocks. The assembly should be installed so that it is readily accessible for maintenance and testing.

The same space requirements may be applied to RPDAs.

6.2.3 Double Check Valve Backflow Prevention Assembly (DC) and Pressure Vacuum Breaker Backflow Prevention Assembly (PVA)

Unless authorized by the City Engineer, double check valve backflow prevention assemblies and pressure vacuum breaker backflow prevention assemblies will not be approved. All new applications shall be RP & RPDA.

Existing applications of DC, DCDA, PVA backflow prevention device types will be considered acceptable if they are serviceable.

7.0 TESTING AND MAINTENANCE OF BACKFLOW PREVENTION ASSEMBLIES (CCCPH 3.3.3 AND CO TITLE VIII PUBLIC WORKS CHAPTER 3-7)

This section outlines the testing and maintenance of backflow prevention assemblies and notification procedures followed by the City.

7.1 Testing

7.1.1 Frequency of Testing

The City requires all backflow prevention assemblies with active water services to be field tested upon installation, repair, overhauled, replaced or when relocated/removed, and whenever an assembly is depressurized which include all procedures/work listed in this section. Thereafter, the City requires backflow prevention assemblies to be field tested at a minimum of at least once annually by a certified Backflow Prevention Assembly Tester acceptable to the City as described in Section 4.1.1. Prior to the City approving a Water Service Agreement, the City must receive a passing set of backflow prevention assembly test results for the given backflow prevention assembly. For water services that have been suspended, the City will require a backflow assembly test upon initiation of the water service.

The City, at its discretion, may require more frequent testing intervals or inspections than the annual requirement. AG installations providing protection at the water service, and swivel-ell installations, will be inspected annually to ensure compliance. Currently, the City does not have any AGs within the City to inspect.

7.1.2 Procedures for Submitting Test Results

Testing results shall be submitted to the City on a City approved backflow assembly form in electronic format, submitted through an online platform currently supported by SwiftComply. Backflow Prevention Assembly Testers shall use the most current approved testing procedures. All backflow assembly testing is to be at the expense of the owner. Backflow assembly tests are performed by qualified testers retained by the customer.

7.1.3 New Installation

A passing field test must be received for all newly installed backflow prevention assemblies providing containment protection before water service can be provided. Newly installed assemblies or air gaps must be inspected for compliance with the CCCP and confirm successful passing of the assembly performance test.

7.1.4 Failed Test

Assemblies that fail the field test shall be repaired, overhauled, or replaced and then re-tested immediately. Upon receipt of a failed test report, the City will send a notification requiring that the backflow to be repaired or that a new assembly shall be installed immediately. All repairs and replacements shall be submitted to the City as complete within 30 days of notification. If additional time is needed, the customer may request consideration of an extension from the City.

7.2 Notification Process

It is the responsibility of the customer to ensure that all premises with a backflow prevention assembly receive a passing field test at a minimum of at least once, annually. In FY 24-25, customers with a backflow prevention assembly will receive a first notification notice the first week of June each calendar year providing sixty (60 days to hire a certified backflow assembly tester to perform a field test and submit a test report on the condition of the backflow assembly. If a test report is not received, a second notice will be sent on August 15th providing 45 days to have the assembly tested. In cases where a backflow assembly test has still not been received, a third notification notice will be sent with a 30-day compliance deadline. The City's goal is to work with customers to ensure timely backflow testing. Property owner/water customer communication and correspondence is documented by the City to establish a communication trail.

In situations where no action is taken by the backflow assembly owner after the third notice has been sent, the City will send an additional notice on October 1st that provides a five-day period for the customer to contact the City and advise of customer arrangements for the backflow assembly to be tested within 30 days. If testing does not occur within the 30 days, the water service will be terminated.

At the discretion of the City, a City's Backflow Prevention Assembly Tester will test the backflow assembly in question and charge the water customer a fee according to the City's Municipal Fee schedule. The City's will not make repairs to backflow assemblies that did not pass the test.

7.2.1 Yearly Testing Notifications

Annual notification letters to water customers are currently sent out through USPS mail. Beginning in FY25-26, initial notifications will be by email to the customer. Second and third notifications (if needed) will continue to be through USPS mail. Notifications will include the following information:

- References to the Cross-Connection Control Policy Handbook and the City's ordinance
- City contact information
- Instructions for accessing the list of approved backflow testers
- Processes for submitting the backflow test report
- Due date for submitting test results
- The backflow assembly of records details including meter number, assembly serial number, model and size, and location
- Requirement for initial hazard assessment and subsequent assessments if changes at the premises
- Requirement to notify the City if imminent or occurring hazard
- Instructions on how to provide customer provided information

7.2.2 Upgrading

Assemblies that are not noted on City's Standard Details may remain in place at the discretion of the City Engineer until the point of complete failure (repairs and overhauls cannot remedy) if the assembly passes field tests. For non-complying assemblies, refer to the requirements of Section 5.3.6. When an assembly fails the field test, a new assembly shall be installed at the property owner/water customer's expense. Only assemblies that are noted on the City's Standard Details shall be installed unless determined otherwise by the City Engineer.

7.2.3 Notification of Imminent Hazard

Backflow assembly property managers and/or water customers are required to notify the City within 24 hours of determining a known backflow or cross-connection incident. This requirement is stated in annual notifications received by the customer from the City.

Upon being notified, the City will immediately investigate and discontinue water service to the premises if an imminent hazard to public health is found. The water service will not be restored until confirmation of a correction is made and a passing backflow assembly field test is received.

8.0 RECORD MAINTENANCE

Cross-Connection control records and associated penalties for non-compliance are described in this section.

8.1 Records

The City will retain the following records in electronic form and make them available to the SWRCB upon request:

8.1.1 Cross-Connection Control Plan

This CCCP will be reviewed every five years and updated as necessary.

8.1.2 Hazard Assessments

Records will be retained for the two most recent hazard assessments conducted according to Section 5.3 of this CCCP.

8.1.3 Assembly Records

For each backflow prevention assembly, the following information shall be kept electronically: type, associated hazard, location, owner, manufacturer and model, size, installation date, serial number, account number, consumer of record, and repair history.

For each AG installation, the following information shall be kept electronically: associated hazard, location, owner, and as-built plans.

For each swivel-ell, the following information shall be kept electronically: location, appropriate contacts, agreements, and inspection results.

8.1.4 Testing Results

Test results on all assemblies, AGs, and swivel ells will be kept electronically for three calendar years and will include the name, test date, repair date, and certification number of the backflow assembly tester.

8.1.5 Repairs

Records will be retained for all repairs made to backflow prevention assemblies for the previous three calendar years.

8.1.6 Recycled Water Cross-Connection Control Shutdown Tests

The most recent cross-connection control shutdown test will be kept for each recycled water site.

8.1.7 Customer Supervisors

Records will be retained that include current contact information on the customer supervisor and water customer, and any applicable training and qualifications as described by Section 10.3 of this CCCP.

8.1.8 Incident Reports

Descriptions and follow-up actions related to all backflow incidents for the most recent ten years will be retained.

8.1.9 Contracts and Agreements

All contracts and agreements executed related to cross-connection control or backflow will be retained by the City.

8.1.10 Educational Material

Public education and outreach materials will be kept for the previous four (4) years.

8.2 Non-Compliance Penalties (CO Title VIII Public Works Chapter 3.9)

The City shall discontinue water service to any premises if a backflow prevention assembly is removed, purposely by-passed, or fail to conform with regulatory compliance regarding annual testing, repairs, overhauls, and replacements. In addition, any person(s), company, corporation, or association who violates willfully or fails to comply with the City's cross-connection control ordinance or this CCCP will be considered guilty of an infraction punishable with the provisions of the Milpitas Municipal Code.

9.0 INCIDENT RESPONSE AND NOTIFICATION

The City will investigate for possible backflow incidents when the following triggers are reported:

- Water quality complaint that cannot be explained as a normal aesthetic problem; especially receiving multiple reports indicating multiple properties impacted
- Advanced Metering Infrastructure (AMI) meters reporting negative usage
- A backflow incident suspected or known to have occurred
- Unknown increase of system pressure reported
- Unknown decrease of system pressure reported

Additionally, the City will initiate a notification and water quality sampling procedures when a water main break or power outage causes a negative loss of water pressure within a significant area of the distribution system as a precautionary measure in case of a potential back siphonage event.

The incident response procedures, notification procedures, and associated record keeping requirements are addressed below.

9.1 Incident Response Procedure (CCCPH 3.5.2)

The City will implement their Water Emergency Response Plan (ERP) if contamination of the City's distribution system is observed. The ERP contains the City's plan for notifying customers and other officials of a water emergency, contact information for internal and external pertinent staff, conditions for activating the Emergency Operations Center, and a description of roles and responsibilities of water staff. The ERP is intended to be a living document evaluated regularly for updates. The latest version is found in Appendix G of this report.

In the event of a potential backflow related incident, the City will take the following steps, each of which is described in this subsection:

- Incident Investigation
- Isolation of Sources of Contamination
- Cleaning and Disinfection
- Notification and Coordination with Outside Agencies
- Notification of Affected Population

9.1.1 Incident Investigation

The City's Public Works Department will begin an investigation by sending a Utility Maintenance Worker (Worker) to the location of the reported incident. Through a field investigation, the Worker will determine if contamination is present in the PWS and the extent of the impacted area. Workers will perform the following actions to investigate for potential cross-connections:

- Survey area for possible main breaks
- Visit the premises to observe possible sources of contamination

- Evaluate meters for negative consumption (meters moving backwards)
- Survey hydrants, blow offs, and air inlet valves for possible sources of contamination

If a cross-connection is responsible for the system contamination, the City will discontinue water service to that service(s) until a corrective action is taken.

9.1.2 Sources of Contamination Isolation

Once the cross-connection responsible for the system contamination is located and isolated from the PWS, the City will also isolate the portion of the system suspected of being contaminated by closing isolation valves and notifying customers impacted of the disruption of water.

9.1.3 Cleaning and Disinfection

The City will work with the SWRCB to establish procedures to remove the contamination and disinfect the PWS. A sampling plan will also be established and implemented to confirm when the system meets Safe Drinking Water Standards.

9.1.4 Notification and Coordination with Outside Agencies

The City will be responsible for notifying the SWRCB and the County's Public Health Officer as soon as practical to accurately communicate and properly mitigate potential health effects resulting from an incident. The City will use the Water Quality Emergency Notification Plan as outlined in the ERP. The Notification Plan identifies the persons designated to implement the plan and provides the contact information of the appropriate County Health Department personnel.

9.1.5 Notification of Affected Population

As soon as possible following an incident, the City will notify the public using methods outlined in the Emergency Notification Plan within the ERP. Notifications will be provided by any one or all of the following: television media, radio, social media, sound trucks, door hangers, and the City's website.

If the contamination is of a biological nature, the City will issue a Boil Water Order Notice. If the contamination is of a chemical nature, the City will issue an Unsafe Water Alerts as "Do-Not-Use" or "Do-No-Drink" Notices. Notices will be communicated in English and Spanish. The City has a draft notification template that can quickly be populated with the necessary details and printed for distribution. Notices include instructions on what consumers should do; where potable water is available; and if applicable, dates of notice issuance and expected resolution; and location where more information can be received.

The City will contact bottled water companies to purchase water for its customers. The City will determine the most efficient way to distribute the bottled water through either a delivery system or a central distribution location.

9.2 Backflow Incident Notification (CCCPH 3.5.3)

The City shall notify the SWRCB of any known backflow incident within 24 hours of the determination. If required by the SWRCB, the City shall issue a Tier 1 public notification pursuant to CCR, Title 22, Section 64463.1. If required by the SWRCB, the City must submit, by a date specified by the SWRCB, a written incident report describing the nature and severity of the backflow, the actions taken by the City in response to the incident, and any follow up actions required to prevent future incidents. The written report will contain, at a minimum, the information provided in Appendix F of the CCCPH.

9.3 Record Keeping

Incident notifications, which include results of and follow up actions of all backflow incidents, will be maintained by the City for up to three years. Results will be available to the SWRCB upon request.

10.0 PUBLIC OUTREACH, EDUCATION, AND COORDINATION

Topics addressed in this section include public outreach, training, designation of customer supervisors, and inter-agency coordination.

10.1 Public Outreach

The City maintains a Cross Connection Control and Backflow Prevention webpage that contains references to the City's Municipal Code and State of California regulations. The webpage describes the purpose of the CCCP, provides details on the annual backflow testing requirements, including links to City Standard Details that note the lists of Approved Backflow Assemblies, the list of qualified Backflow Prevention Assembly Testers, the list of Cross Connection Control Specialists as well as providing testers online access to the City's backflow management software. In addition, the City's Water Quality Report provides a description of backflow testing and the benefits it provides for maintaining water quality.

10.2 Training

Beginning in the Fall of 2025, the City will offer annual cross-connection control training to City employees that need to be knowledgeable with this CCCP. Employees responsible for parks, street landscape facilities, operations and maintenance, Public Works Inspectors, Building Inspectors, and Fire Prevention will be included. The Utility Engineering Section attends trainings from various organizations related to backflow prevention assembly testing procedures and cross-connection control methods. Specialist and/or tester certification is encouraged for City employees.

10.3 Designation of User Supervisor (CCCPH 3.2.2.-f)

The City may require, at the discretion of the City's Cross-Connection Specialist, a water customer to designate a user supervisor when the customer premises has a multi-piping system that conveys various types of fluids and where changes in the piping system are frequently made. The designated user supervisor will be responsible for the avoidance of cross-connections during the installation, operation, and maintenance of the water customer's pipelines and equipment. The designated user supervisor must be trained on the fluids used and backflow protection methods present at the premises. The user supervisor will be responsible for informing the City of changes in piping and shall maintain current contact information on file with the City.

The user supervisor will be required to attend a training provided by the City that covers the types of hazards and concerns typically found on customer's premises. Upon successful completion of the training a user supervisor certificate will be issued with a renewal requirement of every four years. Currently the City has Recycled Water Site Supervisors trained by South Bay Water Recycling Program. Part of the training includes prevention of cross-connections.

10.4 Inter-Agency Coordination

The CCCP is shared with various departments across the organization and with other agencies as shown in Table 10-1.

Table 10-1. Inter-Agency Coordination

Entity	Responsibility	Coordination
Inter-Department Coordination		
Utility Engineering	• Administers the Cross-Connection Control Program • Performs testing and hazard assessments if not completed by customer • Performs testing and hazard assessments for all City-owned facilities • Inspects newly installed backflow assemblies for proper installation • Leads on potential backflow investigations • Respond to customer cross-connection questions. • Maintains cross-connection standards and specifications • Ensures appropriate backflow protection is provided for new developments within the City • Coordinates with the SWRCB	• Coordination with customers, City departments, regulatory agencies, testers and specialists
Public Works/ Water Division	• Assists with potential backflow investigations • Customer service staff field phone calls not related to cross-connection and water quality complaints	• Informs Utility Engineering on field investigations • Reporting water main breaks or other water complaints for further investigation
Land Development	• Reviews and approves development projects	• Coordinates plan review with Utility Engineering
Building Inspection	• Reviews tenant improvement projects • Enforces building and plumbing codes	• Informs Utility Engineering of the proposed tenant improvements so that an assessment may be completed • Confirms backflow assemblies are installed as part of tenant Improvement permits • Informs Utility Engineering that new assembly has been installed and tested
Fire Prevention	• Reviews fire prevention plans • Reviews pressure and operational calculations for backflow retrofits	• Coordinates plan review with Utility Engineering
Finance Department	Track changes in business status (new businesses, ownership, businesses no longer operating)	Notify Utility Engineering of change of business status

Table 10-1. Inter-Agency Coordination

Entity	Responsibility	Coordination
Outside Agency Coordination		
Santa Clara County Public Health Department	• Oversees public health programs within Santa Clara County	• Provides guidance to the City in situations where public health could be affected
Valley Water/SFPUC	• Provides potable water to the City as a wholesaler	• Provides assistance during water emergencies
SWRCB	• Regulates public water systems	• Provides guidance to the City during water-related emergencies • Perform regular sanitary surveys
South Bay Water Recycling	• Provides recycled water to the City as a wholesaler • Oversees recycled water permitting and inspection program	• Assists the City with recycled water compliance programs to protect public health • Performs site supervisor trainings

Appendix A

Cross-Connection Control Policy Handbook, Adopted 2023

State Water Resources Control Board

Cross-Connection Control Policy Handbook

Standards and Principles for California's Public Water Systems

Adopted: December 19, 2023
Effective: July 1, 2024

California Environmental Protection Agency

Table of Contents

Appendix

Acronyms and Abbreviations

As used in this policy, acronyms and abbreviations reference the following:

Acronym or Abbreviation	***Meaning***
AB	Assembly Bill
AG	Air Gap separation
BAT	Best Available Technology
BPA	Backflow Prevention Assembly
Bus. & Prof. Code	Business and Professional Code
CA	California
CBSC	California Building Standards Commission
CCCPH	Cross-Connection Control Policy Handbook
CCR	California Code of Regulations
C.F.R.	Code of Federal Regulations
CHSC	California Health and Safety Code
Civ. Code	Civil Code
DC	Double Check valve backflow prevention assembly
DCDA	Double Check Detector backflow prevention Assembly
DCDA-II	Double Check Detector backflow prevention Assembly – type II
Division	Division of Drinking Water
EPA	Environmental Protection Agency
Gov. Code	Government Code
MCL	Maximum Contaminant Level
Pen. Code	Penal Code
PVB	Pressure Vacuum Breaker backsiphonage prevention assembly
PWS	Public Water System
RP	Reduced Pressure principle backflow prevention assembly
RPDA	Reduced Pressure principle Detector backflow prevention Assembly
RPDA-II	Reduced Pressure principle Detector backflow prevention Assembly – type II
RW	Recycled Water
SB	Senate Bill
SDWA	Safe Drinking Water Act
State Water Board	State Water Resources Control Board
SVB	Spill-resistant Pressure Vacuum Breaker backsiphonage prevention assembly
U.S.	United States

Chapter 1 – Policy Overview

1.1 Objective

The primary objective of the Cross-Connection Control Policy Handbook (CCCPH) is the protection of public health through the establishment of standards intended to ensure a public water system's (PWS) drinking water distribution system will not be subject to the backflow of liquids, gases, or other substances. In addition, by providing basic educational information on backflow prevention, the State Water Resources Control Board (State Water Board) intends to build a foundation of awareness within the regulated community regarding the importance of backflow protection and cross-connection control, leading to the implementation of a robust cross-connection control program for PWSs.

1.2 Applicability

The CCCPH and its standards apply to all California PWSs, as defined in California's Health and Safety Code (CHSC, section 116275 (h)). Compliance with this CCCPH is mandatory for all California PWSs.

1.3 Policy Development Background and Legal Authorities

Through the adoption of the CCCPH, the State Water Board is exercising its authority, under California's Safe Drinking Water Act[1] (SDWA), to establish enforceable standards applicable to California's PWSs. Failure to comply with the CCCPH may result in the issuance of compliance, enforcement, or other corrective actions against a PWS.

1.3.1 California Safe Drinking Water Act

On October 6, 2017, Assembly Bill 1671 (AB 1671) was approved and filed with the Secretary of State (see Appendix A). AB 1671 amended California's SDWA through the establishment of CHSC sections 116407 and 116555.5. AB 1671 also amended section 116810 of the CHSC, which is briefly discussed in Appendix G.

On October 2, 2019, Assembly Bill 1180 (AB 1180) was approved and filed with the Secretary of State. AB 1180 amended Section 116407 of the CHSC and added section 13521.2 to the Water Code. AB 1180 requires that the CCCPH include provisions for the use of a swivel or changeover device (swivel-ell).

[1] CHSC, div. 104, pt. 12, ch. 4, section 116270 et seq.

AB 1671 and 1180 established the following:

- The State Water Board must adopt standards for backflow protection and cross-connection control by January 1, 2020.
- The State Water Board may establish standards for backflow protection and cross-connection control through the adoption of the CCCPH, with the CCCPH not being subject to the requirements of the CA Administrative Procedure Act.[2]
- If standards for backflow protection and cross-connection control are established via the CCCPH, the State Water Board must:
    - Consult with state and local agencies and persons, identified by the State Water Board, as having expertise on the subject of backflow protection and cross-connection control.
    - Hold at least two public hearings before adoption of the CCCPH.
    - Post the CCCPH on the State Water Board website.
- Upon the effective date of the CCCPH, the previous cross-connection control standards[3] become inoperative, and are repealed 90 days later, unless the State Water Board determines not to repeal a specific existing regulation.
- A PWS must implement a cross-connection control program that complies with the standards adopted by the State Water Board.
- Use of a swivel-ell must be consistent with any notification and backflow protection provisions contained in the CCCPH.

The development of the CCCPH included consultation with stakeholders, including state and local agencies, on an array of subjects related to cross-connection control, consistent with the statutory mandate, as well as consideration of input from other stakeholders and the general public in a February 20, 2020 workshop.

Prior to adoption of the CCCPH, in accordance with the statutory mandate, the State Water Board held two public hearings - one on April 27, 2021, and the other on December 5, 2022. A Board Workshop was held on October 18, 2023.

Pursuant to sections 116407 and 116555.5 of the CHSC, the State Water Board chose to adopt standards for backflow protection and cross-connection control through the adoption of this CCCPH, which became effective July 1, 2024.

Aside from the mandates of AB 1671 related to the State Water Board's need and authority to develop and adopt an enforceable CCCPH, there are long-standing statutory mandates in California's SDWA concerning backflow protection and cross-connection control, some of which are summarized below.

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[2] Gov. Code, tit. 2, div. 3, pt. 1, ch. 3.5, section 11340 et seq.
[3] Cal. Code Regs., tit. 17, div. 1, ch. 5, subch. 1, grp. 4, arts. 1 & 2, section 7583 et seq.

- The State Water Board is required to adopt regulations for the control of cross-connections that it determines to be necessary for ensuring PWSs "distribute a reliable and adequate supply of pure, wholesome, potable, and healthy water." (CHSC section 116375, subd. (c).)
- Any person who owns a PWS is required to ensure that the distribution system will not be subject to backflow under normal operating conditions. (CHSC section 116555, subd. (a)(2).)

Prior to AB 1671 and the adoption of this CCCPH, California's regulations pertaining to cross-connection control were set forth in regulations in CCR Title 17,[4] which were adopted in 1987 with minor revisions in 2000. Although still protective to public health, the CCR Title 17 cross-connection regulations required updating as both the drinking water and cross-connection control industries had evolved. This CCCPH updates those regulations, which as previously noted are no longer operative following the adoption of the CCCPH.

The State Water Board may update its standards for backflow protection and cross-connection control through revisions of the CCCPH. Prior to adopting substantive revisions to the CCCPH, the State Water Board will consult with state and local agencies and persons identified as having expertise on the subject by the State Water Board, and the State Water Board will hold at least one public hearing to consider public comments.

[4] Cal. Code Regs., tit. 17, div. 1, ch. 5, subch. 1, grp. 4, arts. 1 & 2, section 7583 et seq.

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Chapter 2 – Background on Backflow Protection and Cross-Connection Control

2.1 What is a Cross-Connection?

A cross-connection is an interconnection between a potable water supply and a non-potable source via any actual or potential connection or structural arrangement between a PWS and any source or distribution system containing liquid, gas, or other substances not from an approved water supply. Bypass arrangements, jumper connections, removable sections, improperly installed swivel or change-over devices and other temporary or permanent devices through which, or because of which backflow can occur are considered to be cross-connections.[5] The CCCPH includes acceptable installation criteria for swivel-ell and other types of backflow prevention assemblies (BPAs) to prevent backflow.

Backflow is the undesired or unintended reversal of flow of water and/or other liquids, gases, or other substances into a PWS's distribution system or approved water supply.

The presence of a cross-connection represents a location in a distribution system through which backflow of contaminants or pollutants can occur. Backflow occurs when a non-potable source is at a greater pressure than the potable water distribution system. Backflow can occur from either backsiphonage or backpressure. Backsiphonage occurs when a non-potable source enters the drinking water supply due to negative (i.e., sub-atmospheric) distribution system pressure. Backpressure occurs when the pressure from a non-potable source exceeds the pressure in the potable water distribution system.

Backsiphonage may be caused by a variety of circumstances, such as main breaks, flushing, pump failure, or emergency firefighting water demand. Backpressure may occur when heating, cooling, waste disposal, or industrial manufacturing systems are connected to potable supplies and the pressure in the external system exceeds the pressure in the distribution system. Both situations act to change the direction of water, which normally flows from the distribution system to the customer, so that non-potable substances from industrial, commercial, or residential premises flows back into the distribution system through a cross-connection.

Cross-connections are not limited to industrial or commercial facilities. Submerged inlets are found on many common plumbing fixtures and are sometimes necessary features of the fixtures if they are to function properly. Examples of this type of design are siphon-jet urinals or water closets, flushing rim slop sinks, and dental cuspidors.

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[5] California Department of Health Services (DHS), Public Water Supply Branch. (1988). *Guidance Manual for cross connection Control Program (Green Manual).* California Department of Health Services.

Older bathtubs and lavatories may have supply inlets below the flood level rims, but modern sanitary design has minimized or eliminated this cross-connection in new fixtures. Chemical and industrial process vats sometimes have submerged inlets where the water pressure is used as an aid in diffusion, dispersion and agitation of the vat contents. Even though a supply pipe may be installed above a vat, backsiphonage can still occur. Siphon action has been shown to raise a liquid in a pipe such as water almost 34 feet. Some submerged inlets are difficult to control, including those which are not apparent until a significant change in water level occurs or where a supply may be conveniently extended below the liquid surface by means of a hose or auxiliary piping. A submerged inlet may be created in numerous ways, and its detection may be difficult.

Chemical and biological contaminants have caused illness and deaths during known incidents of backflow, with contamination affecting several service connections, and the number of incidents reported is believed to be a small percentage of the total number of backflow incidents that actually occur. The public health risk from cross-connections and backflow is a function of a variety of factors including cross-connection and backflow occurrence and type and amount of contaminants.

2.2 Purpose of a Cross-Connection Control Program

The purpose of a cross-connection control program is to prevent the occurrence of backflow into a PWS's distribution system in order to protect customers from contamination or pollution from any on-site hazards. Properly installed and maintained BPAs, devices or methods provide protection against the threat posed by many conditions typically found on a user's premise.

The use of approved BPAs ensures that the appropriate performance evaluation of the assembly was conducted. It is important and required by the CCCPH to select and properly install an approved BPA that is capable of protecting the distribution system from the hazard identified. The success of a program depends on individuals that are knowledgeable about cross-connection control to identify actual and potential hazards, apply principles of backflow protection and prevention, and implement cross-connection control policies and procedures. A successful program will have ongoing surveillance of a PWS to ensure BPAs, devices or methods are working, and identify new hazards or changes in the distribution system. Certified specialists are needed to properly evaluate the degree of hazard that exists in the distribution system. Hazards typically identified in distribution systems along with the required level of protection are specified in Chapter 3 of the CCCPH.

2.3 Notes on Applicability of the Cross-Connection Control Policy Handbook

The CCCPH provides the basis for regulating the use and management of cross-connection control programs and BPAs in PWSs, and related requirements for supporting programs and policies. Activities or uses outside of the scope of the

authority of the State Water Board to regulate PWSs are not regulated by the CCCPH, including California Plumbing Code requirements and definitions not related to PWSs.

Recycled water cross-connection control installations and programs for the purposes of protecting the recycled water supply are not regulated by the CCCPH, although a PWS that uses recycled water is regulated by the CCCPH to ensure that a PWS's drinking water system has adequate backflow protection from a recycled water system.

Water systems that do not meet the definition of a PWS (e.g. "State Small Water Systems" under CCR Title 22, Article 3) are not regulated by the CCCPH, although they may need to comply with the California Plumbing Code, local health agencies, and other laws or entities.

Transient noncommunity and nontransient noncommunity systems are PWSs and must comply with both the California Plumbing Code and CCCPH. The California Plumbing Code and the CCCPH will overlap in protection of these user premises. To ensure compliance, these noncommunity water systems may need to have internal cross-connection control programs within the user premises.

Noncommunity water systems must have the ability to enforce backflow protection within the premises. Compliance with the California Plumbing Code can be verified by the PWS and used for compliance with the CCCPH. Compliance with the CCCPH is documented through the hazard assessment and maintenance of an inventory of field-testable BPAs and methods. Annual field testing of BPAs is required. Where the minimum backflow protection differs between the California Plumbing Code and the CCCPH, the more protective minimum protection will be required.

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Chapter 3 – Standards for Backflow Protection and Cross-Connection Control

Article 1 – Definitions and General Requirements

3.1.1 Definitions

The following definitions apply to the terms used in the CCCPH:

"**Air-gap separation**" or "**AG**" means a physical vertical separation of at least two (2) times the effective pipe diameter between the free-flowing discharge end of a potable water supply pipeline and the flood level of an open or non-pressurized receiving vessel, and in no case less than one (1) inch.

"**Approved water supply**" means a water source that has been approved by the State Water Board for domestic use in a public water system and designated as such in a domestic water supply permit issued pursuant to section 116525 of the CHSC.

"**Auxiliary water supply**" means a source of water, other than an approved water supply, that is either used or equipped, or can be equipped, to be used as a water supply and is located on the premises of, or available to, a water user.

"**Backflow**" means an undesired or unintended reversal of flow of water and/or other liquids, gases, or other substances into a public water system's distribution system or approved water supply.

"**Backflow prevention assembly**" or "BPA" means a mechanical assembly designed and constructed to prevent backflow, such that while in-line it can be maintained and its ability to prevent backflow, as designed, can be field tested, inspected and evaluated.

"**Backflow prevention assembly tester**" means a person who is certified as a backflow prevention assembly tester.

*"***Community water system"** means a public water system that serves at least 15 service connections used by yearlong residents or regularly serves at least 25 yearlong residents of the area served by the system.

*"***Contact hour"** means not less than 50 minutes of a continuing education course.

*"***Continuing education course"** means a presentation or training that transmits information related to cross-connection control programs and backflow prevention and protection.

"**Cross-connection**" means any actual or potential connection or structural arrangement between a public water system, including a piping system connected to the public water system and located on the premises of a water user or available to the water user, and any source or distribution system containing liquid, gas, or other substances not from an approved water supply.

"**Cross-connection control specialist**" means a person who is certified as a cross-connection control specialist.

"**Distribution system**" has the same meaning as defined in section 63750.50 of CCR, Title 22, Division 4, Chapter 2.

"**Double check detector backflow prevention assembly**" or "**DCDA**" means a double check valve backflow prevention assembly that includes a bypass with a water meter and double check backflow prevention assembly, with the bypass's water meter accurately registering flow rates up to two gallons per minute and visually showing a registration for all rates of flow. This type of assembly may only be used to isolate low hazard cross-connections. See Diagram 1, Appendix C.

"**Double check detector backflow prevention assembly – type II**" or "**DCDA-II**" means a double check valve backflow prevention assembly that includes a bypass around the second check, with the bypass having a single check valve and a water meter accurately registering flow rates up to two gallons per minute and visually showing a registration for all rates of flow. This type of assembly may only be used to isolate low hazard cross-connections. See Diagram 2, Appendix C.

"**Double check valve backflow prevention assembly**" or "**DC**" means an assembly consisting of two independently-acting internally-loaded check valves, with tightly closing shut-off valves located at each end of the assembly (upstream and downstream of the two check valves) and fitted with test cocks that enable accurate field testing of the assembly. This type of assembly may only be used to isolate low hazard cross-connections. See Diagram 3, Appendix C.

"**Existing public water system**" or "**existing PWS**" means a public water system initially permitted on or before July 1, 2024 as a public water system by the State Water Board.

"Hazard Assessment" means an evaluation of a user premises designed to evaluate the types and degrees of hazard at a user's premises.

"**High hazard cross-connection**" means a cross-connection that poses a threat to the potability or safety of the public water supply. Materials entering the public water supply through a high hazard cross-connection are contaminants or health hazards. See Appendix D for some examples.

"**Low hazard cross-connection**" means a cross-connection that has been found to not pose a threat to the potability or safety of the public water supply but may adversely affect the aesthetic quality of the potable water supply. Materials entering the public water supply through a low hazard cross-connection are pollutants or non-health hazards.

"**New public water system**" or "**new PWS**" means a public water system permitted after July 1, 2024 as a public water system by the State Water Board. A new public water system includes a public water system receiving a new permit because of a change in ownership.

"**Noncommunity water system"** means a public water system that is not a community water system.

"**Nontransient noncommunity water system"** means a public water system that is not a community water system and that regularly serves at least 25 of the same persons over six months per year.

"**Premises containment**" means protection of a public water system's distribution system from backflow from a user's premises through the installation of one or more air gaps or BPAs, installed as close as practical to the user's service connection, in a manner that isolates the water user's water supply from the public water system's distribution system.

"**Pressure vacuum breaker backsiphonage prevention assembly**" or "**PVB**" means an assembly with an independently-acting internally-loaded check valve and an independently-acting loaded air inlet valve located on the discharge side of the check valve; with test cocks and tightly closing shutoff valves located at each end of the assembly that enable accurate field testing of the assembly. This type of assembly may only be used for protection from backsiphonage and is not to be used to protect from backpressure. See Diagram 4, Appendix C.

"**Public water system**" or "**PWS**" has the same meaning as defined in section 116275(h) of the CHSC.

"**Recycled Water"** is a wastewater which as a result of treatment is suitable for uses other than potable use.

"**Reduced pressure principle backflow prevention assembly**" or "**RP**" means an assembly with two independently acting internally-loaded check valves, with a hydraulically operating mechanically independent differential-pressure relief valve located between the check valves and below the upstream check valve. The assembly shall have shut-off valves located upstream and downstream of the two check-valves, and test cocks to enable accurate field testing of the assembly. See Diagram 5, Appendix C.

"**Reduced pressure principle detector backflow prevention assembly**" or "**RPDA**" means a reduced pressure principle backflow prevention assembly that includes a bypass with a water meter and reduced pressure principle backflow prevention assembly, with the bypass's water meter accurately registering flow rates up to two gallons per minute and visually showing a registration for all rates of flow. See Diagram 6, Appendix C.

"**Reduced pressure principle detector backflow prevention assembly – type II**" or "**RPDA-II**" means a reduced pressure principle backflow prevention assembly that includes a bypass around the second check, with the bypass having a single check valve and a water meter accurately registering flow rates up to two gallons per minute and visually showing a registration for all rates of flow. See Diagram 7, Appendix C.

"**Spill-resistant pressure vacuum breaker backsiphonage prevention assembly**" or "**SVB**" means an assembly with an independently-acting internally-loaded check valve and an independently-acting loaded air inlet valve located on the discharge side of the check valve; with shutoff valves at each end and a test cock and bleed/vent port, to enable accurate field testing of the assembly. This type of assembly may only be used for protection from backsiphonage and is not to be used to protect from backpressure. See Diagram 8, Appendix C.

"**State Water Board**", unless otherwise specified, means the State Water Resources Control Board or the local primacy agency having been delegated the authority to enforce the requirements of the CCCPH by the State Water Resources Control Board.

"**Swivel-Ell**" means a reduced pressure principle backflow prevention assembly combined with a changeover piping configuration (swivel-ell connection) designed and constructed pursuant to this Chapter. See design and construction criteria, as well as Diagrams 9a and 9b, Appendix C.

"**Transient noncommunity water system"** means a noncommunity water system that does not regularly serve at least 25 of the same persons over six months per year.

"**User premises**" means the property under the ownership or control of a water user and is served, or is readily capable of being served, with water via a service connection with a public water system.

"**User's service connection**" means either the point where a water user's piping is connected to a water system or the point in a water system where the approved water supply can be protected from backflow using an air gap or backflow prevention assembly.

"**User Supervisor"** means a person designated by a water user to oversee a water use site and responsible for the avoidance of cross-connections.

"**Water supplier**" means a person who owns or operates a public water system.

"**Water user**" means a person or entity who is authorized by the PWS to receive water.

3.1.2 Applicability

A public water system (PWS) must comply with the requirements of the CCCPH.

3.1.3 Program for Public Water System Cross-Connection Control

(a) A PWS must protect the public water supply through implementation and enforcement of a cross-connection control program. Unless otherwise specified by this Chapter or directed by the State Water Board, a PWS may implement its cross-connection control program, in whole or in part, either directly or by way of contract or agreement with another party. The PWS, however, shall not be responsible for abatement of cross-connections which may exist within a user's premises. The cross-connection control program must include at a minimum the following elements:

(1) **Operating rules or ordinances** – Each PWS must have operating rules, ordinances, by-laws or a resolution to implement the cross-connection program. The PWS must have legal authority to implement corrective actions in the event a water user fails to comply in a timely manner with the PWS's provisions regarding the installation, inspection, field testing, or maintenance of BPAs required pursuant to this Chapter. Such corrective actions must include the PWS's ability to perform at least one of the following:

(A) deny or discontinue water service to a water user,
(B) install, inspect, field test, and/or maintain a BPA at a water user's premises, or
(C) otherwise address in a timely manner a failure to comply with the cross-connection control program.

(2) **Cross-Connection Control Program Coordinator** – The PWS must designate at least one individual involved in the development of and be responsible for the reporting, tracking, and other administration duties of its cross-connection control program. For PWS with more than 3,000 service connections the Cross-Connection Control Program Coordinator must be a cross-connection control specialist.
(3) **Hazard Assessments** – The PWS must survey its service area and conduct hazard assessments per Article 2 of this Chapter that identifies actual or potential cross-connection hazards, degree of hazard, and any backflow protection needed.
(4) **Backflow Prevention** – The PWS must ensure that actual and potential cross-connections are eliminated when possible or controlled by the installation of approved BPAs or AG's consistent with the requirements of the Article 3 of this Chapter.

(5) **Certified Backflow Prevention Assembly Testers and Certified Cross-Connection Control Specialists** – The PWS must ensure all BPA testers and cross-connection control specialists used are certified per Article 4 of this Chapter.
(6) **Backflow Prevention Assembly Testing** – The PWS must develop and implement a procedure for ensuring all BPAs are field tested, inspected, and maintained and AG's are inspected and maintained in accordance with CCCPH section 3.3.3.
(7) **Recordkeeping** – The PWS must develop and implement a recordkeeping system in accordance with CCCPH section 3.5.1.
(8) **Backflow Incident Response, Reporting and Notification** – The PWS must develop and implement procedures for investigating and responding to suspected or actual backflow incidents in accordance with Article 5 of this chapter.
(9) **Public Outreach and Education –** The PWS must implement a cross-connection control public outreach and education program element that includes educating staff, customers, and the community about backflow protection and cross-connection control. The PWS may implement this requirement through a variety of methods which may include providing information on cross-connection control and backflow protection in periodic water bill inserts, pamphlet distribution, new customer documentation, email, and consumer confidence reports.
(10) **Local Entity Coordination** – The PWS must coordinate with applicable local entities that are involved in either cross-connection control or public health protection to ensure hazard assessments can be performed, appropriate backflow protection is provided, and provide assistance in the investigation of backflow incidents. Local entities may include but are not limited to plumbing, permitting, or health officials, law enforcement, fire departments, maintenance, and public and private entities.

(b) The cross-connection control program must be developed in consultation with a cross-connection control specialist if:

(1) The PWS has 1,000 or more service connections, or
(2) required by the State Water Board.

(c) A PWS must have at least one cross-connection control specialist as a permanent or contracted employee of the PWS, and that specialist, or their designee, must be able to be contacted within one hour, if:

(1) The PWS has 3,000 or more service connections, or
(2) the PWS has less than 3,000 service connections and is directed by the State Water Board based on hazard assessments conducted pursuant to CCCPH section 3.2.1. or the PWS's history of backflow incidents.

3.1.4 Plan for Public Water System Cross-Connection Control

(a) After adoption of the CCCPH, each PWS must submit a written Cross-Connection Control Plan for State Water Board review in accordance with the following schedule:

(1) An Existing PWS must submit the Cross-Connection Control Plan no later than 12 months after the effective date of the CCCPH.
(2) A new PWS must submit the Cross-Connection Control Plan for review and approval prior to issuance of a domestic water supply permit.
(3) A PWS may submit a written request to the State Water Board for an extension of the deadline for submittal of its initial Cross-Connection Control Plan. The PWS's application must include a written description of the need for an extension. Approval of an extension will be at the sole discretion of the State Water Board.

(b) The Cross-Connection Control Plan for a community water system must include, at a minimum, the following cross-connection control program procedures and documentation:

(1) a description of how the community water system will achieve and maintain compliance with each requirement in this Chapter;
(2) a description of the process, personnel, and timeframes for completing initial and ongoing hazard assessments pursuant to CCCPH section 3.2.1;
(3) a description of the legal authority pursuant to CCCPH section 3.1.3 to implement corrective actions in the event a water user fails to comply in a timely manner with the provisions of the PWS's cross-connection control program;
(4) a description of the process and timeframes for ensuring each BPA is inspected and field tested, and AG is inspected, at a frequency no less than required by this Chapter;
(5) a description of the process and timeframe for ensuring each non-testable backflow preventer that is under the PWS ownership or administration is installed and maintained according to the California Plumbing Code;
(6) a description of the process for ensuring individuals field testing and inspecting BPAs are no less qualified than required by this Chapter, including but not limited to confirmation of the individual's:

(A) certification as a backflow prevention assembly tester,
(B) field test kit or gage equipment accuracy verification, and
(C) BPA field test result reports;

(7) a description of the procedures and timeframes of activities for responding to backflow incidents, including notification of customers, and reporting of backflow incidents pursuant to CCCPH section 3.5.2;
(8) contact information for cross-connection control personnel including any cross-connection control program coordinator and specialist;
(9) a description of the tracking system that maintains current and relevant information, including:

(A) recordkeeping information required pursuant to CCCPH section 3.5.1,
(B) location and type of each BPA, and
(C) highest threat potential hazard from which a given BPA is protecting the public water system distribution system;

(10) for user supervisors, if used, the required information pursuant to CCCPH section 3.2.2 (f);
(11) the corrective actions, including timeframes for the corrective actions, that a community water system will implement when:

(A) a cross-connection exists and the BPA installed is not commensurate with the user premises' hazard or no BPA has been installed, or
(B) a BPA needs to be replaced or maintained;

(12) a description of the public outreach and education program to comply with CCCPH section 3.1.3(a)(9); and
(13) the procedures for coordination with local entities

(c) The Cross-Connection Control Plan for a noncommunity water system must include, at a minimum, the following cross-connection control program procedures and documentation:

(1) a description of how the noncommunity water system will achieve and maintain compliance with each requirement in this Chapter that is applicable to the noncommunity water system;
(2) a description of the process, personnel, and timeframes for completing initial and ongoing hazard assessments pursuant to CCCPH section 3.2.1;
(3) a description of the legal authority pursuant to CCCPH section 3.1.3 to implement corrective actions in the event a water user fails to comply in a timely manner with the provisions of the PWS's cross-connection control program;
(4) a description of the process and timeframes for ensuring each BPA is inspected and field tested and AG is inspected, at a frequency no less than required by this Chapter;
(5) a description of the process and timeframe for ensuring each non-testable backflow preventer for internal protection that is under the PWS ownership or administration is installed and maintained according to the California Plumbing Code;
(6) a description of the process for ensuring individuals field testing and inspecting BPAs are no less qualified than required by this Chapter, including but not limited to confirmation of the individual's:

(A) certification as a backflow prevention assembly tester,
(B) field test kit or gage equipment accuracy verification, and
(C) BPA field test result reports;

(7) a description of the procedures and timeframes of activities for responding to backflow incidents, including notification of customers, and reporting of backflow incidents pursuant to CCCPH section 3.5.2;
(8) contact information for cross-connection control personnel including the cross-connection control program coordinator;
(9) maintaining a tracking system with current and relevant information, including:

(A) recordkeeping information required pursuant to CCCPH section 3.5.1,
(B) location and type of each BPA,
(C) location and type of each non-testable backflow preventer used for internal protection in accordance with the California Plumbing Code, if applicable, and
(D) potential hazard from which a BPA is protecting the public water system distribution system;

(10) for user supervisors, if used, the required information pursuant to CCCPH section 3.2.2(f);
(11) the corrective actions, including timeframes for the corrective actions, that a noncommunity water system will implement when:

(A) a cross-connection exists and the BPA installed is not commensurate with the user premises' hazard or no BPA has been installed, or
(B) a BPA or non-testable backflow preventer needs to be replaced or maintained;

(12) a description of the public outreach and education program to comply with CCCPH section 3.1.3(a)(9); and,
(13) the procedures for coordination with local entities (e.g., local health departments with internal cross-connection control programs, building officials, plumbing officials, etc.).

(d) A PWS must ensure its Cross-Connection Control Plan is, at all times, representative of the current operation of its Cross-Connection Control program. The PWS must make its Cross-Connection Control Plan available to the State Water Board for review upon request. If a PWS makes a substantive revision to its Cross-Connection Control Plan, the PWS must submit the revised Cross-Connection Control Plan to the State Water Board for review.

Article 2 – Hazard Assessments and Required Protection

3.2.1 Hazard Assessments

(a) To evaluate the potential for backflow into the PWS, each community water system must conduct an initial hazard assessment of the user premises within its service area and each noncommunity water system must conduct an initial hazard assessment of its water distribution system. The hazard assessment must consider:

(1) The existence of cross-connections;
(2) the type and use of materials handled and present, or likely to be, on the user premises;
(3) the degree of piping system complexity and accessibility;
(4) access to auxiliary water supplies, pumping systems, or pressure systems;
(5) distribution system conditions that increase the likelihood of a backflow event (e.g., hydraulic gradient differences impacted by main breaks and high water-demand situations, multiple service connections that may result in flow-through conditions, etc.);
(6) user premises accessibility;
(7) any previous backflow incidents on the user premises; and
(8) the requirements and information provided in the CCCPH.

(b) Each hazard assessment must identify the degree of hazard to the PWS's distribution system as either a high hazard cross-connection, a low hazard cross-connection, or having no hazard. Examples of some high hazard cross-connection activities may be found in Appendix D.

(c) The hazard assessment must determine whether an existing BPA, if any, provides adequate protection based on the degree of hazard.

(d) Hazard assessments completed prior to the adoption of the CCCPH may be considered as an initial hazard assessment provided that such hazard assessments and associated backflow protection provide protection consistent with the CCCPH and the PWS describes their review of these assessments in the Cross-Connection Control Plan required in CCCPH section 3.1.4.

(e) Subsequent to the initial hazard assessment described in subsection (a), a community water system must perform a hazard assessment under the following criteria:

(1) if a user premises changes account holder, excluding single-family residences;
(2) if a user premises is newly or re-connected to the PWS;
(3) if evidence exists of changes in the activities or materials on a user's premises;
(4) if backflow from a user's premises occurs;
(5) periodically, as identified in the PWS's Cross-Connection Control Plan required pursuant to CCCPH section 3.1.4.;

(6) if the State Water Board requests a hazard assessment of a user's premises; and
(7) if the PWS concludes an existing hazard assessment may no longer accurately represent the degree of hazard.

(f) Noncommunity water systems must conduct an initial or follow-up hazard assessment within two years of the adoption of the CCCPH.

(g) Noncommunity water system must conduct a follow-up hazard assessment of its water distribution system if any changes are made that could result in a cross-connection or any backflow incidents occur.

(h) A cross-connection control specialist must review or conduct each initial and follow-up hazard assessment pursuant to this section and make a written finding that, in the specialist's judgment based on cross-connection control principles, the PWS's hazard assessment properly identified all hazards at the time of the assessment, the appropriate degree of hazards, and the corresponding backflow protection.

3.2.2 Backflow Protection Required

(a) A PWS must ensure its distribution system is protected from backflow from identified hazards through the proper installation, continued operation, and field testing of an approved BPA (see Article 3 for installation and approved BPA criteria). When a DC is required or referenced in the CCCPH, a DCDA or DCDA-II type of assembly may be substituted if appropriate. When an RP is required or referenced in the CCCPH, an RPDA or RPDA-II type of assembly may be substituted if appropriate.

(b) The BPA installed must be no less protective than that which is commensurate with the degree of hazard at a user premises, as specified in this Chapter and as determined based on the results of the hazard assessment conducted pursuant to CCCPH section 3.2.1.

(c) Unless specified otherwise in this Chapter, a PWS must, at all times, protect its distribution system from high hazard cross-connections (see Appendix D for examples), through premises containment, through the use of AG(s) or RP(s).

(1) Following State Water Board review and approval, a PWS may implement an alternate method of premises containment in lieu of a required AG provided that the proposed alternative would not increase the level of risk to protection of public health.
(2) Following State Water Board review and approval, a PWS may accept internal protection in lieu of containment when premises containment is not feasible.

(d) Except as otherwise allowed or prohibited in statute or in CCR Title 22, Division 4, Chapter 3, a swivel-ell may be used instead of an AG for premises containment protection when temporarily substituting tertiary recycled water use areas with potable water from a PWS if all the following criteria are met:

(1) the swivel-ell is approved by the State Water Board;
(2) the PWS has a cross-connection control program, required pursuant to CCCPH section 3.1.3, and the use and operation of the swivel-ell is described in the Cross-Connection Control Plan required pursuant to CCCPH section 3.1.4;
(3) the design and construction-related requirements of the swivel-ell adheres to the criteria in Appendix C;
(4) at least every 12 months, inspections are performed and documented to confirm ongoing compliance with the design and construction-related requirements in Appendix C;
(5) the RP used in conjunction with the swivel-ell is field tested and found to be functioning properly:

(A) immediately upon each switchover to potable water use, a visual inspection of the RP must be completed
(B) within 72 hours of each switchover to potable water use, a field test must be completed, and
(C) at least every 12 weeks the use site is supplied with potable water; and

(6) there is a legally binding agreement between the PWS and the entity supplying the recycled water, signed by those with relevant legal authority, that includes the following requirements:

(A) The State Water Board will be notified within 24 hours of all switchovers to or from potable water, will be given an estimate of the timeframe until the next switchover, and will be provided the results of the field testing required in paragraph (5);
(B) a trained representative of the PWS be present to supervise each switchover; and
(C) within seven days of each switchover, if requested by the State Water Board, the PWS will submit a written report describing compliance with this subsection, as well as potable and recycled water usage information.

(e) Except as noted below, a PWS must ensure its distribution system is protected with no less than DC protection for a user premises with a fire protection system within ten years of adoption of the CCCPH.

(1) A high hazard cross-connection fire protection system, including but not limited to fire protection systems that may utilize chemical addition (e.g., wetting agents, foam, anti-freeze, corrosion inhibitor, etc.) or an auxiliary water supply, must have no less than RP protection.

(2) For existing fire protection systems that do not meet Section 3.2.2 (e)(3) or cannot install DC protection within ten years of adoption of the CCCPH, a PWS may propose in the cross-connection control plan submitted for CCCPH Section 3.1.4:

(A) an alternative date; or
(B) an alternative method of backflow protection that provides at least the same level of protection to public health.

(3) A BPA is not necessary for a low hazard fire protection system on a residential user premises if the following criteria are satisfied:

(A) the user premises has only one service connection to the PWS;
(B) a single service line onto the user premises exists that subsequently splits on the property for domestic flow and fire protection system flow, such that the fire protection system may be isolated from the rest of the user premises;
(C) a single, water industry standard, water meter is provided to measure combined domestic flow and fire protection system flow;
(D) the fire protection system is constructed of piping materials certified as meeting NSF/ANSI Standard 61; and
(E) the fire protection system's piping is looped within the structure and is connected to one or more routinely used fixtures (such as a water closet) to prevent stagnant water.

(f) The State Water Board and PWS may, at their discretion, require a water user to designate a user supervisor when the user premises has a multi-piping system that conveys various types of fluids and where changes in the piping system are frequently made. If a user supervisor is designated the following is required:

(1) The user supervisor is responsible for the avoidance of cross-connections during the installation, operation and maintenance of the water user's pipelines and equipment. The user supervisor must be trained on the fluids used and backflow protection for the premise, and must inform the PWS of changes in piping, and maintain current contact information on file with the PWS; and
(2) The PWS must include in the Cross-Connection Control Plan required in CCCPH section 3.1.4 the training and qualification requirements for user supervisors, identify the entity that will provide the user supervisor training, and frequency of any necessary recurring training. The training must adequately address the types of hazards and concerns typically found.

(g) Facilities producing, treating, storing, or distributing drinking water that are an approved water supply or water recycling plants as defined by CCR Title 22, Section 60301.710 must have proper internal protection from cross-connections to ensure that all drinking water produced and delivered to customers and workers at those facilities is free from unprotected cross-connections.

Article 3 – Backflow Prevention Assemblies

3.3.1 Standards for Types of Backflow Protection

(a) The PWS must ensure that each AG used for its Cross-Connection Control Program meets the requirements in Table 1, Minimum Air Gaps for Generally used Plumbing Fixtures, page 4 of the American Society of Mechanical Engineers (ASME) A112.1.2-2012(R2017) (See Appendix B).

(b) The PWS must ensure that each replaced or newly installed PVB, SVB, DC, and RP for protection of the PWS is approved through both laboratory and field evaluation tests performed in accordance with at least one of the following:

> (1) Standards found in Chapter 10 of the *Manual of Cross-Connection Control, Tenth Edition*, published by the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research; or
> (2) certification requirements for BPAs in the Standards of ASSE International current as of 2022 that include ASSE 1015-2021 for the DC, ASSE 1048-2021 for the DCDA & DCDA-II, ASSE 1013-2021 for the RP, and ASSE 1047-2021 for the RPDA & RPDA-II and must have the 1YT mark.

(c) BPAs must not be modified following approval granted under section 3.3.1 (b). PWS must require BPA testers to notify the PWS if a water user or PWS-owned BPA has been modified from the CCCPH section 3.3.1 (b) approval.

3.3.2 Installation Criteria for Backflow Protection

(a) For AGs, the following is required:

> (1) The receiving water container must be located on the water user's premises at the water user's service connection unless an alternate location has been approved by the PWS;
> (2) all piping between the water user's service connection and the discharge location of the receiving water container must be above finished grade and be accessible for visual inspection unless an alternative piping configuration is approved by the PWS;
> (3) the PWS must ensure that the AG specified in CCCPH section 3.3.1 (a) has been installed; and
> (4) any new air gap installation at a user's service connection must be reviewed and approved by the State Water Board prior to installation.

(b) RPs must be installed such that the lowest point of an assembly is a minimum of twelve inches above grade, and a maximum of thirty-six inches above the finished grade, unless an alternative is approved by the PWS.

(c) DCs installed or replaced after the adoption of the CCCPH must be installed according to CCCPH section 3.3.2 (b). Below ground installation can be considered if approved by the PWS where it determines no alternative options are available.

(d) A PVB or SVB must be installed a minimum of twelve inches above all downstream piping and outlets.

(e) SVBs may not be used for premises containment. PVBs may only be used for roadway right of way irrigation systems as premises containment where there is no potential for backpressure.

(f) A RP or DC installed after the adoption of the CCCPH must have a minimum side clearance of twelve inches, except that a minimum side clearance of twenty-four inches must be provided on the side of the assembly that contains the test cocks. The PWS may approve alternate clearances providing that there is adequate clearance for field testing and maintenance.

(g) Backflow protection must be located as close as practical to the water user's service connection unless one or more alternative locations have been approved by the PWS. If internal protection is provided in lieu of premises containment, the PWS must obtain access to the user premises and must ensure that the on-site protection meets the requirements of this Chapter for installation, field testing, and inspections.

(h) Each BPA and air gap separation must be accessible for field testing, inspection, and maintenance.

3.3.3 Field Testing and Repair of Backflow Prevention Assemblies and Air Gap Inspection

(a) PWS must ensure that all BPAs installed for its Cross-Connection Control Program are field tested following installation, repair, depressurization for winterizing, or permanent relocation. All required field testing must be performed by certified backflow prevention assembly testers.

(b) BPAs must be field tested at least annually. The CCCPH does not preclude a PWS, the State Water Board, or a local health agency from requiring more frequent field testing for premises with high hazard cross-connection or BPA at increased risk of testing failure.

(c) Air-gap separations must be visually inspected at least annually to determine compliance with this Chapter by persons certified as backflow prevention assembly testers or certified as a cross-connection control specialist pursuant to this Chapter.

(d) PWS must receive passing field tests before providing continuous service to a water user with a newly installed BPA.

(e) PWS must ensure that BPAs that fail the field test are repaired or replaced within 30 days of notification of the failure. Extensions may be allowed by the PWS if included as part of the Cross-Connection Control Plan.

(f) PWS must require backflow prevention assembly testers to notify the PWS as soon as possible within 24 hours if a backflow incident or an unprotected cross-connection is observed at the BPA or prior to the user premises during field testing. PWS must immediately conduct an investigation and discontinue service to the user premises if a backflow incident is confirmed, and water service must not be restored to that user premises until the PWS receives a confirmation of a passing BPA field test from a backflow prevention assembly tester and the assembly is protecting the PWS.

Article 4 – Backflow Prevention Assembly Testers and Cross-Connection Control Specialists

3.4.1 Backflow Prevention Assembly Tester Certification

(a) A PWS must ensure that each BPA required by this Chapter to protect the public water system is field tested by a person with valid certification from a certifying organization recognized by the State Water Board pursuant to this Article.

(b) A State Water Board-recognized organization certifying backflow prevention assembly testers is one that has a certification process that, at a minimum, includes the following:

(1) A timed and proctored written[6] exam, using a closed-book, objective grading format, consisting of no less than 100 questions for initial certification and no less than 50 questions for recertification. A passing score must be achieved by an examinee as a requirement for certification.

(A) Written exam proctors must:

1. not provide an examinee any assistance in answering exam questions, verbal or otherwise; and
2. be impartial.

(B) Passing scores for the written exams are to be determined prior to exam sessions, such that passing a written exam demonstrates sufficient knowledge of subjects associated with the proper field testing of BPAs, including but not limited to:

1. the hydraulics and theory of backflow;
2. California's laws, regulations, and requirements related to cross-connection control;
3. types of BPA field test equipment and the need to verify accuracy, at least annually and when otherwise necessary, to ensure accuracy of field test results;
4. field test procedures for an RP, RPDA, RPDA-II, DC, DCDA, DCDA-II, PVB, and SVB using the procedures provided in the *Manual of Cross-Connection Control, Tenth Edition,* published by the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research or equivalent;
5. identification of improperly functioning BPAs (i.e., diagnostics or troubleshooting); and
6. recordkeeping and safety.

[6] The requirement for a written exam does not preclude using computerized exams.

(2) A performance (i.e., hands-on) exam, using a closed-book, objective grading process and the field test procedures in paragraph (1)(B)(4), designed such that passing the performance exam demonstrates proficiency in accurately determining the operating condition of an RP, DC, PVB, and SVB, when properly or improperly functioning, including but not limited to BPAs with leaks in shutoff valves, and failures in check valves, air inlet valves, or relief valves. A passing score must be achieved by an examinee as a requisite for certification. The performance exam process must include the following:

(A) Performance exam proctors must:

1. be certified as a backflow prevention assembly tester pursuant to this Article;
2. evaluate no more than one examinee at a time;
3. not provide an examinee any assistance in answering exam questions, verbal or otherwise;
4. provide no indication an examinee has erred until completion of a BPA field test, at which time only the fact the examinee has erred may be indicated (i.e., not the nature of the error);
5. be impartial and not affiliated with the certifying organization's preparation of, or preparatory course for (if applicable), the performance exam; and
6. not evaluate an examinee who was trained by the proctor during the six-month period prior to the exam or other conflict of interest.

(B) An examinee is considered to have failed a performance exam if the examinee:

1. makes a field test procedure or recording error that could impact an accurate determination of the operating condition of a BPA,
2. completes the BPA performance exam form with an error,
3. is informed of making an error (see subparagraph (A)(4)) and begins the procedure a second time, and
4. errs a second time and completes the BPA performance exam form accordingly.

(3) recertification requirements of no less frequently than every three years which includes both a written and performance exam;
(4) provisions for revocation of a backflow prevention assembly tester's certification, including but not limited to, revocation for falsifying field test results or field test reports;

(5) a website providing public access to the most recent list of backflow prevention assembly testers:

(A) who hold a valid certification from the certifying organization. At a minimum, the list is to include each backflow prevention assembly tester's last name, first name, certification number, and the date on which each backflow prevention assembly tester's certification expires; and
(B) whose certification was revoked, pursuant to paragraph (4), in the three years preceding the date of the list. At a minimum, the list is to include each backflow prevention assembly tester's last name, first name, revoked certification number, the date on which each backflow prevention assembly tester's certification was revoked, and the reason for revocation.

(6) as a prerequisite to sections 3.4.1(b)(1) and (b)(2), completion of an instructional training course accepted by the certifying organization[7] that covers the subjects in subsection (1)(B) and is no less than 30 hours in length over no fewer than four days for:

(A) a backflow prevention assembly tester's initial certification;
(B) a backflow prevention assembly tester's recertification as a result of revocation; or

(7) In lieu of compliance with section 3.4.1(b)(6) a certifying organization may accept two years prior experience in backflow prevention assembly testing.

(c) To be recognized by the State Water Board as a certifying organization for backflow prevention assembly testers, a certifying organization shall:

(1) submit an application with the following information to the State Water Board for review:

(A) written documentation of a certification program that includes a process that is no less stringent than the criteria in subsection (b);
(B) evidence that the organization's certification program and exam process has been reviewed, with concerns adequately addressed, by a credentialed psychometrician proficient in the design of objective exams, experienced in the assessment of certification or licensing organizations, and familiar with the application of the requirements of *ISO*[8]*/IEC*[9]
(C) a written statement, signed by the certifying organization's representative(s) having the authority and legal responsibility for operation of the certifying organization, attesting that the certifying organization will implement its certification program in a manner meeting or exceeding the

[7] But not limited only to training provided by the certifying organization or its affiliates.
[8] International Organization for Standardization
[9] International Electrotechnical Commission

criteria in subsection (b) and consistent with the application submitted to the State Water Board.

(2) adequately address each State Water Board comment and/or question concerning the application, and
(3) receive written acknowledgment from the State Water Board that the application is complete.

(d) An American National Standards Institute (ANSI)-accredited certifying organization, accredited in accordance with subsection (b) and ISO/IEC 17024, will be considered to be a State Water Board-recognized certifying organization. Beginning three years after the effective date of the CCCPH, only those testers with a valid certification from an ANSI-accredited certifying organization shall satisfy subsection (a) and certifications obtained by organizations in accordance with subsection (c) will be invalid.

(e) This Article does not preclude a local health agency from maintaining a backflow prevention assembly tester certification program for the field testing of BPAs within the local health agency's jurisdiction. Accepting a tester certified by a local health agency does not relieve a PWS from meeting the requirements of this Article.

(f) This Article does not preclude a PWS from disallowing the use of an individual tester certified pursuant to this Article if the PWS has reason to believe a certified tester may not be proficient in accurately determining the operating condition of BPA, or for any other reason (e.g., fraud, deceit, negligence, misconduct, etc.). A PWS must report any evidence of a tester falsifying reports to that tester's certifying organization.

(g) This Article is effective July 1, 2025.

3.4.2 Cross-Connection Control Specialist Certification

(a) A PWS must ensure that cross-connection control specialists, used pursuant to the CCCPH, have valid certification from a certifying organization recognized by the State Water Board pursuant to this Article.

(b) A State Water Board-recognized organization certifying cross-connection control specialists is one that has a certification process that, at a minimum, includes the following:

(1) A timed and proctored, written[10] exam, using a closed-book, objective grading format, consisting of no less than 100 questions for certification. A passing score must be achieved by an examinee as a requirement for certification.

(A) Written exam proctors must:

1. not provide an examinee any assistance in answering exam questions, verbal or otherwise; and
2. be impartial.

(B) Passing scores for the exams are to be determined prior to exam sessions, such that passing an exam demonstrates sufficient and comprehensive range of knowledge of the subjects provided in Appendix E, as they may relate to cross-connection control and the causes, effects, and prevention of backflow.

(2) recertification requirements of no less frequently than every three years. Recertification may be done through at least one of the following:

(A) an exam as required by section 3.4.2 (b)(1),
(B) through 12 contact hours from continuing education courses covering material in Appendix E or,
(C) a combination of exam and continuing education contact hours equivalent to (A) or (B);

(3) provisions for revocation of a specialist's certification, including but not limited to, falsifying information or providing negligent recommendations inconsistent with industry-standard cross-connection control guidelines;
(4) a website providing public access to the most recent list of cross-connection control specialists:

(A) who hold a valid certification from the certifying organization. At a minimum, the list is to include each specialist's last name, first name, certification number, and the date on which each specialist's certification expires; or

[10] The requirement for a written exam does not preclude using computerized exams.

(B) whose certification was revoked, pursuant paragraph (3), in the three years preceding the date of the list. At a minimum, the list is to include each specialist's last name, first name, revoked certification number, the date on which each specialist's certification was revoked, and the reason for revocation.

(5) initial certification requirements:

(A) a valid backflow prevention assembly tester certification from a certification organization recognized by the State Water Board pursuant to section 3.4.1; and
(B) completion of an instructional training course (acceptable to the certifying organization[11]) that covers the subjects in Appendix E and is no less than 30 hours in length over no fewer than five days (inclusive of an exam, if provided). This paragraph does not preclude a certification organization from providing the instructional training course to the public, including certified specialists.
(C) As an alternative to (A) the certifying organization may accept additional instruction in the subject areas of testing, maintaining and repairing BPAs equivalent in length and scope to the requirements in 3.4.1(b)(6).
(D) As an alternative to (A) the certifying organization may accept a minimum of five (5) years documented experience performing cross-connection control specialist duties, as outlined in Appendix E.

(c) To be recognized by the State Water Board as a certifying organization for cross-connection control specialists, a certifying organization shall:

(1)submit an application with the following information to the State Water Board for review:

(A) Written documentation of a certification program that includes a process that is no less stringent than the criteria in subsection (b);
(B) evidence that the organization's certification program and exam process has been reviewed, with concerns adequately addressed, by a credentialed psychometrician proficient in the design of objective exams, experienced in the assessment of certification or licensing organizations, and familiar with the application of the requirements of *ISO[12]/IEC[13] 17024: Conformity Assessment- General Requirements for Bodies Operating Certification of Persons*; and

[11] But not limited only to training provided by the certifying organization or its affiliates.
[12] International Organization for Standardization
[13] International Electrotechnical Commission

(C) a written statement, signed by the certifying organization's representative(s) having the authority and legal responsibility for operation of the certifying organization, attesting that the certifying organization will implement its certification program in a manner meeting or exceeding the criteria in subsection (b) and consistent with the application submitted to the State Water Board.

(2) adequately address each State Water Board comment and question concerning the application, and
(3) receive a written acknowledgment from the State Water Board that the application is complete:

(d) A certifying organization, accredited by the American National Standards Institute (ANSI) in accordance with ISO/IEC 17024, which complies with subsection (b), will be considered to be a State Water Board-recognized certifying organization. Beginning three years after the effective date of the CCCPH, only those specialists with a valid certification from an ANSI-accredited certifying organization shall satisfy subsection (a) and certifications obtained by organizations in accordance with subsection (c) will be invalid.

(e) This Article does not preclude a local health agency from maintaining a cross-connection control specialist certification program for specialists within the local health agency's jurisdiction. Using a specialist certified by a local health agency does not relieve a PWS from meeting the requirements of this Article.

(f) This Article does not preclude a PWS from disallowing the use of an individual cross-connection control specialist certified pursuant to this Article if the PWS has reason to believe a certified specialist may not be proficient in their knowledge of cross-connection control and the causes, effects, and prevention of backflow, or for any other reason (e.g., fraud, deceit, negligence, misconduct, etc.). A PWS must report any evidence of a specialist falsifying reports to that specialist's certifying organization.

(g) This Article is effective July 1, 2025.

Article 5 – Recordkeeping, Backflow Incident Response, and Notification

3.5.1 Recordkeeping

(a) Each PWS must maintain the following records:

(1) The two most recent hazard assessments for each user premise, conducted pursuant to CCCPH section 3.2.1 (Hazard Assessment);
(2) for each BPA, the associated hazard or application, location, owner, type, manufacturer and model, size, installation date, and serial number;
(3) for each AG installation, the associated hazard or application and the location, owner, and as-built plans of the AG;
(4) results of all BPA field testing, AG inspection, and swivel-ell inspections and field tests for the previous three calendar years, including the name, test date, repair date, and certification number of the backflow prevention assembly tester for each BPA field test and AG and swivel-ell;
(5) repairs made to, or replacement or relocation of, BPAs for the previous three calendar years;
(6) the most current cross-connection tests (e.g. shutdown test, dye test);
(7) if a user supervisor is designated for a user premise, the current contact information for the user supervisor and water user, and any applicable training and qualifications as described by CCCPH section 3.2.2(f);
(8) descriptions and follow-up actions related to all backflow incidents;
(9) if any portion of the cross-connection control program is carried out under contract or agreement, a copy of the current contract or agreement;
(10) the current Cross-Connection Control Plan as required in CCCPH section 3.1.4.; and
(11) any public outreach or education materials issued as required in CCCPH section 3.1.3.(a)(9) for the previous three calendar years.

(b) All information in subsection (a) must be available to the State Water Board upon request.

3.5.2 Backflow Incident Response Procedure

Each PWS must include backflow incident response procedures in the Cross-Connection Control Plan required in CCCPH section 3.1.4. The PWS must describe its procedures for investigating and responding to suspected backflow incidents including, but not limited to, the following:

(a) Consideration of complaints or reports of changes in water quality as possible incidents of backflow;

(b) Water quality sampling and pressure recording; and

(c) Documentation of the investigation, and any response and follow-up activities.

3.5.3 Backflow Incident Notification

(a) Each PWS must notify the State Water Board and local health agencies of any known or suspected incident of backflow within 24 hours of the determination. If required by the State Water Board, a PWS must issue a Tier 1 public notification pursuant to CCR, Title 22, Section 64463.1.

(b) If required by the State Water Board, the PWS must submit, by a date specified by the State Water Board, a written incident report describing the details and affected area of the backflow incident, the actions taken by the PWS in response to the backflow incident, and the follow up actions to prevent future backflow incidents. The written report must contain, at a minimum, the information requested in Appendix F.

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Appendix

Appendix A: Assembly Bill 1671 (2017, Chapter 533) and Assembly Bill 1180 (2019, Chapter 455).
Appendix B: ASME A112.1.2-2012(R2017) Table 1, Minimum Air Gaps for Generally used Plumbing Fixtures, page 4
Appendix C: Backflow Prevention Assembly Diagrams
Appendix D: High Hazard Premises
Appendix E: General Range of Knowledge for Cross-Connection Control Specialists
Appendix F: Example Backflow Incident Reporting Form
Appendix G: Related Statutes and Regulations

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Appendix A

Assembly Bill 1671 (2017, Chapter 533)
Assembly Bill 1180 (2019, Chapter 455)

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Assembly Bill No. 1671

CHAPTER 533

An act to amend Section 116810 of, and to add Sections 116407 and 116555.5 to, the Health and Safety Code, relating to drinking water.

[Approved by Governor October 6, 2017. Filed with Secretary of State October 6, 2017.]

LEGISLATIVE COUNSEL'S DIGEST

AB 1671, Caballero. Backflow protection and cross-connection controls: standards.

(1) Existing law, the California Safe Drinking Water Act, requires the State Water Resources Control Board to administer provisions relating to the regulation of drinking water to protect public health, including, but not limited to, conducting research, studies, and demonstration projects relating to the provision of a dependable, safe supply of drinking water, enforcing the federal Safe Drinking Water Act, adopting regulations, and conducting studies and investigations to assess the quality of private domestic water wells. Existing law makes certain violations of the act a misdemeanor.

Existing law requires any person who owns a public water system to ensure that the system does certain things, including, but not limited to, that it will not be subject to backflow under normal operating conditions. Existing law, to ensure that testing and maintenance of backflow prevention devices are performed by persons qualified to do testing and maintenance, authorizes local health officers to maintain programs for certification of backflow prevention device testers and requires the certification program to be consistent with backflow protection regulations adopted by the state board. A violation of these provisions, or an order by a local health officer pursuant to these provisions, is a misdemeanor.

This bill would require a public water system to implement a cross-connection control program that complies with, and would require the certification program to be consistent with, applicable regulations and the standards described in (2).

(2) Existing regulations establish standards for a backflow prevention device and cross-connection control.

This bill, on or before January 1, 2020, would require the state board to adopt standards for backflow protection and cross-connection control and would authorize the state board to do so through the adoption of a policy handbook, as specified. By authorizing the state board to adopt standards, the violation of which would be a crime, the bill would create a new crime and impose a state-mandated local program.

(3) The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.

This bill would provide that no reimbursement is required by this act for a specified reason.

The people of the State of California do enact as follows:

SECTION 1. Section 116407 is added to the Health and Safety Code, to read:

116407. (a) On or before January 1, 2020, the state board shall adopt standards for backflow protection and cross-connection control.

(b) The state board may implement subdivision (a) through the adoption of a policy handbook that is not subject to the requirements of Chapter 3.5 (commencing with Section 11340) of Part 1 of Division 3 of Title 2 of the Government Code. The policy handbook shall include standards for backflow protection and cross-connection control. In developing the standards and any amendments to those standards, the state board shall consult with state and local agencies and other persons whom the state board has identified as having expertise in the subject of backflow protection and cross-connection control. The state board shall hold at least two public hearings before adopting the policy handbook. The policy handbook shall be posted on the board's Internet Web site.

(c) (1) Upon the effective date of a policy handbook adopted by the state board pursuant to subdivision (b), the regulations set forth in Article 1 (commencing with Section 7583) and Article 2 (commencing with Section 7601) of Group 4 of Subchapter 1 of Chapter 5 of Division 1 of Title 17 of the California Code of Regulations shall become inoperative, and, 90 days thereafter, are repealed, unless the state board makes a determination not to repeal a specific regulation.

(2) If the state board determines not to repeal a specific regulation pursuant to paragraph (1), the state board shall provide to the Office of Administrative Law and the Secretary of State written notice of its determination, including identification of the specific regulation that is not repealed. That regulation, upon the provision of that written notice to the Office of Administrative Law and the Secretary of State, shall become operative.

SEC. 2. Section 116555.5 is added to the Health and Safety Code, to read:

116555.5. A public water system shall implement a cross-connection control program that complies with applicable regulations and with standards adopted by the board pursuant to Section 116407.

SEC. 3. Section 116810 of the Health and Safety Code is amended to read:

116810. To ensure that testing and maintenance of backflow prevention devices are performed by persons qualified to do testing and maintenance,

local health officers may maintain programs for certification of backflow prevention device testers. The local health officer may suspend, revoke, or refuse to renew the certificate of a tester, if, after a hearing before the local health officer or his or her designee, the local health officer or his or her designee finds that the tester has practiced fraud or deception or has displayed gross negligence or misconduct in the performance of his or her duties as a certified backflow prevention device tester. The local health officer may collect fees from certified testers to offset the cost of the certification program provided pursuant to this section. The certification standards shall be consistent with standards adopted by the state board pursuant to Section 116407 and any other applicable backflow protection regulations.

SEC. 4. No reimbursement is required by this act pursuant to Section 6 of Article XIII B of the California Constitution because the only costs that may be incurred by a local agency or school district will be incurred because this act creates a new crime or infraction, eliminates a crime or infraction, or changes the penalty for a crime or infraction, within the meaning of Section 17556 of the Government Code, or changes the definition of a crime within the meaning of Section 6 of Article XIII B of the California Constitution.

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Assembly Bill No. 1180

CHAPTER 455

An act to amend Section 116407 of the Health and Safety Code, and to add Section 13521.2 to the Water Code, relating to water.

[Approved by Governor October 2, 2019. Filed with Secretary of State October 2, 2019.]

LEGISLATIVE COUNSEL'S DIGEST

AB 1180, Friedman. Water: recycled water.

(1) Existing law, the California Safe Drinking Water Act, requires the State Water Resources Control Board to administer provisions relating to the regulation of drinking water to protect public health. Existing law requires, on or before January 1, 2020, the state board to adopt standards for backflow protection and cross-connection control through the adoption of a policy handbook, as specified.

This bill would require that handbook to include provisions for the use of a swivel or changeover device to supply potable water to a dual-plumbed system during an interruption in recycled water service.

(2) Existing law requires the state board to establish uniform statewide recycling criteria for each varying type of use of recycled water where the use involves the protection of public health.

This bill would require the state board, on or before January 1, 2023, as specified, to update the uniform statewide criteria for nonpotable recycled water uses.

The people of the State of California do enact as follows:

SECTION 1. The Legislature finds and declares all of the following:

(a) On December 11, 2018, the State Water Resources Control Board unanimously adopted an amendment to the policy for water quality control for recycled water, which included a goal to increase the use of recycled water in the state from 714,000 acre-feet per year in 2015 to 1,500,000 acre-feet per year by 2020 and 2,500,000 acre-feet per year by 2030.

(b) Section 13521 of the Water Code requires the state board to establish uniform statewide recycling criteria for each varying type of use of recycled water where the use involves the protection of public health.

(c) The regulations establishing the uniform statewide criteria for recycled water uses are set forth in Chapter 3 (commencing with Section 60301.050) of Division 4 of Title 22 of the California Code of Regulations. The regulations that pertain to nonpotable recycled water uses have not been updated since 2000.

(d) The regulations relating to backflow protection and cross-connection control for recycled water are set forth in Article 1 (commencing with Section 7583) and Article 2 (commencing with Section 7601) of Group 4 of Subchapter 1 of Chapter 5 of Division 1 of Title 17 of the California Code of Regulations. These regulations have not been updated since 1987.

(e) Section 1 of Chapter 533 of the Statutes of 2017 (Assembly Bill 1671 of the 2017–18 Regular Session) requires, on or before January 1, 2020, the state board to adopt backflow protection and cross-connection control standards and authorizes their implementation through a policy handbook.

(f) In order to maximize the amount of recycled water California can safely use for beneficial purposes, it is necessary to update the uniform statewide criteria for nonpotable recycled water uses and specify certain associated backflow protection and cross-connection control provisions.

SEC. 2. Section 116407 of the Health and Safety Code is amended to read:

116407. (a) On or before January 1, 2020, the state board shall adopt standards for backflow protection and cross-connection control.

(b) (1) The state board may implement subdivision (a) through the adoption of a policy handbook that is not subject to the requirements of Chapter 3.5 (commencing with Section 11340) of Part 1 of Division 3 of Title 2 of the Government Code. The policy handbook shall include standards for backflow protection and cross-connection control. In developing the standards and any amendments to those standards, the state board shall consult with state and local agencies and other persons whom the state board has identified as having expertise in the subject of backflow protection and cross-connection control. The state board shall hold at least two public hearings before adopting the policy handbook. The policy handbook shall be posted on the board's internet website.

(2) (A) The policy handbook described in this subdivision shall include provisions for the use of a swivel or changeover device to supply potable water to a dual-plumbed system during an interruption in recycled water service.

(B) The use of a swivel or changeover device shall be consistent with any notification and backflow protection provisions contained in the policy handbook.

(c) (1) Upon the effective date of a policy handbook adopted by the state board pursuant to subdivision (b), the regulations set forth in Article 1 (commencing with Section 7583) and Article 2 (commencing with Section 7601) of Group 4 of Subchapter 1 of Chapter 5 of Division 1 of Title 17 of the California Code of Regulations shall become inoperative, and, 90 days thereafter, are repealed, unless the state board makes a determination not to repeal a specific regulation.

(2) If the state board determines not to repeal a specific regulation pursuant to paragraph (1), the state board shall provide to the Office of Administrative Law and the Secretary of State written notice of its determination, including identification of the specific regulation that is not repealed. That regulation, upon the provision of that written notice to the

Office of Administrative Law and the Secretary of State, shall become operative.

SEC. 3. Section 13521.2 is added to the Water Code, to read:

13521.2. (a) On or before January 1, 2023, the state board shall update the uniform statewide criteria for nonpotable recycled water uses established in Chapter 3 (commencing with Section 60301.050) of Division 4 of Title 22 of the California Code of Regulations. The deadline imposed by this section is mandatory only if the Legislature has appropriated sufficient funds, as determined by the executive director of the state board, in the annual Budget Act or otherwise to cover the state board's costs associated with the performance of the duties imposed by this section.

(b) For purposes of the update to the uniform statewide criteria for nonpotable recycled water uses described in subdivision (a), the state board shall adopt a regulation that incorporates by reference the criteria and applicable backflow protection provisions, including the provisions for the use of a swivel or changeover device for dual-plumbed systems, that are contained in the most recently adopted version of the policy handbook adopted pursuant to Section 116407 of the Health and Safety Code and any future versions of the policy handbook.

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Appendix B

ASME A112.1.2-2012(R2017) Table 1, Minimum Air Gaps for Generally used Plumbing Fixtures, page 4

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Appendix B
ASME A112.1.2-2012(R2017) Table 1, Minimum Air Gaps for Generally used Plumbing Fixtures,[1] page 4

TABLE 1
Minimum Air Gaps for Generally used Plumbing Fixtures[4]

FIXTURES	WHERE NOT AFFECTED BY SIDEWALLS[1] (inches)	WHERE AFFECTED BY SIDEWALLS[2] (inches)
Effective opening[3] not greater than ½ of an inch in diameter	1	1 1/2
Effective openings[3] not greater than ¾ of an inch in diameter	1 1/2	2 1/4
Effective openings[3] not greater than 1 inch in diameter	2	3
Effective openings[3] greater than 1 inch in diameter	Two times the diameter of effective opening	Three times the diameter of effective opening

For SI units: 1 inch = 25.4 mm

Notes:

[1] Sidewalls, ribs, or similar obstructions do not affect air gaps where spaced from the inside edge of the spout opening at a distance exceeding three times the diameter of the effective opening for a single wall, or at a distance exceeding four times the effective opening for two intersecting walls.

[2] Vertical walls, ribs, or similar obstructions extending from the water surface to or above the horizontal plane of the spout opening other than specified in Footnote 1 above. The effect of three or more such vertical walls or ribs has not been determined. In such cases, the air gap shall be measured from the top of the wall.

[3] The effective opening shall be the minimum cross-sectional area at the seat of the control valve or the supply pipe or tubing that feeds the device or outlet. Where two or more lines supply one outlet, the effective opening shall be the sum of the cross-sectional areas of the individual supply lines or the area of the single outlet, whichever is smaller.

[4] Air gaps less than 1 inch (25.4 mm) shall be approved as a permanent part of a listed assembly that has been tested under actual backflow conditions with vacuums of 0 to 25 inches of mercury (85 kPa).

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Appendix C

Backflow Prevention Assembly Diagrams

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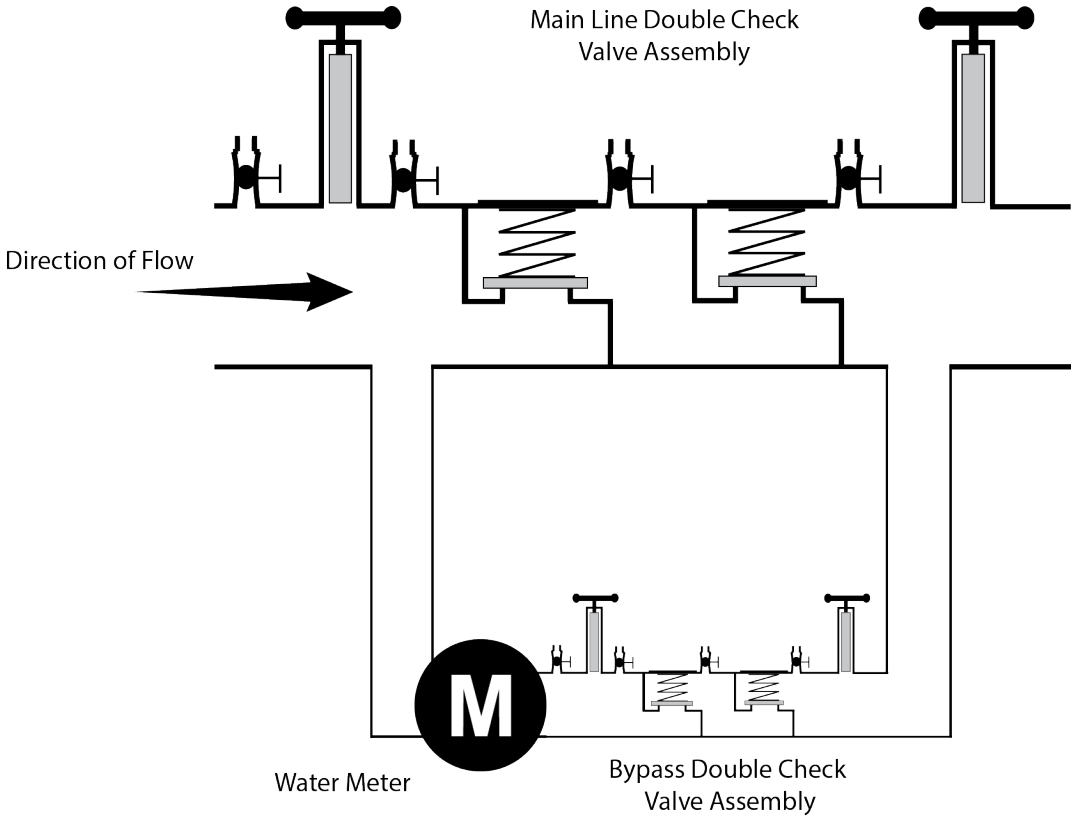
Appendix C

Diagram 1
Double check detector backflow prevention assembly[1]

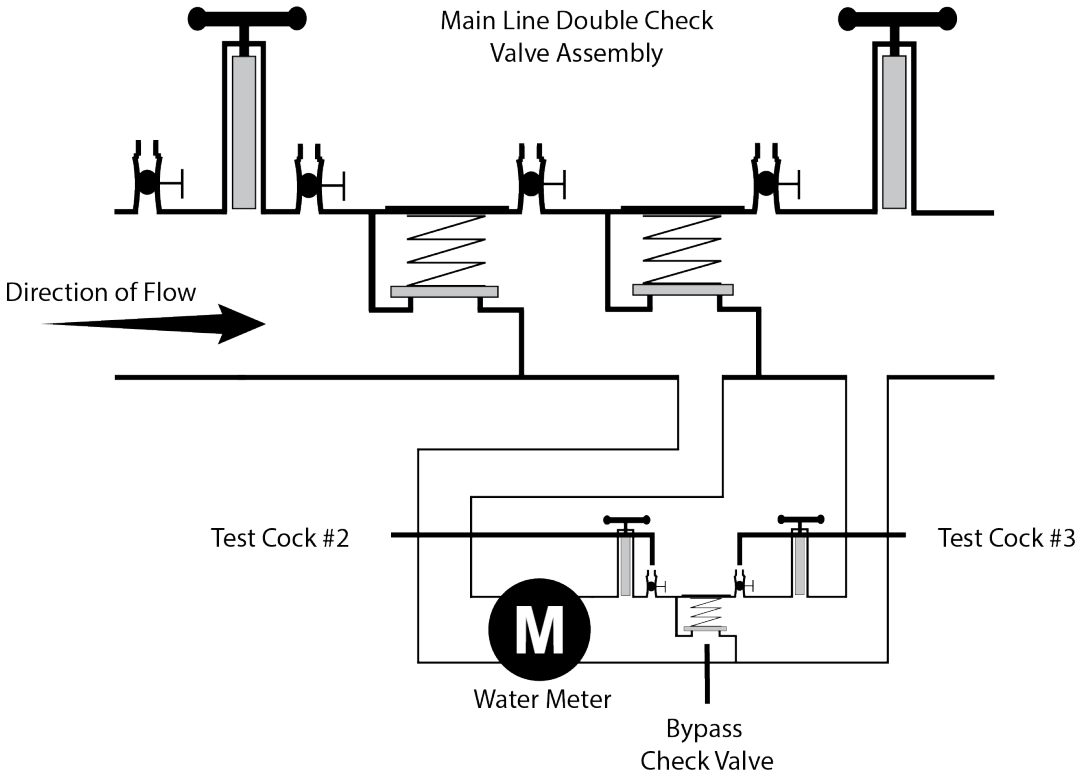


[1] © 2023 University of Southern California. Used with permission.

Appendix C

Diagram 2

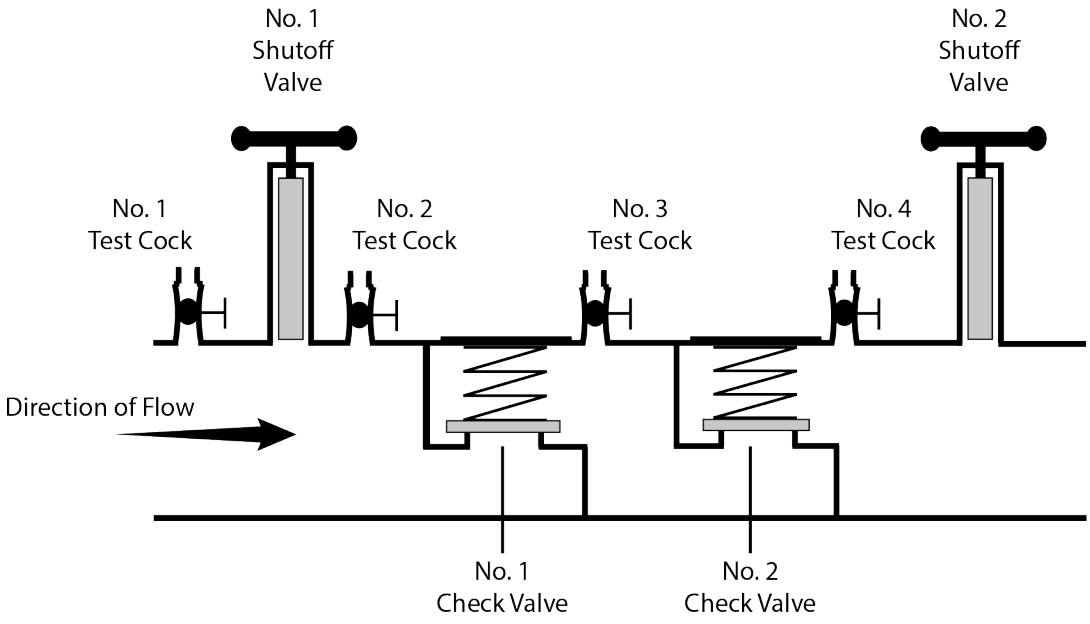
Double check detector backflow prevention assembly – type II [2]



[2] © 2023 University of Southern California. Used with permission.

Appendix C

Diagram 3
Double check valve backflow prevention assembly[3]

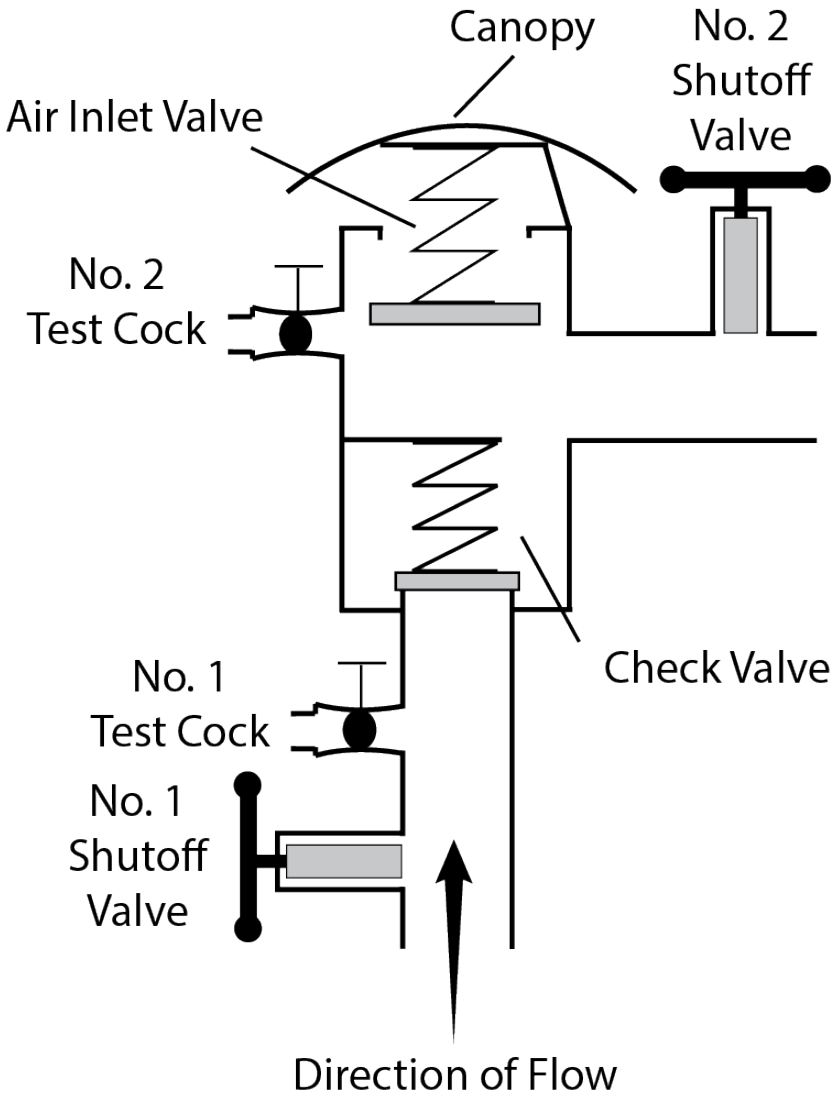


[3] © 2023 University of Southern California. Used with permission

Appendix C

Diagram 4

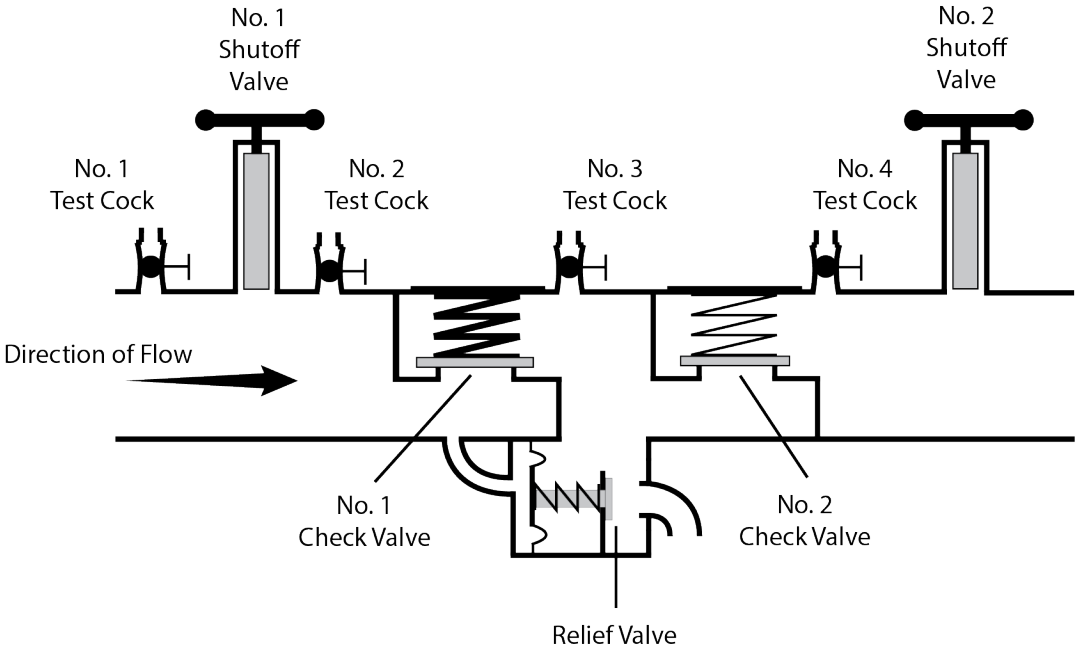
Pressure vacuum breaker backsiphonage prevention assembly [4]



[4] © 2023 University of Southern California. Used with permission

Appendix C

Diagram 5
Reduced pressure principle backflow prevention assembly [5]

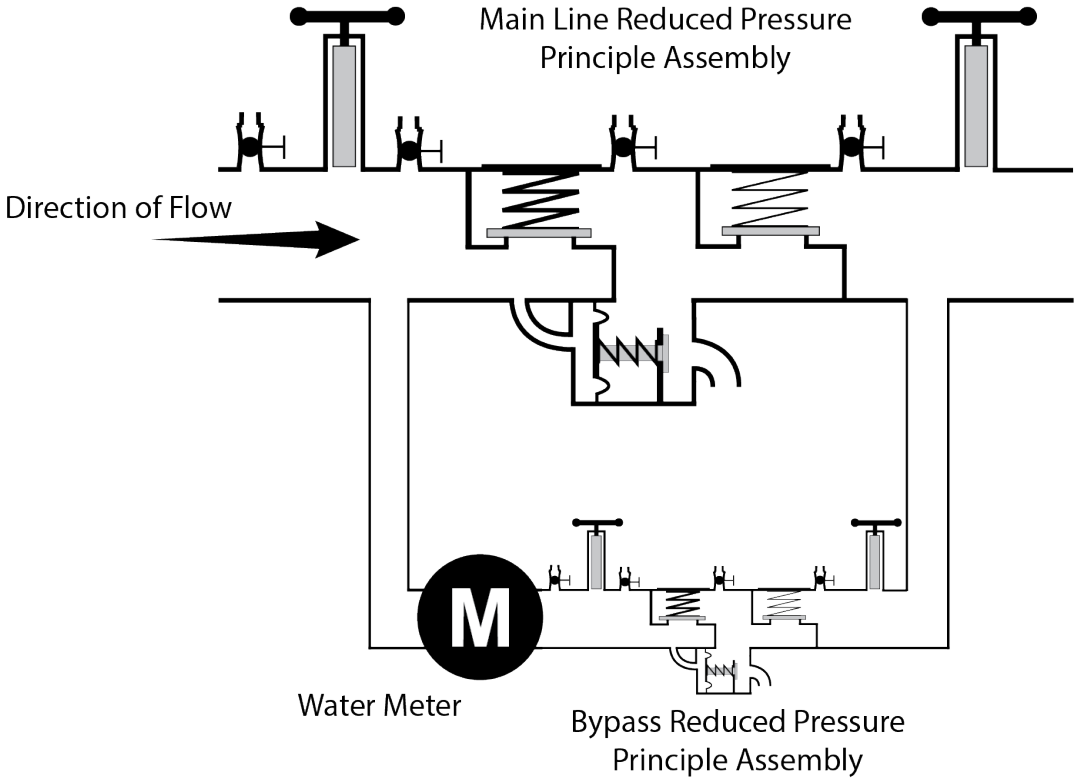


[5] © 2023 University of Southern California. Used with permission

Appendix C

Diagram 6

Reduced pressure principle detector backflow prevention assembly [6]

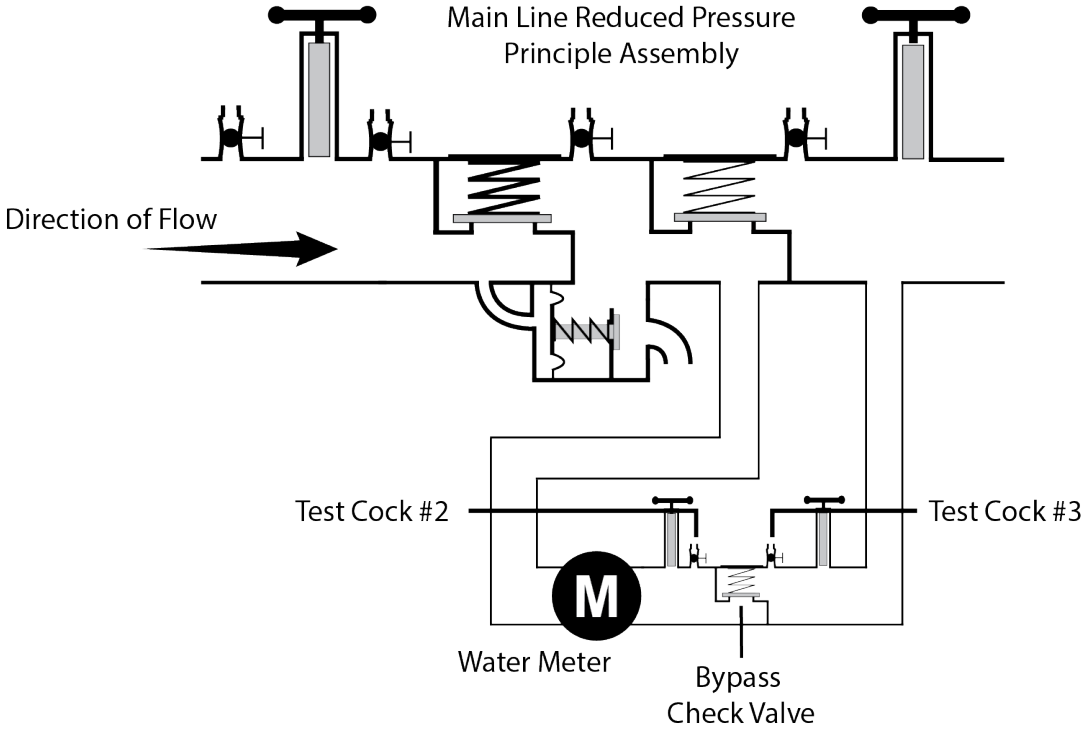


[6] © 2023 University of Southern California. Used with permission

Appendix C

Diagram 7

Reduced pressure principle detector backflow prevention assembly – type II [7]

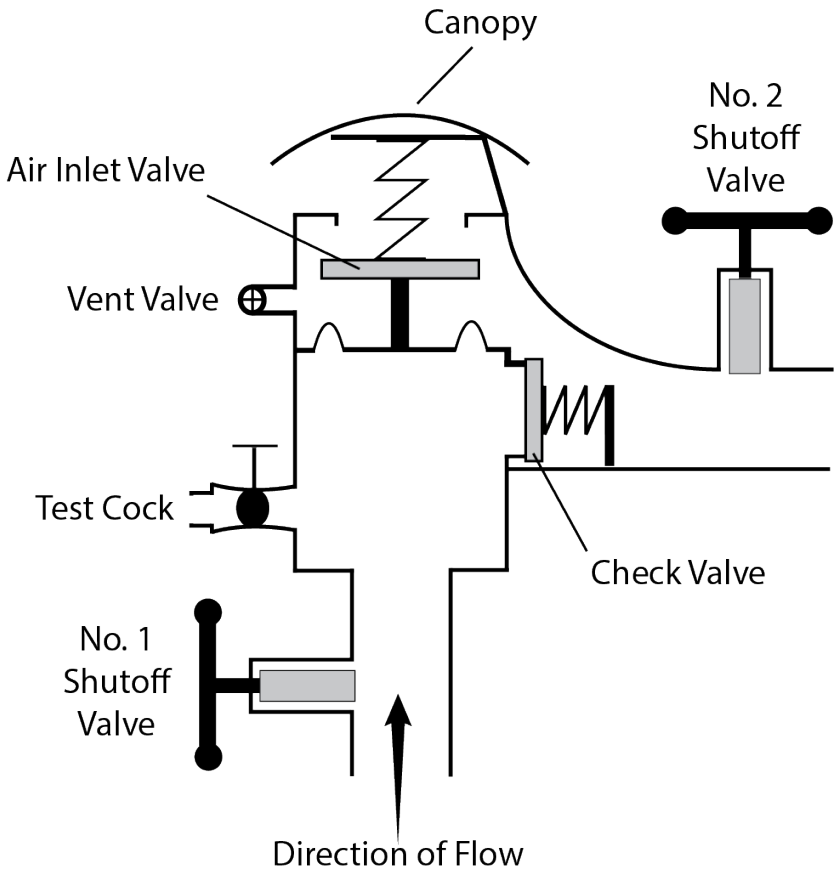


[7] © 2023 University of Southern California. Used with permission

Appendix C

Diagram 8

Spill-resistant pressure vacuum breaker backsiphonage prevention assembly [8]



[8] © 2023 University of Southern California. Used with permission

Appendix C

Swivel-Ell Design and Construction Criteria

The criteria below, in conjunction with the swivel-ell diagrams that follow (Diagrams 9a and 9b), are **minimum** acceptable design and construction-related requirements for utilizing a swivel-ell. For restrictions and allowances for utilizing a swivel-ell, see CCCPH section 3.2.2.

A. Prior to operation of a swivel-ell, the PWS will receive approval for the design and construction plans of that swivel-ell from the State Water Board.

B. The drinking water supply must not, under any circumstances, be directly connected to the recycled water supply, nor be designed such that the recycled water use site could be supplied concurrently by a recycled water supply and a drinking water supply.

C. The drinking water supply line and the recycled water supply line must be offset (see Diagram 9b) in a manner that ensures a tee-connection, spool, or other prefabricated mechanical appurtenance(s) could not be readily utilized in lieu of the swivel-ell connection, nor result in the recycled water use site being supplied concurrently by recycled water and drinking water.

D. The recycled water supply line used in conjunction with the swivel-ell must be the only recycled water supply to the recycled water use area.

E. The swivel-ell must be located as close as practical to the public water system service connection, with the swivel-ell connection being located as close as practical to the RP upstream of the swivel-ell.

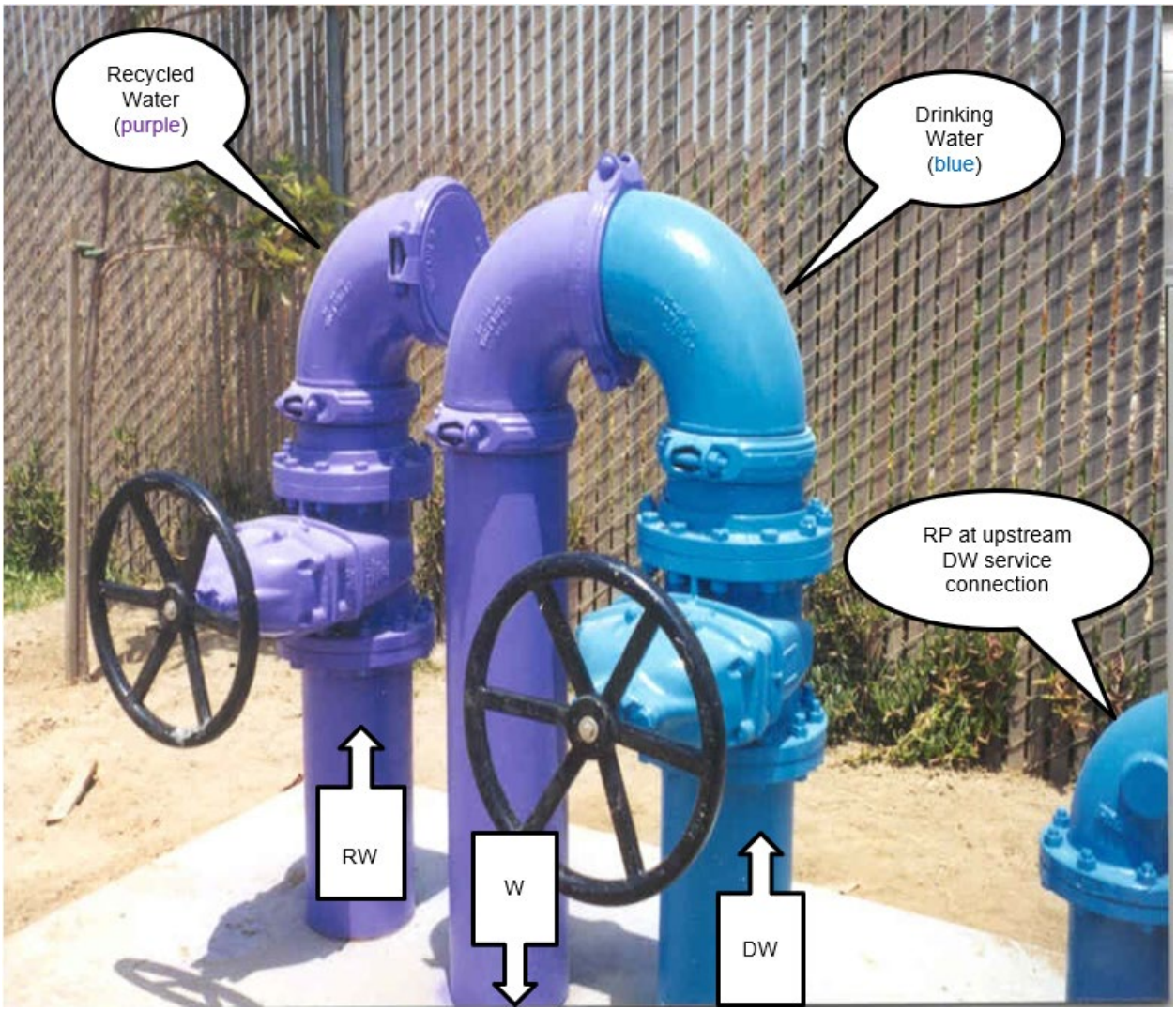
F. The swivel-ell must:

1. be located above ground;
2. be color-coded pursuant to section 116815 of the CHSC and its implementing regulations;
3. include appropriate signage, as required by regulation and the State Water Board;
4. be provided the security necessary to prevent interconnections, vandalism, unauthorized entry, etc.; and
5. be provided with meters on both the recycled water service and drinking water service connections.

Legend for Diagram 9a and 9b (also see next page)

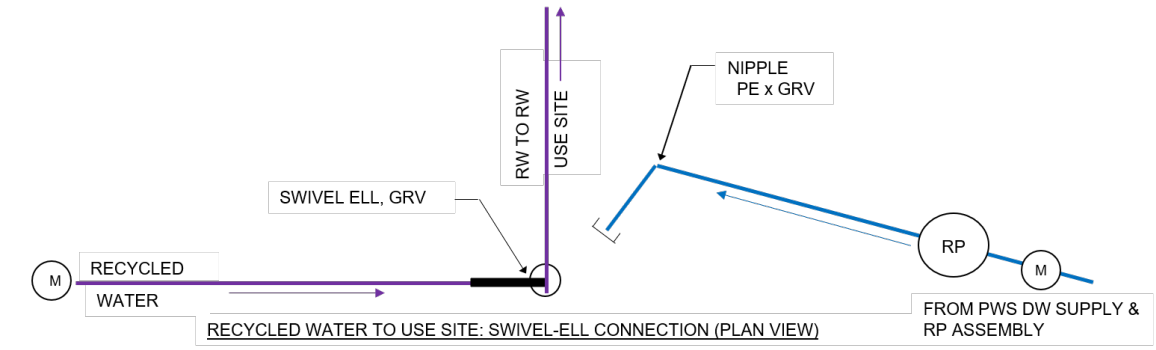
RP = Reduced pressure principle backflow prevention assembly
RW = Tertiary-treated recycled water originating from wastewater treatment facility
DW = Drinking water originating from a public water system
W = Water (tertiary recycled water **or** drinking water) to use site. As pictured, configured for supplemental drinking water to the use site.
M = Meter (*next page*)
PE = Plain End (*next page*)
GRV = Groove (*next page*)
PWS = Public Water System (*next page*)

Diagram 9a: Example Swivel-Ell Pictorial (also see Plan View Schematics)

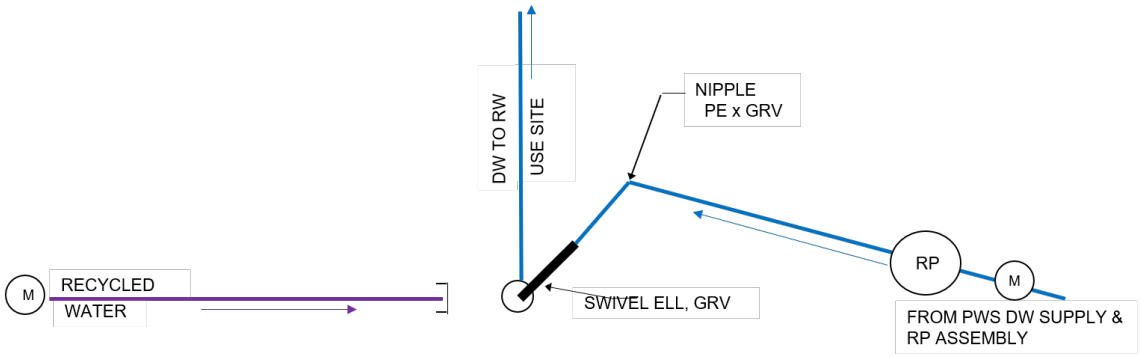


Note: The RP, a required component of an acceptable swivel-ell, is not shown in the picture.

Diagram 9b: Swivel-Ell Typical Plan View Schematics
(not intended to be an exact portrayal of the pictorial)



RECYCLED WATER TO USE SITE: SWIVEL-ELL CONNECTION (PLAN VIEW)



POTABLE WATER TO USE SITE: SWIVEL-ELL CONNECTION (PLAN VIEW)

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Appendix D

High Hazard Premises

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APPENDIX D

HIGH HAZARD CROSS-CONNECTION CONTROL PREMISES

The list below identifies premises that require backflow protection provided by an air gap or a reduced pressure principle backflow prevention assembly, unless noted otherwise. The list below is not intended to be all-inclusive. A PWS, State Water Board, or local health agency may require an AG, RP, or both to protect a PWS from other hazards not listed below and identified in premises through the hazard assessment completed in CCCPH Chapter 3, section 3.2.1. A PWS may reduce or increase the minimum protection required for a previously hazard-assessed user premise following a hazard reassessment as described in CCCPH Chapter 3, section 3.2.1.

1. Sewage handling facilities
2. Wastewater lift stations and pumping stations
3. Wastewater treatment processes, handling, or pumping equipment that is interconnected to a piping system connected to a PWS (+)
4. Petroleum processing or storage plants
5. Radioactive material storage, processing plants or nuclear reactors
6. Mortuaries
7. Cemeteries
8. Sites with an auxiliary water supply interconnected with PWS (+)
9. Sites with an auxiliary water supply not interconnected with PWS
10. Premises with more than one connection to the PWS (++++)
11. Recycled water (++)(+++)
12. Recycled water interconnected to piping system that contains water received from a PWS (+)
13. Graywater systems, as defined in California Water Code Section 14876, that are interconnected to a piping system that is connected to a PWS
14. Medical facilities
15. Kidney dialysis facilities
16. Dental office with water-connected equipment
17. Veterinarian facilities
18. Chemical plants
19. Laboratories
20. Biotech facilities
21. Electronics manufacture
22. Dry cleaner facilities
23. Industrial or commercial laundry facilities
24. Metal-plating facilities
25. Business park with a single meter serving multiple businesses
26. Marine-port facilities
27. Car wash facilities
28. Mobile home park, RV park, or campgrounds with RV hookups

29. Hotels/motels
30. Gas stations
31. Fire stations
32. Solid waste disposal facilities
33. Pet groomers
34. Agricultural premises
35. Hazard assessment access denied or restricted
36. Railroad maintenance facilities
37. Incarceration facilities (e.g. prisons)
38. Temporary connections to fire hydrants for miscellaneous uses, including construction
39. Private water distribution mains
40. Drinking water storage tank overflow connected to a sump or storm drain (+)
41. Airports

(+) Premise isolated by air gap only except as allowed through CCCPH Section 3.2.2(c)

(++) Dual-plumbed use areas established per CCR Title 22, Section 60313 through 60316.

(+++) Residences using recycled water for landscape irrigation as part of an approved dual plumbed use area established pursuant to CCR Title 22, sections 60313 through 60316 shall use, at a minimum, a DC. If the water supplier is also the supplier of the recycled water, then the recycled water supplier may obtain approval of the local public water supplier or the State Water Board, to utilize an alternative backflow protection plan that includes an annual inspection of both the recycled water and potable water systems and an annual cross-connection test of the recycled water and potable water systems pursuant to subsection 60316(a) in lieu of any BPA.

(++++) All connections must receive at least the same level of protection excluding fire protection when connected to the PWS distribution system (e.g. if one connection requires an RP then all connections must have RPs installed).

Appendix E

General Range of Knowledge for Cross-Connection Control Specialists

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APPENDIX E

General Range of Knowledge for Cross-Connection Control Specialists

To effectively prevent unintended backflow into a PWS's distribution system, it is necessary for a cross-connection control specialist to have an understanding of a range of subjects related to cross-connection control. This appendix provides a list of such subjects.

This appendix is not meant to preclude instruction of additional subjects that may be necessary or beneficial to the goal of a prospective or existing cross-connection control specialist in being proficient in protecting public health from backflow through cross-connection control measures. Emphasis on particular subjects should be in a manner that best achieves that goal.

(a) GENERAL

(1) Cross-connection control terminology.
(2) The history leading to the need for cross-connection control, including causes, impacts, including but not limited to:

(A) potable water distribution systems;
(B) examples of backflow incidents and actual or potential public health impacts; and
(C) evolution of methods of cross-connection control and backflow prevention assemblies.

(3) Hydraulics (general) – An understanding of hydraulic gradients, pressure variations, flow rates, temperature, the properties of water, backsiphonage, backpressure, and other elements necessary to understand the causes for backflow.
(4) Public outreach – How to appropriately convey the value of cross-connection control to PWS personnel and the public.

(b) LAWS, REGULATIONS, AND GUIDANCE

(1) Federal – Applicable federal laws, regulations, and guidance.
(2) State – California laws and regulations, including, but not limited to, the State Water Resources Control Board's most recent edition of its *Cross-Connection Control Policy Handbook* and other requirements related to cross-connection control.
(3) Local – An understanding of the need to ensure local requirements are considered and how best to find such requirements.

(c) HAZARD ASSESSMENTS AND METHODS TO PREVENT BACKFLOW

A comprehensive understanding of how to conduct cross-connection surveys of water systems for the purpose of identifying cross-connections, assessing hazards, and identifying the most effective and legally appropriate methods for protection from backflow. At a minimum, the following topics should be considered to achieve such an understanding:

(1) Surveys:

(A) Preparation (e.g., authority, notification, prioritizing customers/premises, coordinating with public water systems, etc.);
(B) Design and as-built drawings related to water supply and cross-connection control;
(C) Public water system schematics;
(D) How to identify existing and new construction, with an understanding of how construction may impact backflow protection;
(E) How to identify cross-connections (actual and potential);
(F) How to identify and differentiate between high hazard and low hazard cross-connections; and
(G) Problems associated with multi-story buildings, multiple service connections at a premises, typical water-use equipment, etc., and varying types of water service, including irrigation, recycled water, gray water, fire prevention systems, and dual plumbed premises.

(2) Assessing Hazards:

(A) Identifying and differentiating between premises activities leading to high hazard cross-connections and low hazard cross-connections (for examples of high hazard activities, see Appendix D); and
(B) Understanding potential public health impacts from backflow associated with the problems in section (c)(1)(G) of this appendix.

(3) Assemblies and Methods for Backflow Prevention:

(A) A comprehensive understanding of approved methods for cross-connection control and preventing backflow with respect to an assessed hazard;
(B) Identifying unapproved methods for cross-connection control and preventing backflow;
(C) An understanding of components, design and operation, proper installation and location of backflow prevention assemblies, including air gaps, and backflow prevention assembly field test methods, field test results, and the assessment of air gaps; and
(D) Identifying unapproved assemblies, as well as those assemblies whose operation and/or state of repair necessitates replacement with an approved assembly.

(d) CROSS-CONNECTION CONTROL PROGRAMS

A comprehensive understanding of the development, elements, and administration of cross-connection control programs, including, but not limited to:

(1) An ability to assess the federal, state, and local requirements applicable to a public water system's cross-connection control program, such that adherence to the cross-connection control program would result in compliance with the requirements;
(2) The roles, responsibilities, and authority of individuals and entities involved in the critical elements of a successful plan for cross-connection control (see CCCPH section 3.1.4); and
(3) The ability to assess the components of a public water system's Cross-Connection Control Plan (see CCCPH section 3.1.4) that best assures the prevention of undesired backflow into the public water system's distribution system, and to communicate deficiencies to public water system personnel.

(e) CROSS-CONNECTION TESTS

A comprehensive understanding of:

(1) The purpose of a cross-connection test and when a cross-connection test should be performed;
(2) The ability to develop protocols and make arrangements for cross-connection tests, and subsequently oversee and/or perform such cross-connection tests, in a manner that determines whether interconnections exist between unapproved sources and approved water supplies; and
(3) Follow-up actions and notifications if a cross-connection test indicates an interconnection.

(f) RECORDKEEPING AND INCIDENT RESPONSE

A comprehensive understanding of:

(1) The agencies and authorities to be notified in the event of a backflow incident;
(2) How to determine the cause of a backflow incident and the actions necessary to prevent similar incidents in the future;
(3) How to properly document a backflow incident, including but not limited to the information in the example backflow incident response form in Appendix F; and
(4) How to properly document the elements associated with surveys and hazard assessments, including those identified in section (c) of this appendix.

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Appendix F

Example Backflow Incident Reporting Form

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BACKFLOW INCIDENT REPORT FORM

Water System: _____

Water System Number: _____

Incident Date: _____

Incident Time (if known):_____

Incident Location: _____

How was the incident discovered?

_____

Backflow Originated from:

Premise Location: _____

Address: _____

Premise Contact Person: _____ Title:_____

Phone:_____ Email: _____

Connection Type: (please check one)

□ Industrial □ Commercial □ Single-Family Residential □ Multi-Family Residential

□ Irrigation □ Recycled Water □ Water System Facility

□ Other: _____

Description and source of backflow substance (please be as descriptive as possible):

_____

_____

If available, please attach an MSDS or other chemical description form

Was the backflow fluid contained within the user side? YES □ NO □

Estimated Number of Affected Persons: _____

Number and description of consumer complaints received:

_____

_____

Did any consumers report illness? Please describe.

_____

_____

If applicable, please describe the consumer notification:

_____

_____

INVESTIGATION

Please describe the water system investigation including time frames:

_____
_____
_____
_____
_____
_____

What was the area system pressure? _____

Is this within typical range: YES ☐ NO ☐ - typical pressure: _____

Was a sample of the water contaminated by the backflow incident collected and stored before flushing? YES ☐ NO ☐

Please describe all sampling:

_____

_____

_____

DDW recommends laboratory or field sampling for the following parameters: total coliform, E. coli, free and total chlorine residual, pH, odor, turbidity, temperature, and color. Additional sampling should be collected at the PWS and regulatory agency's discretion.

CORRECTIVE ACTIONS

Please describe the corrective actions taken by the water system:

_____
_____
_____
_____
_____
_____

Was the chlorine residual increased after discovery of backflow incident? YES ☐ NO ☐

Date of the last cross-connection control hazard assessment of the premise with the backflow incident conducted: _____

Did the premise have backflow prevention assemblies? YES ☐ NO ☐

Date of most recent backflow prevention assembly test(s): _____

When was the Division of Drinking Water or Local County Health office notified?

Date: _____Time: _____ Contact Person: _____

Was the Division or Local County Health notified within 24 hours? YES ☐ NO ☐

Other agencies or organizations contacted?

CERTIFICATION

Name: _____ Job Title: _____

Certification(s): _____

_____

Please list all cross-connection control related certifications including number and expiration date

I certify that the forgoing information is true and correct to the best of my ability.

Signature: _____ Date: _____

Attach the following applicable documentation

1. Laboratory Test Results
2. Sketch of the cross-connection and modifications
3. MSDS or chemical information forms if chemical hazard is known
4. Applicable backflow assembly test reports including the most recent test before the incident
5. Other relevant supporting documentation

Appendix G

Related Statutes and Regulations

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The following laws and regulations are considered related or tangential to the CCCPH, and are included in a descriptive format to provide additional, relevant background information

California Laws and Regulations

In addition to the California SDWA statutory requirements cited in CCCPH Chapter 1, section 1.3.1, California has statutes addressing certain authorities and requirements that may have influenced the CCCPH or may otherwise be of interest.

- Urban and community water systems must have a written policy on discontinuation of residential service for nonpayment and must not discontinue residential service for nonpayment if certain conditions are met. (CHSC sections 116900 – 116926)

- Senate Bill 1263 (2017) requires that before a person submits an application for a permit for a proposed new public water system, the person shall first submit a preliminary technical report which must include a cost comparison of a new public water system and consolidations with an existing system. (CHSC section 116527)

- Effective June 24, 2015, Senate Bill 88 (SB 88) (Statutes 2015, Chapter 27) added sections 116680-116684 to the CHSC, allowing the State Water Board to require certain water systems that consistently fail to provide safe drinking water to consolidate with, or receive an extension of service from, another public water system. The consolidation can be physical or managerial.

- Local health officers may maintain programs for the control of cross-connections by water users, within water users' premises, where public exposure to backflow may occur. Such programs may include water user premises inspections, collection of fees, certification of backflow prevention assembly[1] (BPA) testers, and other discretionary elements. Local health officer BPA tester certification standards must be consistent with the standards prescribed in the CCCPH. Water users are required to comply with all orders, instructions, regulations, and notices from the local health officer regarding installation, testing, and maintenance of a BPA. (CHSC sections 116800 - 116820).

- Pursuant to the California Building Standards Law (CHSC sections 18901 - 18949.31), the California Building Standards Commission (CBSC) must administer the processes related to the adoption, approval, and publication of regulations referred to as the California Building Standards Code (Title 24, California Code of Regulation). Title 24 serves as the basis for the minimum design and construction

[1] California statutes use a variety of terms when referencing a 'backflow prevention assembly' (e.g., backflow protective device, backflow protection equipment, backflow prevention device, backflow or back siphonage protection device, backflow preventer, or backflow device). For consistency with industry terminology, 'backflow prevention assembly' is used in the CCCPH, unless directly quoted otherwise.

of buildings in California and includes the California Plumbing Code (Part 5 of Title 24), which contains requirements pertaining to cross-connection control and backflow prevention.

- A BPA intended to convey or dispense water for human consumption via drinking or cooking must meet California's "lead free" requirements. (CHSC section 116875)

- Limits are established for the installation of backflow protection equipment where automatic fire sprinkler systems are utilized. (CHSC section 13114.7)[2]

- Cross-connection control must be addressed in engineering reports that are required (CCR Title 22, section 60323) for recycled water projects. (Wat. Code section 13552.8)

- If a public agency requires the use of recycled water for toilet and urinal flushing in a structure (except certain mental health facilities), the public health agency must prepare an engineering report that addresses cross-connection control. (Wat. Code section 13554)

- Prior to indoor use of recycled water in a condominium project, the entity delivering the recycled water must submit a report, for State Water Board[3] approval, and include the following related to cross-connection control (Wat. Code section 13553(d)(1)):

    - The condominium project must be provided with a backflow prevention assembly approved by the State Water Board.

    - The backflow prevention assembly must be inspected and tested annually by a certified tester.

    - The condominium project must be tested by the recycled water agency or local agency at least once every four years for indications of possible cross-connections between the condominium's potable and non-potable systems.

- California's Department of Water Resources was required to convene a task force, known as the 2002 Recycled Water Task Force, to identify constraints, impediments, and opportunities for the increased use of recycled water and report

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[2] CHSC section 13114.7 historically provided potential limits for backflow prevention assemblies on fire sprinklers. Even though current standards differ from the language stated in CHSC section 13114.7, it is still being provided as a historical reference as there may still be installations with the now outdated limits established in section 13114.7

[3] The California Department of Public Health's authority and responsibility pertaining to this reference was transferred to the State Water Board via Senate Bill 861 (2014, Chapter 35). As such, applicable statutory mandates that may refer to "California Department of Public Health" or "Department" may be referred to as "State Water Board" in this document.

to the Legislature by July 1, 2003. The task force was also asked to advise and make recommendations concerning cross-connection control, including the applicability of visual inspections instead of pressure tests for cross-connections between potable and non-potable water systems. (Wat. Code section 13578(b)(1). The final report[4] provided the following recommendations to the State Water Board – Division of Drinking Water (Division):

- ▫ Prepare guidance on dual plumbed regulations (22 CCR sections 60313-60316) consistent with Appendix J of plumbing code (Chapter 15 of 2019 California Plumbing Code, formerly Chapter 16A).
- ▫ Support thorough assessment of risk associated with cross-connections between disinfection tertiary recycled water and potable water.
- ▫ Ensure uniform interpretation of cross-connection control requirement of Title 22 regulations (recycled water) and Title 17 (cross-connection control regulations)
- ▫ Recommend stakeholders to review draft Title 17 regulations.

▪ A person engaged in the salvage, purchase, or sale of scrap metal who knowingly possesses a backflow prevention assembly (or connections to the assembly or any part of the assembly), or who failed to report the possession of such items, which was previously owned by a utility or public agency, is guilty of a crime. (Pen. Code section 496e)

▪ Junk dealers or recyclers who possess a backflow prevention assembly (or connections to that assembly or any part of the assembly) without a written certification from the agency or utility owning or previously owning the assembly will be liable to the agency or utility for the wrongful possession. (Civ. Code section 3336.5 and, similarly, Bus. & Prof. Code section 21609.1)

Please note that a number of the codes, regulations, and statutes cited above are implemented under the authority of regulatory entities other than the State Water Board and would therefore be beyond the scope of this CCCPH. The intent of providing such citations is to increase general awareness with respect to other potential statutory requirements associated with cross-connection control. The list is not exhaustive and does not include other requirements that may exist, including those via regulations that may have been adopted by an appropriate regulatory entity.

Federal Laws and Regulations

[4] California Department of Water Resources. (2003). *Water Recycling 2030: Recommendations of California's Recycled Water Task Force*

All suppliers of domestic water to the public are subject to regulations adopted by the U.S. Environmental Protection Agency (EPA) under the U.S. Safe Drinking Water Act (SDWA) of 1974, as amended (42 U.S.C. section 300f et seq.), as well as by the State Board under the California SDWA (Health & Saf. Code, div. 104, pt. 12, ch. 4, section 116270 et seq.). Additionally, the State Water Board has been delegated primacy - the responsibility and authority to administer U.S. EPA's drinking water regulations within California – on the condition that California adopt enforceable requirements no less stringent than U.S. EPA's.

The U.S. EPA currently has no distinct cross-connection control requirements that apply broadly to public water systems (PWS); however, the importance of cross-connection control is evident by the issue papers and guidance documents developed by U.S. EPA and their recognition that cross-connections and backflow represent a significant public health risk (see discussion in Chapter 2). Although U.S. EPA currently has no distinct cross-connection control requirements, the subject of cross-connection or backflow prevention assemblies is included in the U.S. SDWA and the Code of Federal Regulations (C.F.R.) in relation to PWS, including the following:[5]

- If used exclusively for non-potable services, a backflow prevention assembly (BPA) is exempt from the federal lead prohibitions. (42, U.S.C. section 300g)
- Allows increasing disinfectant concentrations in a PWS distribution system in the event of a cross-connection (backflow) event. (40 C.F.R. section 141.130(d))
- Proper maintenance of the distribution system, including cross-connection control, is identified as a best available technology (BAT) for microbial contaminant control. (40 C.F.R. section 141.63(e))
- Under the federal Revised Total Coliform Rule, a PWS having a cross-connection control program is one of the enhancements necessary to reduce monitoring for a PWS that had been under an increased monitoring frequency. (40 C.F.R. section 141.854(h)(2))
- Under the federal Revised Total Coliform Rule, a PWS having a cross-connection control program is a criterion for a state to allow a reduced monitoring frequency (40 C.F.R. section 141.855(d)(1))
- If a state allows the monitoring frequency reductions previously mentioned under the federal Revised Total Coliform Rule, a state is required to include in its primacy package to U.S. EPA how a PWS will be required to demonstrate cross-connection control. (40 C.F.R. section 142.16(q))

[5] For requirements unrelated to cross-connection control, please consult California's laws and regulations specific to the topic of interest. California may have more stringent requirements (e.g., reduced monitoring allowed via federal regulations may be prohibited in California).

Appendix B

CMP Municipal Code – Chapter 3 Backflow Prevention & Cross-Connection Control

Chapter 3 BACKFLOW PREVENTION & CROSS-CONNECTION CONTROL

VIII-3-1.00 Purpose

The purpose of this Chapter is to protect the health of the water customers by the control of actual or potential cross-connections through two basic programs:

(a) Through proper installation and maintenance of backflow preventers on services to premises where actual or potential cross-connections exist to prevent backflow or back-siphonage of contaminants or pollutants from the customer's premises into the Public Water System.

(b) By promoting the elimination of existing or future cross-connections through inspection and regulation of plumbing and water piping within a customer's premises, Public Water System or between them.

1.01 Authority. Title 17, Chapter V, Sections 7583-7622, inclusive of the California Code of Regulations entitled "Regulations Relating to Cross-Connections," gives the City authority to protect the Public Water System from contamination and pollution.

The City Engineer on behalf of the City shall have authority to protect the Public Water System from contamination or pollution due to the backflow or back-siphonage of contaminants or pollutants through water service connections by implementation and enforcement of a backflow prevention and cross-connection control program based on accepted standards.

(Ord. 232 (part), 12/20/88)

VIII-3-2.00 Definitions.

For purposes of this Chapter, the terms used herein are defined as follows:

2.01 Auxiliary Water Supply. Any water supply available to the premises other than the Public Water System. These auxiliary supplies may include water from another purveyor's public potable water supply or any natural source such as a well, spring, river, stream, harbor, etc., or "used water" or "industrial fluids." These waters may be polluted or contaminated or they may be objectionable and constitute an unacceptable water source over which the City has no sanitary control.

2.02 Backflow. The undesirable flow of water or other liquids, gases or solid substances under pressure into the distributing pipes of the Public Water System from any outside source.

2.03 Back-Siphonage. The flow of water or other liquids, gases or solid substances into the distribution pipes of the Public Water System from any outside source caused by the sudden reduction of pressure in the Public Water System.

2.04 Backflow Prevention Device. A device or means designed to prevent backflow or back-siphonage. Types of backflow prevention devices are as follows:

2.04-1 Double Check Valve Assembly. An assembly of two independently operating approved check valves with tightly closing shutoff valves on each side of the check and relief valves. The entire assembly shall meet the design and performance specifications and approval of a recognized and City approved testing agency for backflow prevention devices. To be approved, these devices must be readily accessible for in-line maintenance and testing and be installed per City standards.

2.04-2 Reduced Pressure Principle Backflow Prevention Device. An assembly of two independently operating approved check valves with an automatically operating differential relief valve between the two check valves, tightly closing shutoff valves, plus properly located test cocks for the testing of the check and relief valves. The entire assembly shall meet the design and performance specifications and approval of a recognized and City approved testing agency for backflow prevention. The device shall operate to maintain the pressure in the zone between the two check valves at a level less than the pressure on the Public Water System side of the device. At cessation of normal flow the pressure between the two check valves shall be less than the pressure on the Public Water System side of the device. In case of leakage of either of the check valves, the differential relief valve shall operate to maintain the reduced pressure in the zone between the check valves by discharging to the atmosphere. When the inlet pressure is two pounds per square inch or less, the relief valve shall open to the atmosphere. To be approved, these devices must be readily accessible for in-line maintenance and testing and be installed per City standards.

2.05 Contamination. Any impairment of the quality of the potable water by sewage, industrial fluids or waste liquids, compounds or other materials to a degree which creates an actual hazard to the public health through poisoning or through the spread of disease.

2.06 Cross-Connection. Any physical connection or arrangement of piping or fixtures where backflow or back-siphonage might occur between any part of a water system, used or intended to supply water for drinking purposes, and water or any source or system containing substance that is not or cannot be approved as safe, wholesome, or potable for human consumption.

2.07 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 Public Water System.

2.07-1 Hazard—Health. Any condition, device, or practice in the water system and its operation which, based on the Manual of Cross-Connection Control, could create a danger to the health and well-being of the water customers. An example of a health hazard is a structural defect, including cross-connections, in a water supply system.

2.07-2 Hazard—Plumbing. A plumbing type cross-connection in a customer's potable water system has not been properly protected by a backflow prevention device. Unprotected plumbing type cross-connections are considered to be a health hazard.

2.07-3 Hazard—Pollutional. An actual or potential threat to the physical properties of the Public Water System or to the potability of either the Public or the Customer's Water System, but which would constitute a nuisance or be aesthetically objectionable or could cause damage to the system or its appurtenances, but would not be dangerous to health.

2.07-4 Hazard—System. An actual or potential threat of severe damages to the physical properties of the Public Water System or the Customer's Water System or of a pollution or contamination which would have a protracted effect on the quality of the water in the system.

2.08 Industrial Fluids System. Any system containing a fluid or solution which may be chemically, biologically or otherwise contaminated or polluted in a form or concentration such as would constitute a health, plumbing, pollutional or system 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 Water System which may have deteriorated in sanitary quality; chemicals in fluid form; plating acids and alkalies, circulated cooling waters connected to an open cooling water or cooling towers that are chemically or biologically treated or stabilized with toxic substances; contaminated natural waters such as from wells, springs, streams, rivers, bays, harbors, seas, irrigation canals or systems, etc.; oils, gases, glycerine, paraffins, caustic and acid solutions and other liquid and gaseous fluids used in industrial or other purposes or for fire-fighting purposes.

2.09 List of Approved Backflow Prevention Devices. The most recent list of approved backflow prevention assemblies from the University of Southern California, School of Engineering, Foundation for Cross-Connection Control and Hydraulic Research.

2.10 Manual of Cross-Connection Control. The latest edition of the Manual of Cross-Connection Control as published by the Foundation for Cross-Connection Control and Hydraulic Research, University of Southern California, University Park, Los Angeles, CA 90089.

2.11 Pollution. The presence of any foreign substance (organic, inorganic, or biological) in water which tends to degrade its quality so as to constitute a hazard or impair the usefulness or quality of the water to a degree which does not create an actual hazard to the public health, but which does adversely and unreasonably affect such waters for domestic use.

2.12 Service Connection. The terminal end of the Public Water System; i.e., where the City of Milpitas 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 customer's meter. There should be no unprotected takeoffs from the service line on the City's side of the meter or backflow prevention device 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 Water System.

2.13 Used Water. Any water supplied by the City from the Public Water System to a Customer's Water System after it has passed through the service connection and is no longer under the sanitary control of the City.

2.14 Water System. The water system shall be considered as made up of two parts: The Public Water System and the Customer's Water System.

2.14-1 The Public Water 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 City up to the point where the Customer's Water System begins the service connection.

2.14-2 The Source shall include all components of the facilities utilized in the production, treatment, storage, and delivery of water to the distribution system.

2.14-3 The Distribution System shall include the network of conduits used for the delivery of water from the source to the Customer's Water System.

2.14-4 The Customer's Water System shall include those parts of the facilities beyond the service connection of the Public Water System for distributing water.

(Ord. 232 (part), 12/20/88)

VIII-3-3.00 Policy

3.01 Water Service. No water service connection to any premises shall be installed or maintained by the City unless the water supply is protected from contamination and pollution. Service of water to any premises shall be discontinued by the City if a backflow prevention device required by this Chapter is not installed, tested and maintained, or if it is found that a backflow prevention device has been removed, by-passed, or if any unprotected cross-connection exists on the premises. Service will not be restored until such conditions or defects are corrected to the satisfaction of the City Engineer.

3.02 Open for Inspection. The Customer's Water System shall be open for inspection at all times to authorized representatives of the City Engineer to determine whether cross-connections, hazards (health, plumbing, pollutional, system), or violations of this Chapter exist. When an imminent hazard to public health or

safety becomes known, the City Engineer may deny or immediately discontinue water service to the premises until the customer has corrected the condition to the satisfaction of the City Engineer.

3.03 Approval of Devices. Any backflow prevention device required herein shall be of a model and size as shown on the list of approved backflow prevention devices.

Backflow preventers which may be subjected to back-pressure or back-siphonage that have been fully tested and have been granted a Certificate of Approval by a certified laboratory and is listed on the City's current list of "Approved Backflow Prevention Devices" may be used without further test or qualification.

3.04 Existing Users—with a non-complying device. All presently installed backflow prevention devices which do not meet the requirements of this section, but were approved devices for the purposes described herein at the time of installation and which have been properly maintained, shall be excluded from the requirements of these rules so long as the City Engineer is assured that they will satisfactorily protect the Public Water System based on the testing and maintenance requirements described in Section 7.00. Whenever the existing device is moved from the present location or requires major repair, the unit shall be replaced by a backflow prevention device meeting the requirements of this Section.

3.05 Evaluation of Hazard. An evaluation of cross-connection hazards shall be performed when, as specified in the Manual of Cross-Connection Control, an existing user might pose an actual or potential cross-connection hazard.

3.06 Existing Users—without any device. All customers and premises existing prior to adoption of this Chapter are subject to an evaluation of hazard by the City Engineer in accordance with the Manual of Cross-Connection Control to determine if backflow devices shall be required. If it is determined that an existing premises requires backflow prevention under Section 4.00, then the City Engineer shall give notice in writing to the customer to install an approved backflow prevention device within 180 calendar days or the City shall discontinue water service. Certification of the device installed shall be executed within ninety days from date of notice.

(Ord. 232 (part), 12/20/88)

VIII-3-4.00 Where Backflow Protection Is Required

4.01 An approved backflow prevention device shall be installed per standard drawings adopted by the City and the list of approved backflow prevention devices. The device shall be installed prior to the issuance of a final occupancy permit on each service line to a Customer's Water System at or near the property line and before the first branch line leading off the service line. This shall apply to certain commercial and industrial businesses, separate irrigation systems, and hillside residences (without Polyvinyl Chloride Pipe (PVC) fire service) and wherever the following conditions exist:

4.01-1 In the case of premises having an auxiliary water supply which is not or may not be of safe bacteriological or chemical quality and which is not acceptable as an additional potable source as determined by the Manual of Cross-Connection Control, the Public Water System shall be protected against backflow from the premises by installing a backflow prevention device in the service line appropriate to the degree of hazard.

4.01-2 In case of the premises which any industrial fluid or any other objectionable substance is handled in a manner that could permit the fluid or substance to enter the water system, the Public Water System shall be protected against backflow from the premises by installing a backflow prevention device in the service line appropriate to the degree of hazard. This shall include the handling of process waters and waters originating from the Public Water System which have been subject to deterioration in quality.

4.01-3 In the case of premises having internal cross-connection that cannot be permanently corrected, the Public Water System shall be protected against backflow from the premises by installing a backflow prevention device in the service line appropriate to the degree of hazard.

4.01-4 In the case of premises having intricate piping arrangements or where entry to all portions of the premises is restricted so that inspections for cross-connections cannot be made with sufficient frequency or at sufficiently short notice to assure that no cross-connections exist, the Public Water System shall be protected against backflow from the premises by installing a backflow prevention device in the service line appropriate to the degree of hazard.

4.01-5 In the case of premises having a repeated history of cross-connections being established, or re-established, the Public Water System shall be protected against backflow from the premises, appropriate to the degree of hazard, by installing a backflow prevention device in the service line.

(Ord. 232 (part), 12/20/88)

VIII-3-5.00 Determination of Backflow Prevention Device

5.01 The backflow prevention device required under Section 4.00 is as follows:

5.01-1 A double check valve assembly on all irrigation systems.

5.01-2 A reduced pressure principle backflow prevention device on certain commercial or industrial domestic systems.

5.01-3 A double check valve assembly on all Hillside residences where PVC pipe is not used.

5.02 An evaluation of hazard will be performed by the City Engineer or his staff based on the Manual of Cross-Connection Control to determine the degree of hazard and what, if any, backflow prevention device shall be required. The following guidelines shall be used in evaluating each customer activity.

5.02-1 In the case of a customer activity where toxic or hazardous substances are handled in any manner which may allow for contamination for the water system, the Public Water System shall be protected by a reduced pressure principle backflow prevention device at the service connection.

5.02-2 In the case of a customer activity 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 at the service connection.

5.02-3 In the case of a customer activity where an unapproved auxiliary water supply is interconnected with the water system, the Public Water System shall be protected by an approved reduced pressure principle backflow prevention device at the service connection.

5.02-4 In the case of a customer activity where an unapproved auxiliary water supply exists and there is no interconnection, the Public Water System shall be protected by a double-check valve assembly at the service connection.

5.02-5 In the case of a customer activity where there are internal cross-connections that cannot be permanently corrected, either actual or potential, the Public Water System shall be protected by an approved reduced pressure principle backflow prevention device at the service connection.

5.02-6 In the case of a customer activity having intricate piping arrangements or entry to all portions of the premises is restricted so that inspections for cross-connections cannot be made with sufficient frequency at sufficient short notice to assure no cross-connections exist, the Public Water System shall be protected against backflow or back-siphonage from the premises by the installation of a reduced pressure principle backflow prevention device at the service connection. In this case, maximum protection will be required;

that is, an approved reduced pressure principle backflow prevention device shall be installed in each service to the premises.

5.02-7 In case of a customer activity on which a non-residential irrigation system exists where fertilizer, herbicides, or pesticides can be injected into the irrigation system, the Public Water System shall be protected against backflow or back-siphonage from the premises by the installation of a reduced pressure principle backflow prevention device at the service connection.

5.02-8 In the case of a customer activity where a fire system exists and there is direct connection from the Public Water System to elevated storage tanks or fire pumps taking suction from private reservoirs, the Public Water System shall be protected against backflow or back-siphonage from the premises by the installation of a double check valve assembly at the service connection.

5.02-9 In the case of a customer activity where a fire system exists and is directly supplied from public mains and interconnected with auxiliary supplies (such as: pumps taking suction from reservoirs exposed to contamination or from rivers and ponds, driven wells, mills or other industrial water systems; or systems where anti-freeze or other additives are used) the Public Water System shall be protected against backflow or back-siphonage from the premises by the installation of a reduced pressure principle backflow prevention device at the service connection.

5.02-10 In the case of a customer activity where a fire system exists and this system is supplied from the public water supply and is treated with chemical retardants for the purpose of controlling fires, the Public Water System shall be protected against backflow or back-siphonage from the premises by the installation of a reduced pressure principle backflow prevention device at the service connection.

5.03 When a Double Check Valve Assembly is cited as the required device for that customer activity in this section, a reduced pressure principle backflow prevention device may be used if the customer prefer. The requirement for a double check valve is a minimum requirement and the maximum protection can be used.

(Ord. 232 (part), 12/20/88)

VIII-3-6.00 Installation of Device

6.01 Installation of backflow preventers required by this section shall be as follows:

6.01-1 The backflow protection device shall be installed by the customer on the customer water service side within six inches (6″) of property line per City standards.

6.01-2 All backflow preventers shall be readily accessible for testing and repair.

6.01-2(1) Reduced Pressure Principle Backflow Prevention Device. Reduced Pressure Principle Backflow Prevention Devices shall be installed a minimum of twelve inches (12″) above grade and not more than thirty inches (30″) above grade measured from the bottom of the device. There shall also be a minimum twelve inches (12″) side clearance.

6.01-2(2) Double Check Valve Assembly. Double Check Valve Assembly shall be installed a minimum of twelve inches (12″) above grade and not more than thirty inches (30″) above grade measured from the bottom of the device. There shall also be a minimum twelve inches (12″) side clearance.

(Ord. 232 (part), 12/20/88)

VIII-3-7.00 Testing and Maintenance

7.01 It shall be the responsibility of the City at any premises where a backflow prevention device is installed to have proper certified inspection and operational testing. Testing of the device shall be at initial installation and once per year henceforth by the City. In those instances where the City Engineer deems the hazard to be great enough, he may require certified inspections and testing at more frequent intervals.

7.02 The inspections and tests shall be performed by City of Milpitas personnel or by a certified tester approved by the City. The City Engineer shall establish a list of certified testers. These tests shall be at the expense of the customer.

7.03 Any defective device shall be immediately repaired, overhauled or replaced by and at the expense of the customer whenever said devices are found by the City to be defective. Then the modified device, or replacement device, shall be retested by the City.

7.04 Records of all repairs and overhauls shall be filed with the City Engineer within sixty (60) days of notification date on the City's Test and Maintenance Report.

(Ord. 232 (part), 12/20/88)

VIII-3-8.00 Appeals

Except as otherwise provided by this Chapter and where a hearing on the matter is not otherwise required to be had by the City Council, any person aggrieved by decision of any officer or department of City may appeal to the City Council in accordance with provisions of Section 5, Chapter 20, Title I of Milpitas Municipal Code.

(Ord. 232 (part), 12/20/88)

VIII-3-9.00 Penalties

The City may discontinue water service to any premises served if a required backflow prevention device is removed, or if the City finds evidence that an installed backflow prevention device has been by-passed, or allowed to remain ineffective.

Any person or persons, company, corporation or association, who shall violate any of the provisions of this Chapter or fail to comply therewith, or who shall violate or fail to comply with any order made thereunder, shall severally for each and every violation and non-compliance respectively, be guilty of an infraction, punishable in accordance with the provisions of I-1-4.09-1 of the Milpitas Municipal Code. The imposition of one fine for any violation shall not excuse the violation or permit it to continue; and all such persons shall be required to correct or remedy such violations or defects within a reasonable time; and when not otherwise specified, each day that prohibited conditions are maintained shall constitute a separate offense.

The application of the above fine shall not be held to prevent the enforced removal of prohibited conditions.

VIII-3-10.00 Effective Date

The requirements and procedures for Backflow Prevention and Cross-Connection Control as established by Ordinance 232 shall become effective starting January 20, 1989.

(Ord. 232 (part), 12/20/88)

Appendix C

SwiftComply Blank Test Report

City of Milpitas

Backflow Prevention Assembly Test Report

455 E. Calaveras Blvd, Milpitas, CA 95035 • backflow@milpitas.gov

ACCOUNT INFORMATION

Location Name		
Location Address		
Contact Name	**Email**	**Phone**

ASSEMBLY INFORMATION

Type	**Make**	**Model**	**Size**	**Serial Number**	**Install Date**
Location					
Protection Type					

TESTING & MAINTENANCE

	Check Valve #1	**Check Valve #2**	**Relief Valve**	**PVB/SVB**	**Shut Off Valves**	**#1**	**#2**
Initial Test	☐ Held at _____PSID ☐ Closed Tight ☐ Leaked	☐ Held at _____PSID ☐ Closed Tight ☐ Leaked	☐ Opened at _____PSID ☐ Did Not Open	☐ Air Inlet Opened at _____ PSID ☐ Opened Fully ☐ Check Held at _____ PSID ☐ Leaked	Closed Tight Leaked	☐ ☐	☐ ☐
REPAIR	☐ Cleaned Replaced: ☐ Disc ☐ Spring ☐ Guide ☐ Seat ☐ O-Ring(s) ☐ Module ☐ Rubber Kit ☐ Other	☐ Cleaned Replaced: ☐ Disc ☐ Spring ☐ Guide ☐ Seat ☐ O-Ring(s) ☐ Module ☐ Rubber Kit ☐ Other	☐ Cleaned Replaced: ☐ Disc ☐ Spring ☐ Diaphragm ☐ Seat ☐ O-Ring(s) ☐ Module ☐ Rubber Kit ☐ Other	☐ Cleaned Replaced: ☐ Air Inlet Disc ☐ Air Inlet Spring ☐ Check Disc ☐ Check Spring ☐ Float ☐ Diaphragm ☐ Rubber Kit ☐ Other			
Final Test	_____ PSID ☐ Closed Tight	_____ PSID ☐ Closed Tight	Opened at _____ PSID	Air Inlet _____ PSID CK Valve _____ PSID	Closed Tight	☐	☐

Line Pressure at Time of Test	**Test Date**	**System Test Result**	**Tester Test Result**

Remarks

TESTER ATTESTATION & TEST KIT INFORMATION

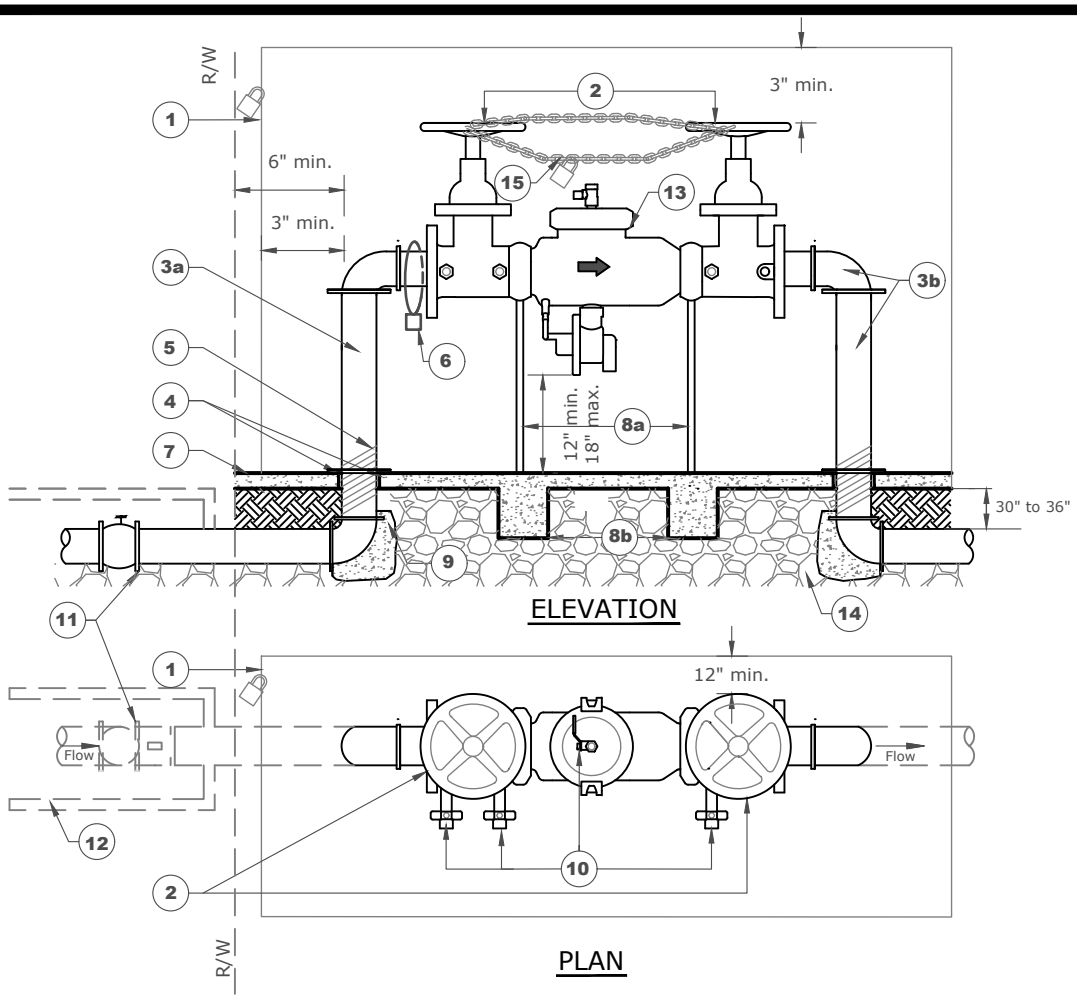
☐ The above report is certified to be true.

Test Kit Make	**Test Kit Model**	**Test Kit Serial Number**	**Test Kit Calibration Date**
Tester Name	**Service Provider Name**		**Certification Number**

Appendix D

Standard Drawing No. 734
Horizontal Reduced Pressure Principle Assembly (RP)

Standard Drawing No. 730
Horizontal Reduced Pressure Detector Assembly (RPDA)



ELEVATION

PLAN

1. PROTECTIVE ENCLOSURE/ INSULATED WEATHER COVER
2. SHUTOFF VALVES. ADEQUATE TOP & SIDE CLEARANCE FOR OPERATION OF VALVES SHALL BE PROVIDED
3a. DUCTILE IRON PIPE
3b. IN-LINE VALVES (PRV, WYE STRAINER), 90 DEGREE FITTINGS, NIPPLES, ETC
4. PIPE SLEEVE & ANNULAR SPACE BETWEEN BPA RISERS AND CONCRETE PAD
5. POLYETHYLENE ENCASEMENT/WRAPPING
6. ASSET TAG
7. CONCRETE SLAB 4" MIN. THICKNESS WITH REBAR REINFORCEMENT
8a. PIPE SUPPORT STANDS / BRACES. SEE SHEET 4 NOTE 7
8b. PIPE CONCRETE FOOTING
9. THRUST BLOCKS. SEE SHEET 4 NOTE 5
10. TEST COCKS
11. METER FLANGES
12. METER BOX PER STD. DWG. NO.728
13. BACKFLOW PREVENTION ASSEMBLY
14. DRAIN ROCK
15. CHAIN & LOCK TO VALVE WHEELS

NOTES: SEE DRAWING NO. 746 FOR ANODE TEST STATION INSTALLATION FOR BACKFLOW PREVENTION ASSEMBLY

CITY OF MILPITAS, ENGINEERING DIVISION

REVISION	DATE
4	2022
5	2025
6	

HORIZONTAL REDUCED PRESSURE PRINCIPLE ASSEMBLY (RP) FOR LARGE SERVICE (>2")

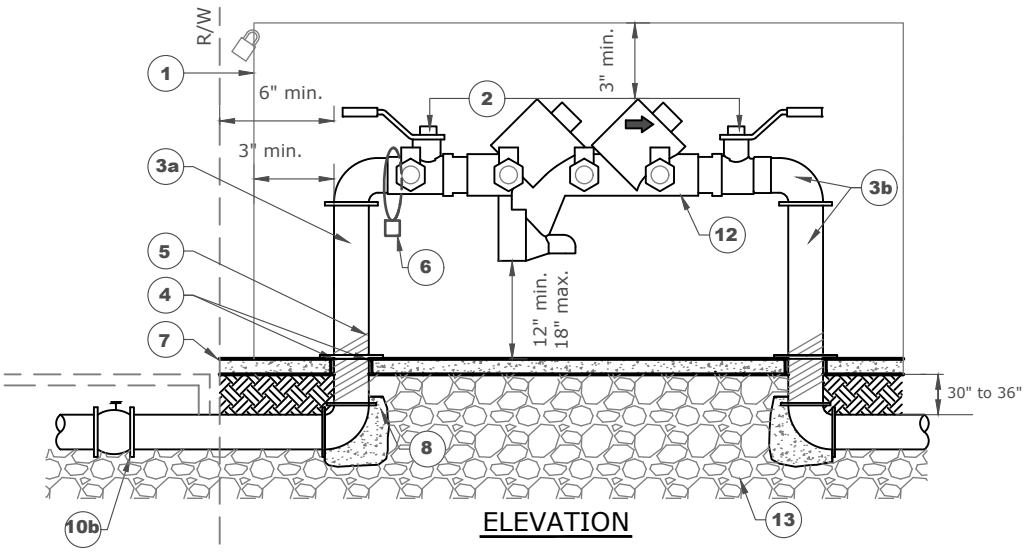
4 APPROVED BY:

RCE # C-XXXXX

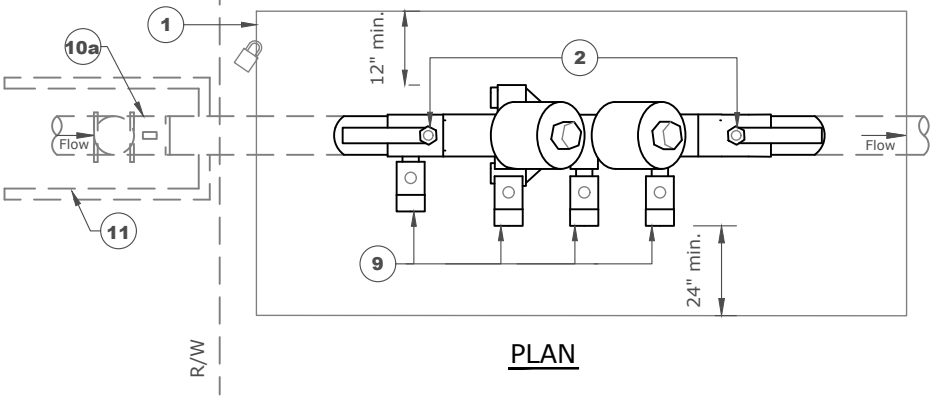
STANDARD DRAWING
NO. 734

DATE :

SHEET 1 OF 4



ELEVATION



PLAN

1. PROTECTIVE ENCLOSURE/ INSULATED WEATHER COVER
2. SHUTOFF VALVES. ADEQUATE TOP & SIDE CLEARANCE FOR OPERATION OF VALVES SHALL BE PROVIDED
3a. "K" OR "L" TYPE COPPER TUBING, OR THREADED BRASS
3b. IN-LINE VALVES (PRV, WYE STRAINER), 90 DEGREE FITTINGS, NIPPLES, ETC
4. PIPE SLEEVE & ANNULAR SPACE BETWEEN BPA RISERS AND CONCRETE PAD
5. POLYETHYLENE ENCASEMENT/WRAPPING
6. ASSET TAG
7. CONCRETE SLAB 3" MIN. THICKNESS, WITH WIRE MESH REINFORCEMENT
8. THRUST BLOCKS. SEE SHEET 4 NOTE 5
9. TEST COCKS
10a. METER TAIL PIECE/COUPLING
10b. METER FLANGES
11. METER BOX PER STD. DWG. NO.722, 723, 724, 726
12. BACKFLOW PREVENTION ASSEMBLY
13. DRAIN ROCK

CITY OF MILPITAS, ENGINEERING DIVISION

REVISION	DATE
4	2022
5	2025
6	

HORIZONTAL REDUCED PRESSURE PRINCIPLE ASSEMBLY (RP) FOR SMALL PIPE (≤2") SERVICE

4 APPROVED BY:

RCE # C-XXXXX

STANDARD DRAWING NO. 734

DATE :

SHEET 2 OF 4

WATER AND RECYCLED WATER SERVICES THAT REQUIRE PROTECTION

Applies only to Domestic, Irrigation, and Recycled Water Applications. Excludes Fire Services

All backflow prevention assemblies for domestic or irrigation services shall be lead-free reduced pressure type (RP). Three-quarters of an inch (3/4") to two-inch (2") backflow prevention assemblies shall have full-port domestic ball valves with threaded ends. Two and one-half inch (2-1/2") to ten-inch(10") backflow prevention assemblies shall be lead-free, steel body models or have a protective coating installed if they are cast-iron constructed and have non-rising stem flanged resilient seated gate valves.

Backflow prevention assemblies for all water services shall be RP type as follows		
MANUFACTURER	**MODEL**	**SIZE**
WILKINS	975XL2	3/4" TO 2"
	975XL3	
	375	2 ½" TO 10"
	475	
FEBCO	LF860	3/4" TO 10"
	LF880V	2 ½" TO 8"
WATTS	LF957	2 ½" TO 10"

FIRE SERVICE BACKFLOW PREVENTION ASSEMBLIES

Exception 1: When a Class 3 or Class 4 fire service incorporates the use of chemicals in the fire prevention systems or connects to a non-approved auxiliary water source, the backflow prevention assemblies shall be a Reduced Pressure Detector Assembly (RPDA-Type I or II).

Exception 2: When a fire service is installed on a recycled water site the backflow prevention assemblies shall be RPDA-Type I or II.

Approved RPDA backflow prevention assemblies shall be as follows		
MANUFACTURER	**MODEL**	**SIZE**
WILKINS	375	2 ½" TO 10"
	475	4" TO 10"
FEBCO	LF866	2 ½" TO 10"
	LF886V	2 ½" TO 8"
WATTS	LF957	4" TO 10"

CITY OF MILPITAS, ENGINEERING DIVISION

REVISION	DATE
4	2022
5	2025
6	

APPROVED BACKFLOW PREVENTION ASSEMBLY (RP AND RPDA)

4 APPROVED BY:

RCE # C-XXXXX

STANDARD DRAWING NO. 734

DATE :

SHEET 3 OF 4

GENERAL NOTES FOR BACKFLOW PREVENTION ASSEMBLIES

1. Add dielectric union when transitioning between dissimilar metals.
2. Mechanically restrain all joints.
3. Do not install dismantling joint compressed on 4", 6", and 8" services.
4. Dismantling joint length shall be 3 times the diameter of the pipe leading into the meter.
5. The thrust blocks shall be required per Standard Drawing No. 704 for 4" diameter pipe and larger. All ring-tite or flexible pipe with a diameter smaller than 4" shall require thrust blocks per City Engineer approval.
6. A protective enclosure, model BPE-200R by Pipeline Products or approved equal shall be installed.
7. All backflow preventers 2" or larger diameter shall be supported by stainless steel pipe saddle brace with 4" thick, 12" square concrete footing per City Approved equal list.
8. A secondary pressure relief valve shall be installed behind the reduced pressure principle backflow preventer installed on existing water services, serving water heaters or boilers without secondary thermal expansion relief devices. The secondary relief valve shall be a "Listed" device that has been listed by a nationally recognized testing laboratory or as approved by the Building Division. The secondary relief valve shall have a setting at or below the maximum working pressure of the water heater device and shall be inspected by the building inspector.
9. All backflow preventers must be tested by a certified backflow prevention device tester. A test and maintenance report for the backflow device must be received by the City prior to acceptance of public improvements, permit issuance or occupancy as determined by the City Engineer.
10. Threaded installations shall include a three-part union.
11. The installation is required by Title 17 of the Code of Regulations of the State Department of Health Services and State Water Resources Control Board and Ordinance No. 232 of the City of Milpitas.
12. The protective enclosure shall be in accordance with Standard Drawing No. 741.
13. Backflow device shall not block view of post indicator valve (PIV) or fire department connection (FDC), it shall be offset.
14. Service locations
    - If sidewalk is present: 2' minimum behind back of walk
    - If no sidewalk present: 2' minimum behind face of curb

NOTES FOR REDUCED PRESSURE PRINCIPLE ASSEMBLY (RP and RPDA):

1. The reduce pressure principle assembly shall be per City approved equal list (see Sheet 3). The size and model of the backflow preventer shall be determined for each installation. The entire assembly including the resilient seated shutoff valves and the test cocks shall be provided as a complete unit.
2. Install reduced pressure principle backflow preventer as shown on City Standard Drawings when any of the following conditions exist.
    a. When serving more than two (2) dwelling units.
    b. To separate potable water supply from irrigation system.
    c. When Recycled water connection serves the site.
    d. When Recycled water irrigation system has permanent plumbing connection to chemical feed.
    e. When any potable water service has permanent plumbing connection to pumps, injectors and tanks.

CITY OF MILPITAS, ENGINEERING DIVISION

REVISION	DATE
4	2022
5	2025
6	

NOTES FOR BACKFLOW PREVENTION ASSEMBLY (RP AND RPDA)

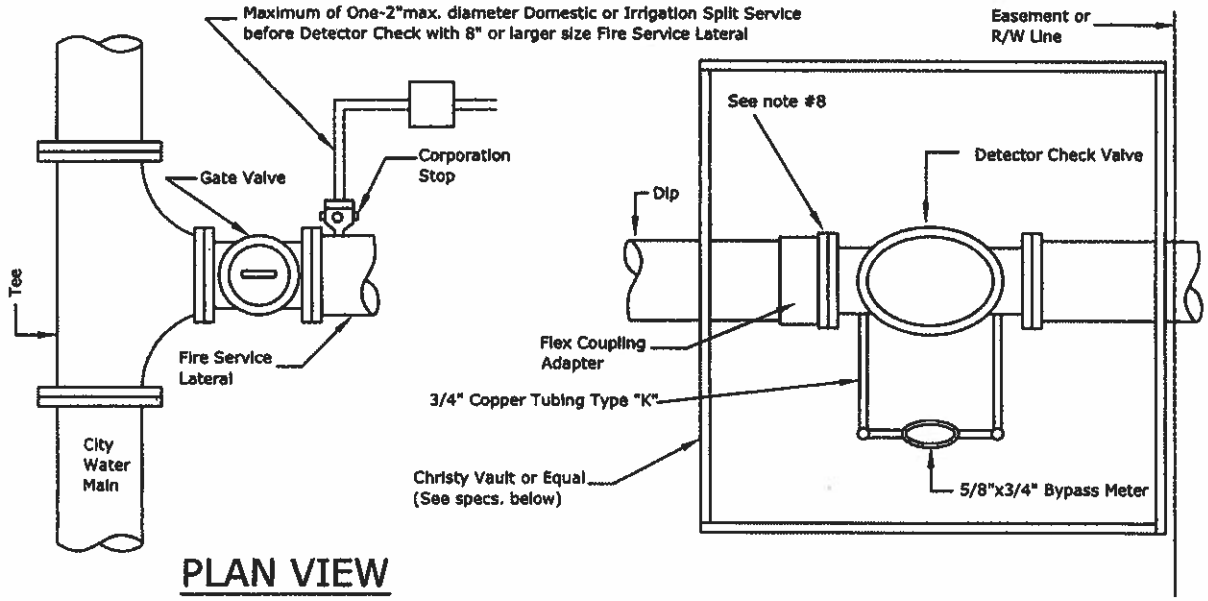
4 APPROVED BY:

RCE # C-XXXXX

STANDARD DRAWING NO. 734

DATE :

SHEET 4 OF 4



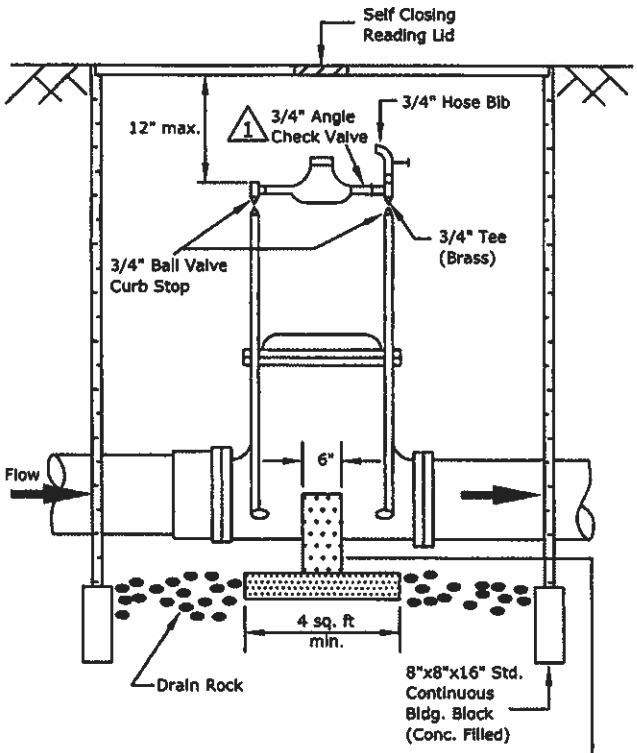
PLAN VIEW

Notes:

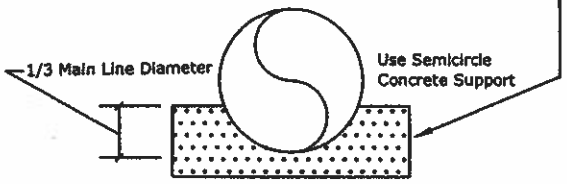
1. Meters will be furnished and installed by the City at customers expense. All others shall be installed by contractor.
3. 2. Detector check valve shall be Hershey/Grinnell 2 or approved equal.
3. All cast iron fittings & other buried ferrous metal shall be covered by two coats of mastic with a thickness of 15 mil. Stainless steel bolts shall be used on all flanged fittings.
4. Vault Specifications, Christy with necessary extensions or approved equal:

F.S. Size	Vault	LID
2"	B1730	B1730-51G
4"	R-17 P36	R1752H
6"	R-27 P36	R2752H
8"	R-33 P36	R3352H
10"	R-37 P36	R3752H

5. Concrete slab to be 2'x2'x4' thick(min.).
6. Drain rock to be 4" thick.
7. Reading lid shall be a minimum of 7" diameter or 7"x10" centered over each register. The opening shall span compound meter registers. The lid for the vault shall be a two piece steel checker plate, parkway, hinged, spring loaded, screw-down, galvanized with safety guard bars and self closing reading lid or lids (as requested).
8. Contractor shall install a Calpico Type E (option 3) Isolation kit or equivalent for the tapping flange at all metallic water main locations.
9. Vault side openings shall be grouted.
10. Loop fire services must use double check detector backflow preventer assemblies.



ELEVATION



NOT TO SCALE

CITY OF MILPITAS, ENGINEERING DIVISION

REVISION	DATE
1	1997
2	2001
3	2010

DETECTOR CHECK VALVE INSTALLATION FOR ON-SITE FIRE SERVICE

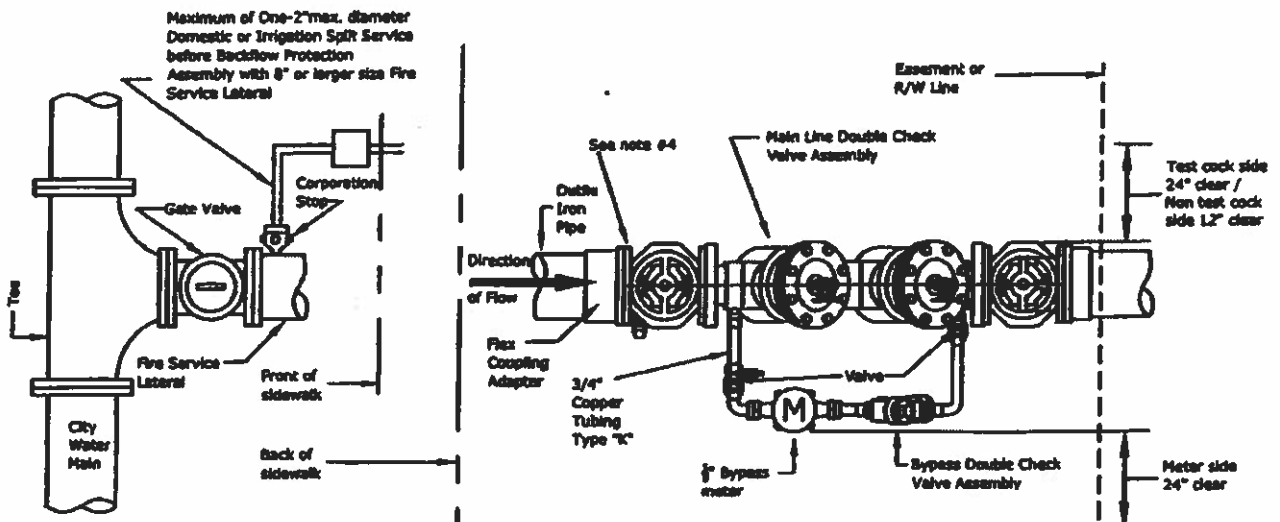
3 APPROVED BY:

PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE No. 40283

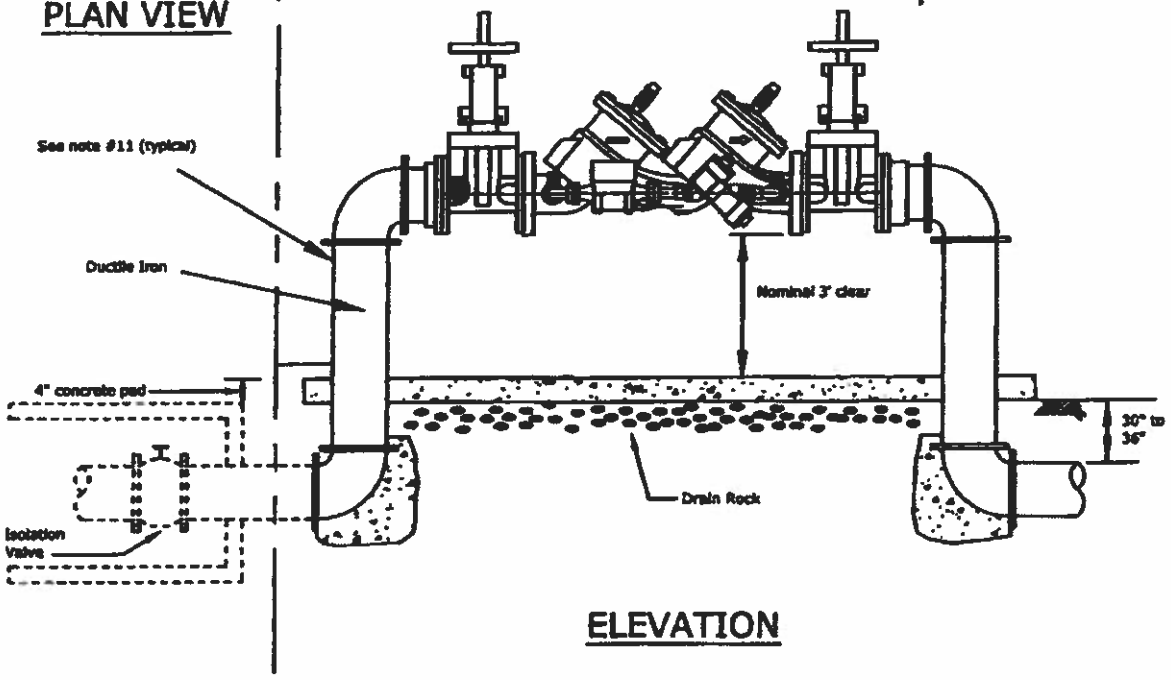
STANDARD DRAWING NO. 730

DATE : 6/15/10

SHEET 1 OF 3



PLAN VIEW



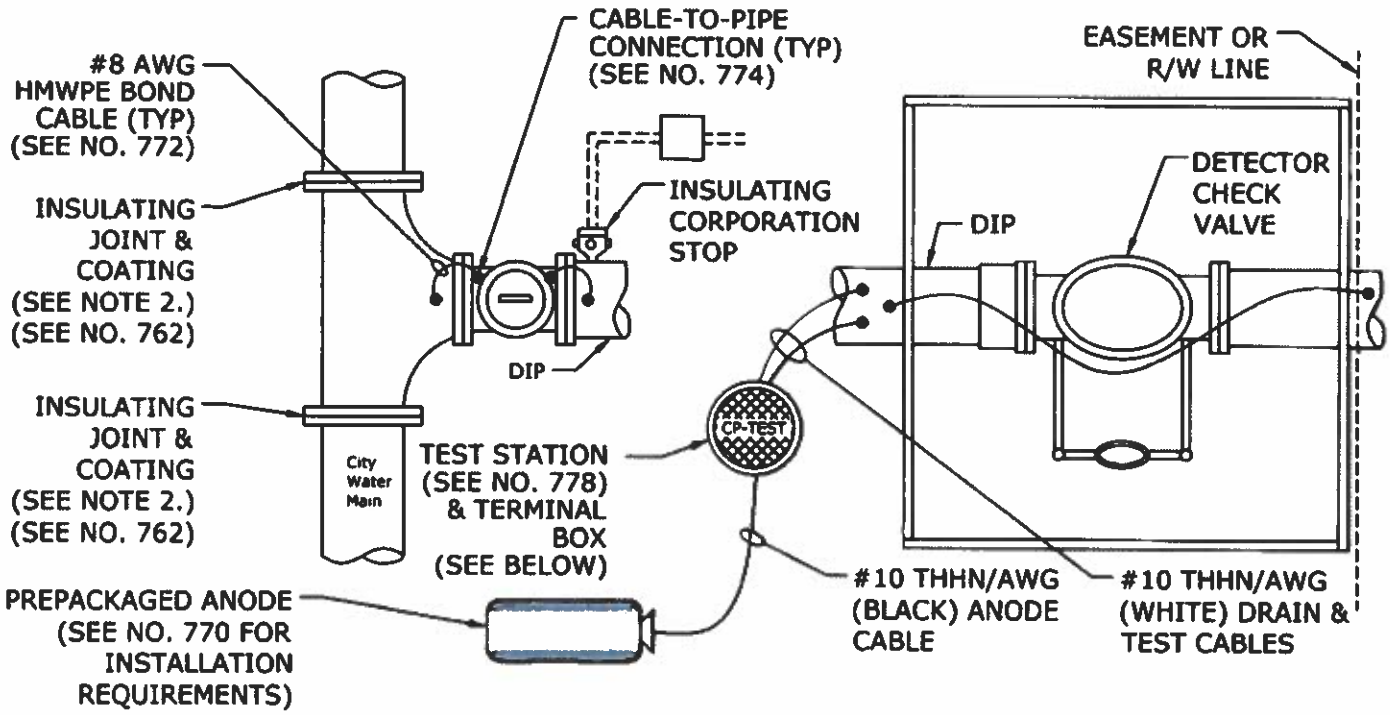
ELEVATION

Notes:

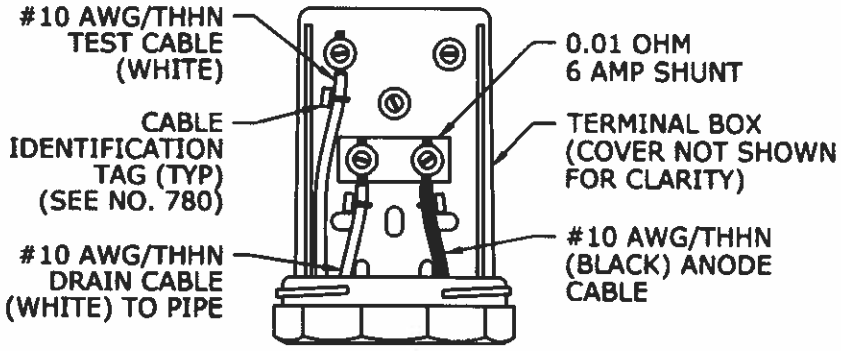
1. All buried metal pipe and fittings shall be covered by two coats of mastic with a thickness of 15 mil. Stainless steel bolts, nuts, and washers shall be used on all flanged fittings.
2. Concrete slab to be 4" thick(min.).
3. Drain rock to be 4" thick.
4. Contractor shall install a Calpico full face gasket $\frac{1}{8}$" thick (Fiberglass epoxy) Isolation sleeve/bushing/kit or equivalent for the tapping flange in upstream elbow of the backflow device between City's metallic service and on-site fire facilities at all metallic water main locations.

NOT TO SCALE

CITY OF MILPITAS, ENGINEERING DIVISION			
REVISION	DATE	DOUBLE CHECK DETECTOR BACKFLOW PREVENTION ASSEMBLY INSTALLATION FOR ON-SITE FIRE SERVICE	STANDARD DRAWING No.730
4	2016		
5	2022		DATE : 2/1/16
		4 APPROVED BY: CITY ENGINEER RCE No.38441	SHEET 2 OF 3



PLAN VIEW



ATS TERMINAL BOX

NOTES:
1. THE USE OF NONMETALLIC PIPE AS AN ALTERNATE MATERIAL TO DUCTILE IRON MUST BE APPROVED BY THE CITY OF MILPITAS ENGINEERING DEPARTMENT PRIOR TO USE.
2. IF CITY WATER MAIN IS NONMETALLIC, OMIT DIELECTRIC INSULATING FLANGE.

CITY OF MILPITAS, ENGINEERING DIVISION

REVISION	DATE
4	2016
5	2022

DETECTOR CHECK VALVE INSTALLATION FOR ON-SITE FIRE SERVICE - ANODE TEST STATION INSTALLATION

5 APPROVED BY: Steven Erickson
DIRECTOR OF ENGINEERING / CITY ENGINEER RCE # C-57242

STANDARD DRAWING NO. 730

DATE : 6-2-2022

SHEET 3 OF 3

Appendix E

Hazard Assessment – Post Action Letter

City of Milpitas
Public Works Department – Engineering
455 E. Calaveras Blvd
Milpitas, CA 95035
www.milpitas.gov

DATE: XX/XX/XXXX

{Contact Name}
{Mailing Address}

Site Name: XXXXXXXX
Service Address: XXX XXXXXXXX XXX

RE: DRINKING WATER CROSS CONNECTION PROTECTION - CITY COMPLETED INITIAL HAZARD ASSESSMENT WITH RECOMMENDATION(S) & COMPLIANCE REQUIREMENTS

Your site is designated a "High Hazard" for potential of contaminants to enter the public water supply. **Per the CA State Water Resources Control Board (SWRCB) Cross Connection Control Policy Handbook (CCCPH)**, a high hazard cross-connection means a cross-connection that poses a threat to the water quality or safety of the public water supply.

Article 2, Section 3.2.1 of the CCCPH states *all water services that are connected to a public drinking water system are to complete an initial assessment of their site.* Typically, water customers are required to complete the assessment with results reported to the City. Due to the high hazard designation, the City had the assessment completed at your site by a City contracted Cross-Connection Control Specialist. The completed assessment included a written finding that identified all hazards at the time of the assessment, the appropriate degree of hazards, and the backflow protection necessary to mitigate the hazard. This completed assessment will serve as your Initial Hazard Assessment.

The Certified Specialist determined that a water service protection level at your site is currently:

{Protection – Adequate/Not Adequate?}

Service Type	Meter ID	Hazard Degree	Hazard Type	Inadequate Backflow Preventer Type

See the recommendation(s) below as to what corrections need to be made to achieve compliance:

- **{Certified Cross-Connection Specialist Recommendation}**

IN ACCORDANCE WITH CITY OF MILPITAS MUNICIPAL CODE, TITLE VIII, CHAPTER 3, YOU WILL HAVE THIRTY CALENDAR DAYS FROM THE DATE OF THIS NOTICE TO COMPLETE THE REQUIRED UPGRADES AS INDICATED IN YOUR SIGNED ASSESSMENT, TO NOTIFY THE CITY THAT THE WORK HAS BEEN COMPLETED AND TO HAVE THE BPA TESTED. FAILURE TO COMPLETE THE NECESSARY WORK AND TESTING MAY RESULT IN THE TERMINATION OF YOUR WATER SERVICE.

To upload test results and access additional information, scan the QR code below to access the City's "Cross Connection Control and Backflow Prevention" webpage. Resources are available on this page including a list of approved BPA testers, a list of approved devices, and a link to log into the SwiftComply System to upload test results.

As part of City's annual noticing, you will receive a notice in **June** to do the required annual performance testing of your BPA. With this notice, you will also be asked to complete your initial hazard assessment. **With the City already completing this assessment, you can ignore this requirement.**

You must coordinate with a Cross-Connection Specialist to perform a subsequent hazard assessment of your site and submit results to the City under the following criteria:

- if a user premises changes account holder, excluding single-family residences;
- if a user premises is newly or re-connected to the PWS;
- if evidence exists of changes in the activities or materials on a user's premises;
- if backflow from a user's premises occurs;
- periodically, as identified in the PWS's Cross-Connection Control Plan required pursuant to CCCPH section 3.1.4.;
- if the State Water Board requests a hazard assessment of a user's premises; and
- if the PWS concludes an existing hazard assessment may no longer accurately represent the degree of hazard.

For questions regarding the City's Cross Connection Control Program, contact

Ray Moreno - Cross-Connection Specialist

Desk: 408-585-3348
Cell: 408-690-9752
Email: rmoreno@milpitas.gov

You can also send inquiries to backflow@milpitas.gov

Appendix F

BPA Annual Testing Notices

City of Milpitas
Public Works Department – Engineering
455 E. Calaveras Blvd
Milpitas, CA 95035
www.milpitas.gov

06/02/2025

Test Contact
123 Fake St. Suite 4
Milpitas, CA 95035

RE: FIRST NOTICE - BACKFLOW ASSEMBLY TEST DUE JULY 31ST
INITIAL HAZARD ASSESSMENT DUE SEPTEMBER 1ST

The City of Milpitas (City) is committed to protecting the public water system from contaminants and pollutants resulting from the backflow or back-siphonage of on-site water through water service connections.

The annual testing of Backflow Prevention Assemblies (BPA) is required by the City Municipal Code, Title VIII, Chapter 3, 3-7.00 and the California State Water Resources Control Board's (SWRCB) Cross-Connection Control Policy Handbook (CCCPH) Article 3, Section 3.3.3 where it states: ***All backflow devices at this site must be tested upon initial installation and then annually. When a device is found to be inadequate by either a failed inspection and/or test, the device must be repaired or replaced and re-tested immediately.***

This letter is to inform you that the water service(s) serving your site are equipped with BPA(s) that are due for annual testing. **It is your responsibility to have this testing completed.**

BPA Type	BPA SN	Make	Model	Size	Meter SN	Last Test Date
LOCATION ID:		SERVICE TYPE:		HAZARD TYPE:		
BPA LOCATION:						
BPA Type	BPA SN	Make	Model	Size	Meter SN	Last Test Date
LOCATION ID:		SERVICE TYPE:		HAZARD TYPE:		
BPA LOCATION:						

The City has developed a "Cross Connection Control and Backflow Prevention" webpage to provide you with important resources, such as:

- A link to enter required customer information – due July 1st
- A list of approved BPA testers
- A list of approved devices, and
- A link to log into the SwiftComply system – submittals due July 31st
- To submit an Incident Report

Please scan the QR code on this letter to access this webpage. **The "Customer Provided Information" must be submitted by July 1, 2025, and annual BPA test report(s) completed by a tester on the approved BPA tester list, must be submitted through the SwiftComply system by July 31, 2025.** A paper copy of the report will NOT be accepted. Please schedule testing in advance of the due date to allow for repairs and/or replacements and to avoid any penalties.

Notes:

1. *You are required to immediately notify the City at 408-586-2600 if an imminent or occurring hazard that may impact the public water system is known, observed and/or reported. Additionally, incident follow up is to be reported at the "Incident Report" link accessed by using the above QR code.*
2. *Test results and/or assessments completed by a tester or specialist not on the City qualified list will NOT be accepted.*
3. *You are annually required to test both the main assembly, and the bypass assembly if RPDA or DCDA backflows are at your property.*
4. *You are required to mark the backflow serial numbers on the exterior of any encasement covering your BPA's.*
5. *If you are required to install a backflow prevention assembly where none had existed before, you will have 30 days to complete the installation & testing (Certification) or risk termination of water service.*

City of Milpitas
Public Works Department – Engineering
455 E. Calaveras Blvd
Milpitas, CA 95035
www.milpitas.gov

INITIAL HAZARD ASSESSMENT REQUIREMENTS

In addition to the annual BPA test, it is your responsibility to have completed an Initial Hazard Assessment of your site as required by the CA State Water Resources Control Board (SWRCB) Cross Connection Control Policy Handbook (CCCPH) Article 2, Section 3.2.1 where it states: *All water services that are connected to a public drinking water system are to complete an initial assessment of their site.* In accordance with City of Milpitas Municipal Code, Title VIII, Chapter 3, if the assessment finds that your BPA is inadequate for the hazard assessed, you will have 30 calendar days from the date of the signed assessment to protect your water service with the appropriate BPA as indicated in your signed assessment. Altered or replaced BPA's will require re-testing and submittal of test results via the SwiftComply system. Failure to comply may cause your water service will be **TERMINATED** until the correction has been made.

You must coordinate with a Cross-Connection Specialist to perform an Initial Hazard Assessment of your site and to determine the following:

(1) Existence of cross-connections;
(2) Type and use of materials handled and present, or likely to be, on the user premises;
(3) Degree of piping system complexity and accessibility;
(4) Access to auxiliary water supplies, pumping systems, or pressure systems;
(5) Distribution system conditions that increase the likelihood of a backflow event (e.g., hydraulic gradient differences impacted by main breaks and high-water demand situations, multiple service connections that may result in flow-through conditions, etc.);
(6) User premises accessibility;
(7) Previous backflow incidents on the user premises; and
(8) Requirements and information provided in the CCCPH.

Per the CCCPH, a Cross-Connection Control Specialist must review or conduct an Initial Hazard Assessment and make a written finding and recommendation that identifies all hazards at the time of the assessment, the appropriate degree of hazards, and the backflow protection necessary to mitigate the hazard. The City currently does not have a Certified Cross-Connection Specialist list; however a Certified Tester may also be a Certified Specialist able to perform a hazard assessment. Hazard assessments completed by any AWWA Certified Cross-Connection Specialist are acceptable.

Please scan the QR code above to locate a AWWA Certified Cross-Connection Control Specialist. Once on this site, scroll down to "Certification Type" and from the pull-down menu select "Cross Connection" from the list and sort by City. **If after the initial assessment there are any changes to the account holder, change in operations, there is a backflow event, or at the request of the State Water Board and/or City, an immediate re-assessment is required.**

The Initial Hazard Assessment must be completed and submitted by September 1, 2025 to the link provided in the QR code below. A paper copy of the report will NOT be accepted.

For questions regarding the City's Cross Connection Control Program, contact Ray Moreno - Cross-Connection Specialist at 408-586-3348. You can also send inquiries to backflow@milpitas.gov.

City of Milpitas
Public Works Department – Engineering
455 E. Calaveras Blvd
Milpitas, CA 95035
www.milpitas.gov

08/01/2025

Test Contact
123 Fake St. Suite 4
Milpitas, CA 95035

RE: SECOND NOTICE - BACKFLOW ASSEMBLY TEST DUE JULY 31ST
INITIAL HAZARD ASSESSMENT DUE SEPTEMBER 1ST

This letter is to inform you that one or more Backflow Prevention Assemblies (BPA) on your site are past due for annual testing. It is your responsibility to have this testing completed.

A notification letter was sent approximately 60 days ago requesting that an annual test be performed no later than July 31, 2025. You now have 30 days as of the date of this notice to satisfy this requirement. Test results must be uploaded through the SwiftComply system by a tester who is listed on the City's approved BPA Tester List. Instruction on how to get this done are noted below. A paper copy of the report will NOT be accepted.

Please notify the City at 408-585-3348 within 5 days of the receipt of this notice of the scheduled test date. Submit this information to the Utility Engineering Division at backflow@milpitas.gov. If the BPA has already been tested, please contact the City to verify that a test report has been submitted via the SwiftComply system.

Your water service will be scheduled for termination if your BPA test report(s) are not received within 30 days of this notice. Prior to this occurring, you will be sent a **Notice of Intent to Terminate Water Service** for failure to test on a scheduled date. Additionally, a penalty fee may be levied for failure to respond to prior notices. If you fail to have your BPA tested by the water service termination date, an additional termination fee may be added to your utility bill for each device not tested.

Scan the QR code above to access the City's "Cross Connection Control and Backflow Prevention" webpage. Many resources are available on this page including:

- A link to enter required customer information – due July 1st
- A list of approved BPA testers
- A list of approved devices, and
- A link to log into the SwiftComply system – submittals due July 31st
- To submit an Incident Report

If not yet completed, please immediately access this webpage and click on the "Customer Provided Information" link to submit your information.

For questions regarding the City's Cross Connection Control Program, contact Ray Moreno - Cross-Connection Specialist at 408-585-3348. You can also send inquiries to backflow@milpitas.gov.

City of Milpitas
Public Works Department – Engineering
455 E. Calaveras Blvd
Milpitas, CA 95035
www.milpitas.gov

INITIAL HAZARD ASSESSMENTS REQUIREMENTS

In addition to the annual BPA test, it is your responsibility to have completed an Initial Hazard Assessment of your site as required by the CA State Water Resources Control Board (SWRCB) Cross Connection Control Policy Handbook (CCCPH) Article 2, Section 3.2.1 where it states: *All water services that are connected to a public drinking water system are to complete an initial assessment of their site.* In accordance with City of Milpitas Municipal Code, Title VIII, Chapter 3, if the assessment finds that your BPA is inadequate for the hazard assessed, you will have 30 calendar days from the date of the signed assessment to protect your water service with the appropriate BPA as indicated in your signed assessment. Altered or replaced BPA's will require re-testing and submittal of test results via the online submission portal. Failure to comply may cause your water service to be **TERMINATED** until the correction has been made.

If you've had your Initial Hazard Assessment completed by a certified Cross-Connection Specialist with results submitted, then please disregard this portion of the notification.

You must coordinate with a Cross-Connection Specialist to perform an Initial Hazard Assessment of your site and to determine the following:

(1) Existence of cross-connections;
(2) Type and use of materials handled and present, or likely to be, on the user premises;
(3) Degree of piping system complexity and accessibility;
(4) Access to auxiliary water supplies, pumping systems, or pressure systems;
(5) Distribution system conditions that increase the likelihood of a backflow event (e.g., hydraulic gradient differences impacted by main breaks and high-water demand situations, multiple service connections that may result in flow-through conditions, etc.);
(6) User premises accessibility;
(7) Previous backflow incidents on the user premises; and
(8) Requirements and information provided in the CCCPH.

Per the CCCPH, a Cross-Connection Control Specialist must review or conduct an Initial Hazard Assessment and make a written finding and recommendation that identifies all hazards at the time of the assessment, the appropriate degree of hazards, and the backflow protection necessary to mitigate the hazard. The City currently does not have a Certified Cross-Connection Specialist list; however a Certified Tester may also be a Certified Specialist able to perform a hazard assessment. Hazard assessments completed by any AWWA Certified Cross-Connection Specialist are acceptable.

Please scan the QR code above to locate a AWWA Certified Cross-Connection Control Specialist. Once on this site, scroll down to "Certification Type" and from the pull-down menu select "Cross Connection" from the list and sort by City. **If after the initial assessment there are any changes to the account holder, change in operations, there is a backflow event, or at the request of the State Water Board and/or City, an immediate re-assessment is required.**

The Initial Hazard Assessment must be completed and submitted by September 1, 2025 to the link provided in the QR code below. A paper copy of the report will NOT be accepted.

For questions regarding the City's Cross Connection Control Program, contact Ray Moreno - Cross-Connection Specialist at 408-585-3348. You can also send inquiries to backflow@milpitas.gov.

City of Milpitas
Public Works Department – Engineering
455 E. Calaveras Blvd
Milpitas, CA 95035
www.milpitas.gov

09/01/2025

Test Contact
123 Fake St. Suite 4
Milpitas, CA 95035

RE: FINAL NOTICE OF INTENT TO TERMINATE WATER SERVICE FOR FAILURE TO TEST AND/OR FAILURE TO COMPLETE INITIAL HAZARD ASSESSMENT

This is your third and **FINAL NOTICE** to submit a passing performance test result for your Backflow Prevention Assembly (BPA) and/or an Initial Hazard Assessment of your site before **termination** of your water service. Approximately 90 days ago and 30 days ago you received a first and second notice. Each notice alerted you of the City of Milpitas Municipal Code regarding Cross-Connection Control and CA State Water Resources Control Board's Cross-Connection Control Policy Handbook requirements.

BPA Type	BPA SN	Make	Model	Size	Meter SN	Last Test Date
LOCATION ID:		SERVICE TYPE:		HAZARD TYPE:		
BPA LOCATION:						
BPA Type	BPA SN	Make	Model	Size	Meter SN	Last Test Date
LOCATION ID:		SERVICE TYPE:		HAZARD TYPE:		
BPA LOCATION:						

As authorized by the City of Milpitas Municipal Code, Title VIII, Chapter 3, 3-3.0, **failure to test the BPA(s) at your premises has resulted in the scheduled TERMINATION of your water service after 30 days from the date of this notice. Service will not be restored until such conditions or defects are corrected to the satisfaction of the City Engineer.**

Please notify the City at 408-585-3348 within 5 days of the receipt of this notice of the scheduled test date. Should your water service be **TERMINATED**, you will be required to test your BPA and/or complete an Initial Hazard Assessment of your site prior to your water service being restored. If replacement of the BPA is required, you must first obtain a City-issued plumbing permit prior to beginning work. For domestic water services, please visit the City's Office of Building Safety located at City Hall (455 E Calaveras Blvd) or call (408) 586-3240 for more permitting information. For fire services, please visit the Milpitas Fire Prevention Department Located at City Hall, 1st floor, or call (408) 586-3365 for more permitting information.

Upon the repair or installation of an existing or new assembly, a performance test must immediately be performed by a City-approved BPA tester with results uploaded into the SwiftComply system.

Scan the QR code above to access the City's "Backflow Prevention" webpage. Many resources are available on this page including:

- A link to enter required customer information
- A list of approved BPA testers
- A list of approved devices
- A link to log into the SwiftComply system
- To submit an Incident Report

If not yet completed, please immediately access this webpage and click on the "Customer Provided Information" link to submit your information.

If you fail to have your BPA(s) tested by the **TERMINATION** date, you will incur a termination fee of **$141** on your utility bill for each BPA listed in this notification. **It is the responsibility of whoever receives this notice (owner and/or tenant) to notify the City within 5 days of this notice.**

If the BPA(s) have already been tested, contact Ray Moreno at 408-585-3348 to ensure that test report(s) have been received.

City of Milpitas
Public Works Department – Engineering
455 E. Calaveras Blvd
Milpitas, CA 95035
www.milpitas.gov

INITIAL HAZARD ASSESSMENTS REQUIREMENTS

In addition to the annual BPA test that is due, it is your responsibility to have completed an Initial Hazard Assessment of your site as required by the CA State Water Resources Control Board (SWRCB) Cross Connection Control Policy Handbook (CCCPH) Article 2, Section 3.2.1). Per the City of Milpitas Ordinance, Title VIII, Chapter 3, if the assessment finds that your BPA is not adequate for the hazard, you will have 30 calendar days from the date of this notice to protect your water service with the appropriate BPA as indicated in your signed Hazard Assessment report. Altered or replaced BPA's require re-testing and electronic submittal of test results via the SwiftComply System. Failure to comply may cause your water service to be **TERMINATED** until the correction has been made.

If you've had your Initial Hazard Assessment completed by a certified Cross-Connection Specialist with results submitted, then please disregard this portion of the notification.

You must coordinate with a Cross-Connection Specialist to perform an Initial Hazard Assessment of your site and to determine the following:

(1) Existence of cross-connections;
(2) Type and use of materials handled and present, or likely to be, on the user premises;
(3) Degree of piping system complexity and accessibility;
(4) Access to auxiliary water supplies, pumping systems, or pressure systems;
(5) Distribution system conditions that increase the likelihood of a backflow event (e.g., hydraulic gradient differences impacted by main breaks and high-water demand situations, multiple service connections that may result in flow-through conditions, etc.);
(6) User premises accessibility;
(7) Previous backflow incidents on the user premises; and
(8) Requirements and information provided in the CCCPH.

Per the CCCPH, a Cross-Connection Control Specialist must review or conduct an Initial Hazard Assessment and make a written finding and recommendation that identifies all hazards at the time of the assessment, the appropriate degree of hazards, and the backflow protection necessary to mitigate the hazard. The City currently does not have a Certified Cross-Connection Specialist list; however a Certified Tester may also be a Certified Specialist able to perform a hazard assessment. Hazard assessments completed by any AWWA Certified Cross-Connection Specialist are acceptable.

Please scan the QR code above to locate a AWWA Certified Cross-Connection Control Specialist. Once on this site, scroll down to "Certification Type" and from the pull-down menu select "Cross Connection" from the list and sort by City. **If after the initial assessment there are any changes to the account holder, change in operations, there is a backflow event, or at the request of the State Water Board and/or City, an immediate re-assessment is required.**

The Initial Hazard Assessment must be completed and submitted by September 1, 2025 to the link provided in the QR code below. To avoid TERMINATION of your water service this assessment must be submitted no later than October 31, 2025. A paper copy of the report will NOT be accepted.

It is the responsibility of whoever receives this notice (owner and/or tenant) to notify the City at 408-585-3348 within 5 days of this notice to advise when the premises are scheduled for assessment.

For questions regarding the City's Cross Connection Control Program, contact Ray Moreno - Cross-Connection Specialist at 408-586-3348. You can also send inquiries to backflow@milpitas.gov.

Appendix G

City of Milpitas Water Emergency Response Plan, Updated October 2022

CONFIDENTIAL
NOT INCLUDED